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White Paper on the
G7 Information Society Pilot Project - Theme 6
Environment and Natural Resources Management

INTRODUCTION

Since it was launched in February 1995 at the Information Ministers Conference in Brussels, the Environment and Natural Resource Management (ENRM) Pilot Project demonstrated the potential of a full-fledged Global Information Infrastructure. This includes efforts to increase international and interdisciplinary interoperability as well as efforts to integrate data collections that bear on environmental concerns. The long-term result of these efforts is a virtual library of information held in globally distributed electronic sites accessible on emerging electronic networks.

The objective of this demonstration project is to increase electronic linkages and integration of distributed databases of information relevant to the environment. An expert group, representing agencies and institutions in G7 and non-G7 nations, is building on existing national and international efforts to create a Global Environmental Information Locator Service. Their efforts include interconnecting catalogues and directories around the world and insuring that all countries can access them. They are also trying to facilitate the exchange and integration of ENRM data and information.

IMPLEMENTATION

The expert group initially agreed to a two-year cycle of activities focusing on target issues of global concern including support for the United Nations Framework convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD). Reaffirming their intention to create a virtual library, the experts organized their efforts through three topic working groups (TWGs): Meta Information co-chaired by the European Commission and the European Environment Agency (EEA); Biological Diversity chaired by Germany; and Climate Change chaired by the UNFCCC Secretariat.

The Meta Information TWG developed, at the EC Centre for Earth Observation (CEO), the prototype ENRM gateway server now identified as a prototype server for the Global Environmental Information Locator Service (GELOS) at <http://ceo.gelos.org>. This server not only has demonstrated the tools and techniques for discovering and retrieving networked information but also has hosted an increasing number of resources submitted by providers around the world. A "data collection policy" was developed to cover the pilot phase of the ENRM project. The CEO has offered this server to other organizations who are participating in building up the ENRM virtual library. The EEA and the U.S. National Oceanic and Atmospheric Administration (NOAA) will install this server and populate it with information in accordance with their data collection policies. These organizations have also committed themselves to assure the long-term maintenance of those resources that have already been submitted in accordance with the data collection policy of the pilot phase. Other hosts may be involved in due course.

The Meta Information TWG also developed "A Standard Element Set For the Global Environmental Information Locator Service (GELOS)." This element set is based on international standards for networked information discovery and retrieval. The other TWGs will use this core element set in making more accessible information relevant to those global conventions that they support. U.S. Vice President Gore in a press release acknowledged the expert group's adoption of the international Z39.50 standard for information retrieval as a remote search tool.

The Biological Diversity TWG demonstrated how the German and Canadian Clearing House Mechanisms (CHMs) for Biological Diversity provide examples for other national focal points in applying networked discovery and retrieval technologies which support information requirements under the CBD. The German CHM and the German Environment Information Network were among the sites demonstrated at the G7 ENRM exhibit during the Information Society and Development Conference in South Africa, May 1996.

The Biological Diversity TWG also developed a list of key biodiversity terms that proves useful in searching for related resources. The national reports required under the CBD have also been added to the GELOS server.

The Climate Change TWG began its work much later than the other TWGs. However, it has attracted participation from developed and developing countries by holding its meetings during the sessions of the UNFCCC subsidiary bodies in Bonn. Since the second meeting, the UNFCCC secretariat has also posted to the GELOS server executive summaries of national communications received under the FCCC. Making national communications on climate change more accessible is one of the original goals for this pilot project.

RESULTS AND ASSESSMENT

The ENRM project has encouraged and received greater participation from non-G7 nations and other interested parties. This participation has been reflected not only in their support of the TWGs but also in attending and hosting meetings of the expert group. Climate change and biological diversity scientists have joined with information technologists in seeking to help users world wide in finding and using environmental data and information. They have willingly shared their expertise in the common effort to build a virtual library using electronic tool kits which are more widely and easily available.

The ENRM project has encouraged the close involvement of the secretariats for the two global conventions through the work of the TWGs on climate change and biological diversity. This relationship has resulted from genuine offers of technical support, advice and assistance by those experts who are not part of either secretariat.

The ENRM project has promulgated a global information locator service based on international standards. Resource discovery and retrieval techniques are continuing to evolve through excellent work done by many experts who have joined the project. Their

efforts have contributed immensely to the rapid development of networked information search and retrieval - the essential element for an ENRM virtual library.

PROSPECTS FOR THE FUTURE

The work started under the ENRM project related to the information technology aspects of the climate change and biological diversity conventions will likely continue through the secretariats for those conventions. It may not be necessary to keep their relevant TWGs operating beyond the termination of the pilot project. The role of those TWGs was to "jump start" the process of bringing resources collected under those conventions into a virtual library.

The role of the Meta Information TWG, however, should continue as new tools and techniques for networked information discovery and retrieval emerge as international standards. Those advances may be made in the context of other regional or international coordination groups with which the Meta Information TWG can associate its efforts to enhance the Global Environmental Information Locator Service.

The role of the expert group -- the steering committee for the ENRM project -- will likely diminish as the number of TWGs is reduced to one. The tasks of promoting enhanced networked information discovery and retrieval tools and protocols have strong foundations in other groups and organizations. Therefore, the ENRM expert group may not be needed after the end of the pilot phase, unless the final ENRM project report in 1998 concludes otherwise based on additional guidance received from the G7 Information Society national coordinators.

CONCLUSION

As the ENRM project completes the final phase of the project by the middle of 1998, possible support for other global conventions was removed from the action plan. Remaining efforts will focus on two areas. First, the project will demonstrate that the GELOS can support the secretariats of the climate change and biological diversity conventions in publishing information resources related to those conventions. Second, the project will continue to demonstrate that the GELOS can help others around the world to find more easily the data and information relevant to the environment and natural resources management.

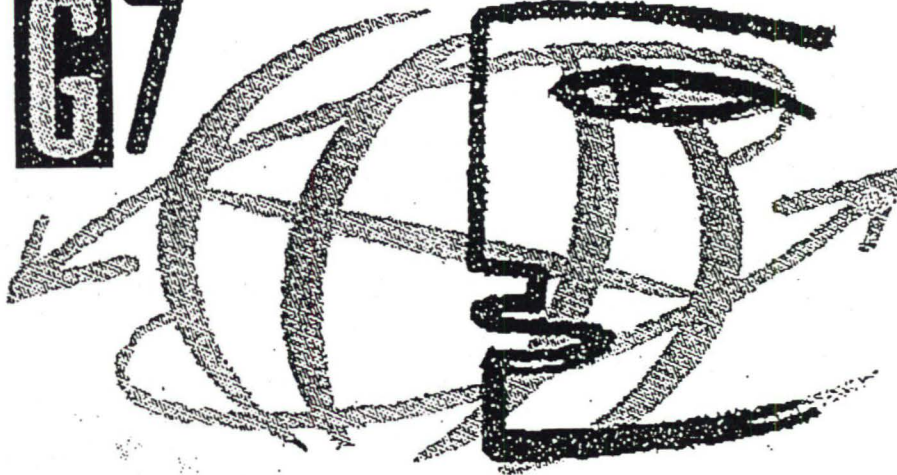
The ENRM project has achieved its objective of taking first steps to:

- create a virtual global library of environmental and natural resources data and information through the collaboration of ENRM partners located around the world; and
- develop a Global Environmental Information Locator Service through which that virtual library can be accessed.

The ENRM project has also achieved the wider G7 Information Society objective of laying the foundations in this field for promoting the use of the information highways.

Information Society

G7



G7 Global Healthcare Applications Project Summary of activities 1997 by the Chairman

The activities of project n°8; "Global Healthcare Applications Project", (GHAP) have successfully continued in the course of 1997 and the first positive results have emerged. Following 30 months of activity reorientation both in the technical field and the management field have to be envisaged for future activities.

- Two plenary meetings (GHAP n°7 and GHAP n°8) have brought together the coordinators of the G7 countries and the European Commission in Washington on 27th and 28th January 1997 and in Brussels on 30th September and October 1st 1997. Observer countries : Australia, Ireland, the Netherlands, Greece and Korea have participated in technical discussions concerning the projects.
- The results of the 6 sub-projects launched in 1995 and in particular the feasibility studies funded by the European Union have been presented. As a result of these discussions, sub-project 1 (Public Health Network) can be considered as completed. Other sub-projects such as sub-project 2 (Oncology Network) and sub-project 3 (Cardiovascular Network) continue very actively and have already realised specific functions such as the use of telematics networks for second opinion in medical diagnosis and for allowing the citizen to manage his own health situation. Sub-project 6 (Health Cards) has arrived at the stage that implementation depends on national initiatives since qualified technical solutions do now exist and several Member States have already accepted them. Finally, sub-projects 4 (Telemedicine) and 5 (Enabling Mechanisms) have been reoriented and refocused. Canada takes the responsibility for sub-project 4 and the United States collaborate in the framework of sub-project 5 notably for problems concerning intellectual property rights.

- At the occasion of these meetings each G7 co-ordinator was invited to define national support envisaged for each of the sub-projects. The overall results show that there is on average 90% of support for the sub-projects at the national level.
- Several new sub-projects were proposed and discussed for receiving the G7 Health label. The Canadian sub-project (Evidence and Effectiveness Based Medicine, sub-project 7), the American sub-project (Multilingual Anatomical Digital Database, sub-project 8) and the Japanese sub-project (Medical Image Reference Centre, sub-project 9) have been approved. The discussions concerning these sub-projects have revealed a majority view on the need to respect the rules defined in February 1995 on the global character, the public interest character and the pre-competitive character of the G7 activities.
- These results demonstrate both the success of the sub-projects and the increasing commitment of the G7 Member States. The increasing active participation of Japan and the United States of America in the sub-projects and in the collective management of the Global Healthcare Applications Project is warmly welcomed. After the United States, where a meeting was organised in January 1997, Japan has proposed to host the next meeting (GHAP 9) in Tokyo in March 1998. The United Kingdom proposes to host a meeting in the second part of 1998 under the British presidency and Australia is candidate to host one in 1999.
- After 30 months of management of the GHAP project it has been demonstrated that the G7 platform allows to catalyse global activities in the area of Health Telematics. It would, however, be desirable that the overall co-ordination, until now organised by the European Union could rotate in a "democratic" way. This could be well received by the national co-ordinators, and in particular by the United Kingdom, country responsible for the next G7 presidency.

Conclusions :

At the occasion of the forthcoming meeting in Washington with all global co-ordinators, three questions concerning the Global Healthcare Applications Project should be discussed :

1. Is a rotating chairmanship for the health project (and others if they so wish) acceptable?
2. Can a commercial project receive the G7 label?
3. Can the G7 Global Healthcare project accept the invitation to hold its first meeting in 1999 in Australia?

Progress report October 1997

Project 4 : Electronic libraries : Bibliotheca Universalis

Objectives

The objective of the project is to constitute from existing programs the large, distributed virtual collection of humankind knowledge, made available to a large public via networks, and to advance international cooperation towards the establishment of global electronic library systems. The project should strengthen the function of libraries and improve availability at international levels of digitized resources including both bibliographic records and information content itself (integrating text, graphics, still images, sound and video information). It will promote the large scale digitization of materials on electronic library systems. Furthermore, it should demonstrate how integrated digitization techniques support long term preservation as well as enable immediate, easy access to such documents including the linguistic dimension.

Actions in 1996

- 1) Informal meeting in Tokyo (March, 14th). The directors of the American, English, French and Japanese national libraries discussed the demonstration which was to be organised for the Information Society and Development conference and the survey of digital collections.
- 2) ISAD conference (May 13th-15 th), Midrand, South Africa. During the conference, a prototype of Bibliotheca universalis was demonstrated, which made a great success. This prototype gave access to multimedia data on the theme of « *Africa, Culture and Civilization* » supplied by G7 partner countries

Actions in 1997 and programme for 1998

1) Survey on digitization programs

A survey on digitization programs for the purpose of sharing information on current technologies, standards and methods applied to digitization programs among all partner countries (G7 and non-G7) and on national policies or strategies has been made.

The survey was sent back by 11 countries (Belgium, Canada, Czech Republic, France, Germany, Japan, Netherlands, Spain, Switzerland, United Kingdom, United States). The surveys were disseminated to the partners.

2) Bibliotheca Universalis Second general meeting, Copenhagen, 1st September 1997

Main issues :

- New partners

Koninklijke Bibliotheek (Netherlands)

Koninklijke Bibliotheek Albert I / Bibliothèque Royale Albert 1er (Belgium)

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DIRECTION GÉNÉRALE DES POSTES ET TÉLÉCOMMUNICATIONS

Service des Affaires Internationales

Biblioteca Nacional (Spain)
Schweizerische Landesbibliothek/Bibliothèque Nationale Suisse (Switzerland)
Národní knihovna (Czech Republic)
Instituto de Biblioteca Nacional e do Livro (Portugal)

- **Observer**
UNESCO

All the partners decided to continue the project based on the following recommendations to be implemented in 1998 :

- Formal agreement : **A Memorandum of Understanding** will be drafted and signed by all partners in 1998. The national libraries will be involved in the project as such.
- A **common theme** for the constitution of Bibliotheca Universalis was adopted by the partners : *"Exchanges between People"*. Each partner will include this topic within its digitization program.
- A **working group on technologies and standards** will be created. The core group consists of the National Library of Canada and the European working group from the CoBRA Forum (DG XIII E-4). They will submit proposals to the other partners.
- **Networked Information dissemination on Bibliotheca Universalis** : all partners will load on their WWW servers information on their current digitization programmes (in original language and in English). The European W3 server for national libraries GABRIEL (<http://www.konbib.nl/gabriel/>) will be used as a linking platform for Bibliotheca Universalis. It will support exchange of information between partners and increase visibility on Bibliotheca Universalis.
- Efforts will be made by the partners to promote **multilingual access** to the digitized collections.

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G7 **Environment**

About the G7

- ☐ G7 Global Information Society
- ☐ Themes
 1. Global Inventory Project
 2. Global Interoperability For Broadband Networks
 3. Cross-cultural Education and Training
 4. Bibliotheca Universalis
 5. Electronic Museums and Galleries
 6. Environment and Natural Resource Management (ENRM)
 7. Global Emergency Management
 8. Global Healthcare Applications
 9. Government Online
 10. A Global Marketplace for SME'S
 11. Maritime Information Systems

October 20, 1997

Pointers to some U.S. "Information Society" initiatives
Tom Kalil, White House National Economic Council

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- The Congress is likely to approve \$500 million in funding for Department of Education programs designed to help states and localities with the "4 pillars" of the President's Educational Technology Initiative -- computers, connectivity, content, and teacher training. [See <http://www.ed.gov/Technology/>]
- Grassroots efforts like "NetDay" [<http://www.netday.org>] and "TechCorps" [<http://www.ustc.org>] and ThinkQuest [<http://io.advanced.org/thinkquest/>] continue to thrive.

2. Next Generation Internet

- The goal of Next Generation Internet is to sponsor R&D in advanced networking technologies, connect more than 100 universities and national labs at speeds that are 100-1000 times faster than today's Internet, and experiment with revolutionary new applications. [See <http://www.ccic.gov/ngi>]
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Theme 10: Global Marketplace for SMEs

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Theme 11: Maritime Information Systems

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October 20, 1997

Pointers to some U.S. "Information Society" initiatives
Tom Kalil, White House National Economic Council

1. Educational Technology Initiative

- Federal Communications Commission will begin 20 to 90 percent discounts for telecommunications services (including Internet access) for schools and libraries on January 1998. [See <http://www.fcc.gov/learnnet/>]
- The Congress is likely to approve \$500 million in funding for Department of Education programs designed to help states and localities with the "4 pillars" of the President's Educational Technology Initiative -- computers, connectivity, content, and teacher training. [See <http://www.ed.gov/Technology/>]
- Grassroots efforts like "NetDay" [<http://www.netday.org>] and "TechCorps" [<http://www.ustc.org>] and ThinkQuest [<http://io.advanced.org/thinkquest/>] continue to thrive.

2. Next Generation Internet

- The goal of Next Generation Internet is to sponsor R&D in advanced networking technologies, connect more than 100 universities and national labs at speeds that are 100-1000 times faster than today's Internet, and experiment with revolutionary new applications. [See <http://www.ccic.gov/ngi>]
- Information on international connectivity to U.S. high performance networks can be found at the STAR TAP web site. [See <http://www.startap.net>]

3. Electronic Commerce

- President Clinton released the Administration's "Framework for Global Electronic Commerce" on July 1. [See <http://www.whitehouse.gov/WH/New/Commerce/>]

4. Government Online

- As part of the National Performance Review, Vice President Gore released "Access America" on February 1997. This provides an action plan for using information technology to make government "work better and cost less." [See <http://www.gits.fed.gov/>]

5. Privacy of Medical Records

- Secretary of Health and Human Services Donna Shalala released her recommendations on the “Confidentiality of Individually-Identifiable Health Information” on September 1997. [See <http://aspe.os.hhs.gov/admnsimp/index.htm>]

6. Digital Libraries

- A “second round” of digital libraries projects is under consideration. [For information on the first round see <http://www.dlib.org>.]
- Information on cooperation between U.S. and EU digital library efforts is at <http://www.area.pi.cnr.it/ErcimDL/cusdlc.html>.
- The Library of Congress -- under the American Memory project -- is continuing to digitize the documents, films, manuscripts, photographs, and sound recordings that tell the story of American history. [See <http://lcweb2.loc.gov/ammem/>]

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MARIS

The MARIS (Maritime Information Society) the only industrial project among 11, was adopted at the G7 Ministerial Conference in Brussels in February 1995. It is co-chaired by the EU and Canada.

So far MARIS includes 4 distinct subprojects:

- MARSOURCE: aiming at the creation of a fisheries and oceanic information network in order to use advanced IT for the better management of maritime resources;
- MARTRANS: aiming at the setting up of a Ports Logistics Information Network allowing for the most efficient use of ports to the benefit of the transportation industries;
- SAFEMAR: aiming at the development of an electronic Chart Display and Information System as well as systems for ship reporting and traffic management for better safety at sea;
- MARVEL for the intelligent manufacturing of ships and other maritime systems.

Since February 1993 information on MARIS has been disseminated through workshops and conferences in many parts of the world including the EU states, Canada, Asia, the Mediterranean, the Baltic and Africa.

As a result of the information spread to the interested parties, contacts and connections have taken place, i.e. links between fishery databanks between Canada, US, EU, ICES, or between ports in EU, America and Asia.

At a G7 level MARIS co-ordination meetings took place in Brussels, Dublin, Ottawa and the next one will probably take place in the United States.

The first results of the various MARIS subproject are expected to be demonstrated at the Lisbon Expo 98.

From the EU part MARIS will not end at the Lisbon exhibition in 1998. Firstly because within the existing four subprojects various projects which are running, go beyond 1998 and secondly because new subprojects seem to work their way to the surface, namely one on the use of the I.S. for the development of Maritime, leisure and tourism and the other for education on MARIS.

The G7 MARIS coordinators in Ottawa (Feb 1997) have given their initial positive reaction to these two new ideas. However, we have to see the first projects to be presented, before we proceed.

In the EU MARIS has taken a further step towards decentralisation and dissemination of information with the creation of a MARIS regional network between the cities of Bilbao, Bremen, Genoa and Helsinki assisted by contact points in Dublin and Lisbon.

MARIS is now on the Internet. Address : www.maris.int

THE G7 PILOT PROJECT "GLOBAL MARKETPLACE FOR SMEs"¹

Update of the project's achievements

The overall objective of the G7 Pilot Project "A Global Marketplace for SMEs" is to facilitate increased competitiveness and participation in global trade for SMEs. It provides a coherent operational framework and a plan of implementation for global co-ordination and co-operation in electronic commerce, focusing at SMEs. It is co-ordinated by Japan, the United States and the European Commission. The G7 countries and other European countries (Denmark, Ireland, Lithuania, the Netherlands, Norway, Spain, Switzerland) as well as the CEECs², Korea, Mexico, Argentina, Egypt, Australia and OECD are now involved in the project.

1. General Activities.

Workshops, Conferences and Meetings:

Driven by the G7 Project several activities have been organised that include:

- Meetings of the Policy Group for the international co-ordination of the project. These stimulated common understanding and action at national and international level. The project contributed to policy papers in Japan, the United States, Canada and Europe (for example this provided input for the European Electronic Commerce Initiative³ and electronic commerce policy definition in Germany, the Netherlands, Italy and other countries as well as work in the OECD) and led to bilateral meetings between EU (DG III, XIII & XV) and the US and Japan on policy matters relating to electronic commerce. The last meeting⁴ of the Policy Group was held in September 1997 in Ottawa in parallel with an APEC SME exhibition and conference.
- Workshops, Conferences and Exhibitions were organised by this project. The First Annual Conference⁵ was held in Bonn in April 1997.
- An European co-ordination and co-operation structure of G7 working groups has been set up at a launch workshop in April 1996⁶. The participation to these working groups is open to industry and participation of SMEs and representative organisations of SMEs has strongly been encouraged. The second European G7 electronic commerce workshop of 13-14 March 1997⁷ provided an opportunity to review the achievements since the last workshop, validate the action plans prepared by the relevant WGs, with particular reference to self-sustainability in the future and contribute to the launch of projects such as those supporting the Euro.
- Since mid 1995 the services of the European Commission meet regularly to discuss the G7 Pilot Project "Global Marketplace for SMEs". The interservices meetings provide the main co-ordination channel within the EU at the working level and support at the Commission level this initiative. These together with meetings with Member States co-ordinators drive the project in Europe.
- The contribution of the G7 project in strengthening the international dimension of electronic commerce was recognised in their Declaration by the Ministers of the 29 European countries who participated at the Bonn Ministerial Conference in July 6-8, 1997.

¹ Small and Medium Enterprises

² Central and Eastern European Countries

³ <http://www.ispo.cec.be/ecommerce/initiat.html>

⁴

⁵ <http://www.ispo.cec.be/ecommerce/bonn.html>

⁶ <http://www.ispo.cec.be/g7/projects/FINALRE0.html>

Other concrete activities and actions include:

- Collaboration of European Electronic Commerce Associations has been encouraged. As a result a Europe-wide association focusing on electronic commerce, called "Electronic Commerce Europe"⁸ was formally launched at the Bonn Conference in April 1997.
- Memorandum of Understanding on "Information Networks for SMEs Support Organisations"⁹. This MoU developed under the ICT Round Table 10 is promoted internationally through the G7 Project. The MOU is a document which lays down general principles and is modelled around the needs of the SME organisation itself and around the existing local knowledge each organisation has of its own SME environment.
- Memorandum of Understanding on "Open Access to Electronic commerce for European SMEs"¹⁰. This MoU addresses interoperability in electronic commerce and is an integral part of the activities in the G7 Pilot Project "Global Marketplace for SMEs".
- Practical tools to support the G7 Pilot Project include the European G7 Pilot Project's Home Page¹¹, the electronic discussion groups¹² and the G7 Pilot Project database of persons and companies interested in electronic commerce.
- Co-operation with Eastern and Central Europe¹³ and the Mediterranean countries¹⁴: as part of the Action plan for the Information Society in the CEEC¹⁵, adopted in Prague in September 1996. Current European projects, including ESPRIT¹⁶ projects on electronic Commerce and G7 testbeds and projects¹⁷ will be extended to countries from Eastern and Central Europe as well as Mediterranean countries.
- Collaboration with the Institute of Maryland who has launched the Institute for Global Electronic Commerce is aiming at establishing an international network of business schools proposing a MBA in electronic commerce. Beside other meetings, an international meeting was organised in Brussels, on the 16-17 October 1997 to co-ordinate this action.

Future activities of the project include:

- A contribution to the organisation of the OECD conference "Dismantling the Barriers to Global Electronic Commerce" which will take place in Turku (Finland) in November 19-21, 1997.
- A Policy Group meeting in Manchester (UK) in April 1998, which will provide an opportunity for a major event focusing on SMEs requirements and solutions. It is expected that 3 to 5.000 SMEs will attend free workshops and exhibition which will be turned into a travelling SME conference.
- With the objective to increase the participation of developing countries in the G7 initiative, spin-offs of the next G7 Project Annual Conference are proposed in Egypt and Mexico.
- A major G7 Project Annual Conference which was initially planned in Baltimore (USA) at the end of 1998, is likely to be postponed to the beginning of 1999.

⁸ <http://www.ec-europe.org>

⁹ <http://www.ispo.cec.be/infosoc/elecocom/mou.html>

¹⁰ <http://www.eto.org.uk/ttrade/mou/>

¹¹ <http://www.ispo.cec.be/ecommerce/g7init.html>

¹² <http://www.ispo.cec.be/ispo/elecclis.html>

¹³ <http://www.mzt.si/med/Action-Plan.html>

¹⁴ <http://www.cicyt.es/euromed/euromed.htm>

¹⁵ <http://www.ispo.cec.be/peco/forum.html>

¹⁶ <http://www2.cordis.lu/esprit/home.html>

2. Results in the specific three themes of the Global Marketplace for SMEs.

The main lines of action of the Pilot Project are organised around three themes:

- A Global Information Network for SMEs
- The business requirements of SMEs
- The international testbeds and pilot projects.

Theme 1: A Global Information Network for SMEs

The aim is to develop an open and non-discriminatory global environment for

- companies
- business-to-business and
- public bodies.

This will allow SMEs to collect the information they need on the one hand and to disseminate information about their products and technologies on the other hand by means of international information networks (e.g. the WWW). As a result of current activities a dozen countries and some international organisations have now set up their home pages which are linked to the Japanese site¹⁸, co-ordinator for this theme. The European Commission has periodically improved its Website since the 1996 and created its "European Union's Information Network for SMEs"¹⁹ in September 1997. Scarcity of resources has delayed anticipated improvements of search engines and content availability. It is however hoped to start a project to improve this.

Theme 2: SMEs business requirements - legal, institutional and technical

An open and non-discriminatory environment for electronic commerce can be reached only if SMEs' requirements are taken into account.

European Working Groups have been set up in order to animate the discussion about and to stimulate initiatives in electronic commerce. The European Commission has helped in setting up those working groups, each one specialising in particular SMEs requirements. A masterplan²⁰ integrating all actions and organisations helps monitoring progress and achievements.

These Working groups take into account:

- Globalisation/Identification of potential electronic commerce users
- Multi-lingual and multi-cultural issues
- Deployment
- Interoperability
- Financial Issues (including projects supporting the Euro)
- Legal, Regulatory and Security Issues
- Global Information Networks (within Theme 1)

These Working groups met during the workshops which were organised in 1996 and 1997. The autonomy of these Working Groups has been encouraged through the development of pilot projects or position on electronic commerce policy. Their sustainability in the near future is ensured, for some of them (such as the Financial Issues Working Group or the Legal Issues Working Group) through support measures in the ESPRIT programme. This activity is co-ordinated by the European Commission²¹.

¹⁸ <http://www.gin.ipa.go.jp/homee.html>

¹⁹ <http://www.ispo.cec.be/ecommerce/sme/sme.html>

²⁰ <http://www.ispo.cec.be/infosoc/eleccon/mstrplan.html>

Theme 3: International Testbeds for electronic commerce

The testbeds address the business and user requirements and the systemic issues identified in theme 2. They validate the proposed solutions and provide further feedback on business requirements and barriers to the uptake of electronic commerce. They also play a major role as "showcases" and contribute to promote awareness.

The criteria for the G7 testbeds include projects with a multi-national dimension, involving at least three different economies or countries, from private or public sector and which address the core issues of electronic commerce as identified in the "Objectives and Framework for Action", the terms of reference of the G7 project.

Under the co-ordination of the United States and following an agreed procedure to submit the proposed testbeds to the USA, about 55 projects, amongst which around 20 Esprit projects, have declared their interest to qualify as G7 Testbeds, in order to take advantage of the demonstrating effect and to participate in the global Network of SMEs. These projects will help convincing other SMEs of the usefulness of their initiatives and spreading their experience. A list of the projects²² is available. It has been decided to extend on an international scale a number of testbeds and pilot projects to demonstrate the opportunities and advantages of electronic commerce world-wide. The Commission is now working on the assessment for European testbeds from the point of view of SMEs that will be presented at the EITC '97 conference²³.

The G7 project stimulated electronic commerce calls in the EU ESPRIT programme. A first call in 1996 within the "Technologies for Business Process" domain and a major one focusing on electronic commerce in 1997 have led to more than 40 projects (approximately 50 MECU funding). The second call on electronic commerce attracted a large response, including many SMEs and newcomers, amongst whom 30% are micro-SMEs.

Electronic commerce piloting activities were also started in the CEEC Information society programme and with Mediterranean countries through calls for proposals in the INCO/DC and INCO/COPERNICUS programme. These led to contribution to major conferences in Prague, Metsovo (Greece) and La Toja (Spain).

3. The future of the G7 Project.

A number of EU countries as well as other participants in the project have indicated their interest to continue the collaboration started. The project provided indeed an opportunity for a world-wide discussion forum on matters relating to electronic commerce and SMEs. The pervasive deployment of electronic commerce within some of the major partner countries is however lessening the need for such a support. The question of the future of the project should be discussed in line with some of the other G7 projects.

4. The G7 Project leaders.

The project leaders are :

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R. ZOBEL	EU	(rosalie.zobel@dg3.cec.be)
J. JOHNSON	US	(JAJ@csis.org)

²² http://nii.nist.gov/g7/10_global_mp/testbeds/registered.html

Government On-Line

G7



*Government
On-Line*



G7



Government On-line



CCTA

Central Computer and Telecommunications Agency

G7 GOL - Overall Project Themes

- Replacing paper-based operations with on-line operations
- Improving on-line access to public information
- Developing on-line transaction processing for the support and delivery of routine services
- Developing fully interactive on-line services available at various locations, including the home

G 7



Government On-line



CCTA

Central Computer and Telecommunications Agency

Improved service to the citizen

- Single window/one stop shop concept
- Non-stop shop (24 hours, 7 days per week)
- Ability to find information and services
- Improved speed of response
- Access for all regardless of age, disabilities, wealth, language, culture, education....
- Alternative interfaces (kiosks, phone, PC..)
- Tailoring of output to individuals
- Responsive to changes in demands

G 7



Government On-line



CCTA

Central Computer and Telecommunications Agency

Improved internal efficiency in the provision of services

- Cost reduction
- Less paper, more electronic documents
- More accurate information held
- Information sharing and re-use
- Streamline business processes (related to one stop shop concept)
- Re-use common solutions
- Standards

G 7



Government On-line



CCTA

Central Computer and Telecommunications Agency

Open government

- Increased public access to government information and decision making
- Availability of on-line information
- Involvement in the democratic process
 - » Consultations with citizens
 - » Citizens understanding the processes and machinery of government
 - » Influence on decisions and processes

G 7



Government On-line



CCTA

Central Computer and Telecommunications Agency

Economic Success

- National competitiveness
- New ways of working
- New business opportunities
- Establishing an environment for success
- Developing the Infrastructure

G 7



Government On-line



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G7 Government On-Line Meetings

- First meeting March 1995
- Meetings held in London, Ottawa, Malta, Washington, Rome, Geneva, Cairo
- Next meeting 20-22 October 1997 in Melbourne, Australia
- Initially led jointly by Canada and UK
- Presently led solely by UK
- Over 20 participating nations

G7



Government On-line



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Participants

- G7 Countries
 - » Canada, France, Germany
 - » Italy, Japan, USA, UK
- European Commission
- Australia
- Botswana
- Brazil
- Czech Republic
- Egypt
- Finland
- Hungary
- Ireland
- Israel
- Korea
- Malta
- New Zealand
- Portugal
- South Africa
- Sweden
- Switzerland

G 7



Government On-line

- Expressions of interest from:

Austria, Belgium, Denmark, Iran, Jersey, Kuwait,
Norway, Singapore, Slovakia, Spain



CCTA

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Current formal sub-projects

- **Directory services**
- **Information sharing across government**
- **Single window / one stop shop**
- **On-line support for democracy**
- **Permits and licenses**
- **Charging for services and information**
- **Applying card technology**
- **Community information centres**
- **Kiosks**
- **International Government Information Technology (IT) Directory**
- **Year 2000**

G 7



Government On-line



CCTA

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Current hot topics

- On-Line government forms
- Benchmarking government's progress towards the information society
- Government intranets
- Public access (call centres, kiosks, one stop shops)
- National Strategies update
- Project Awareness and promotion - project CD ROM

G 7



Government On-line



CCTA

Central Computer and Telecommunications Agency

G7 GOL - Achievements

- Genuine spirit of cooperation
- Information sharing between nations
- GOL Resource Centre
 - » <http://www.open.gov.uk/govoline/golintro.htm>
 - » **Web based on-line conferencing facility**
- Thought leadership and ideas
- Worldwide recognition



Government Online



CCTA
Central Computer and Telecommunications Agency

Information Society

G7



G7 Global Healthcare Applications Project Summary of activities 1997 by the Chairman

The activities of project n°8; "Global Healthcare Applications Project", (GHAP) have successfully continued in the course of 1997 and the first positive results have emerged. Following 30 months of activity reorientation both in the technical field and the management field have to be envisaged for future activities.

- Two plenary meetings (GHAP n°7 and GHAP n°8) have brought together the coordinators of the G7 countries and the European Commission in Washington on 27th and 28th January 1997 and in Brussels on 30th September and October 1st 1997. Observer countries : Australia, Ireland, the Netherlands, Greece and Korea have participated in technical discussions concerning the projects.
- The results of the 6 sub-projects launched in 1995 and in particular the feasibility studies funded by the European Union have been presented. As a result of these discussions, sub-project 1 (Public Health Network) can be considered as completed. Other sub-projects such as sub-project 2 (Oncology Network) and sub-project 3 (Cardiovascular Network) continue very actively and have already realised specific functions such as the use of telematics networks for second opinion in medical diagnosis and for allowing the citizen to manage his own health situation. Sub-project 6 (Health Cards) has arrived at the stage that implementation depends on national initiatives since qualified technical solutions do now exist and several Member States have already accepted them. Finally, sub-projects 4 (Telemedicine) and 5 (Enabling Mechanisms) have been reoriented and refocused. Canada takes the responsibility for sub-project 4 and the United States collaborate in the framework of sub-project 5 notably for problems concerning intellectual property rights. *Internet Connectivity*

- At the occasion of these meetings each G7 co-ordinator was invited to define national support envisaged for each of the sub-projects. The overall results show that there is on average 90% of support for the sub-projects at the national level.
- Several new sub-projects were proposed and discussed for receiving the G7 Health label. The Canadian sub-project (Evidence and Effectiveness Based Medicine, sub-project 7), the American sub-project (Multilingual Anatomical Digital Database, sub-project 8) and the Japanese sub-project (Medical Image Reference Centre, sub-project 9) have been approved. The discussions concerning these sub-projects have revealed a majority view on the need to respect the rules defined in February 1995 on the global character, the public interest character and the pre-competitive character of the G7 activities.
- These results demonstrate both the success of the sub-projects and the increasing commitment of the G7 Member States. The increasing active participation of Japan and the United States of America in the sub-projects and in the collective management of the Global Healthcare Applications Project is warmly welcomed. After the United States, where a meeting was organised in January 1997, Japan has proposed to host the next meeting (GHAP 9) in Tokyo in March 1998. The United Kingdom proposes to host a meeting in the second part of 1998 under the British presidency and Australia is candidate to host one in 1999.
- After 30 months of management of the GHAP project it has been demonstrated that the G7 platform allows to catalyse global activities in the area of Health Telematics. It would, however, be desirable that the overall co-ordination, until now organised by the European Union could rotate in a "democratic" way. This could be well received by the national co-ordinators, and in particular by the United Kingdom, country responsible for the next G7 presidency.

Conclusions :

At the occasion of the forthcoming meeting in Washington with all global co-ordinators, three questions concerning the Global Healthcare Applications Project should be discussed :

1. Is a rotating chairmanship for the health project (and others if they so wish) acceptable?
2. Can a commercial project receive the G7 label?
3. Can the G7 Global Healthcare project accept the invitation to hold its first meeting in 1999 in Australia?



*Cardiovascular
Global
Databases*

UNIVERSITÀ CATTOLICA DEL SACRO CUORE
Institute of Cardiology

EXECUTIVE SUMMARY G-7 **CARDIO** PROJECT

GLOBAL HC APPLICATIONS SUB-PROJECT III: IMPROVING PREVENTION, DIAGNOSIS AND TREATMENT OF MAJOR CARDIOVASCULAR DISEASES

OCTOBER 1997

The goal of the project is the development of common standard clinical databases for improving the cost/benefit ratio by integrating patient care data (alphanumeric biosignals and images) and health economics analysis in a shared stratified system of care. Professional user groups are strongly supporting and requesting this kind of development.

Integration of Intranet-type databases with health cards is considered in the project. Current Data Card validation test has been started in Italy, involving 600 national contact points. Commitments for implementation in other G7 countries are welcome. (G7 Cards: Dr. H. Doaré).

The feasibility study and a demonstrator were funded by the European Commission. At present, a test application has been implemented in Italy, with a starting network including 10 sites, which will soon become 50 centres. The validation test is making use of an integrated research ISDN/ATM network accessing a SQL patient database with a Web-JAVA application.

Image standardisation, integration and transmission is developed according to the internationally accepted DICOM standard; the huge amount of information in each patient investigation (0,25 MB per Image, 500 MB per investigation) requires the availability of high speed connections (ATM) among centres in the upper layers of the shared stratified system of care, while the other layers can communicate through medium and narrow band connection (TCP/IP).

Interaction with G7 theme 2 :Global Interoperability for Broadband Network has already been granted in April 1997, while co-operation with the Trans-European Network in Telecommunications (TEN) should be established.



Cardiovascular
Global
Databases

UNIVERSITÀ CATTOLICA DEL SACRO CUORE
Institute of Cardiology

**Items to be discussed during the
G7 National Co-ordinators Meeting in Washington, October 20th, 1997**

- **Do you have any specific goals for the 1998 for the pilot projects as a whole?**

Yes, the G7 Cardio project aims at proceeding from the demonstrator phase to the commercial exploitation of the pilot objectives, with the involvement of industrial partners.

- **How much longer do we want to continue the Global Information Society pilot projects as a G - 7 Activity?**

It is important to continue the Global Information Society pilot projects as a G - 7 Activity until the G - 7 G.I.S. pilot projects will reach a diffused implementation in several countries, and they can be declared ready for market and competition.

- **Should the projects be encouraged to continue under the aegis of other fora?**

No, but it is mandatory a stronger commitment of national governments in planning, supporting and funding, for a tangible success of the G - 7 G.I.S. initiatives.

- **Do we want to do anything (e.g. Issue a report, sponsor demos) in conjunction with the G - 7 summit or other International meetings (e.g. ITU) in 1998?**

Absolutely yes:

- A. For the political value and relevance for the media:

- G7 Summits.

- B. For the technical value and sharing of expertises:

- I.T.U.
- WWW Conferences
- Sector specific workshops

- C. For raising awareness to the public:

- Dissemination Conferences

4899A

FOR PHOTOCOPIES PLEASE CALL:

SALLIANNE FORTUNATO

OR

MARSHA LAHAMMER

ON EXTENSION 1551.

THANK YOU.

Government Information Locator Service (GILS). Agencies should make their GILS, as required by 44 U.S.C. 3511 and as defined in OMB Bulletin No. 95-1, easily accessible through the Web. The agency "home page" should point to the agency's GILS and each agency Web site should be represented by a GILS Core locator record. Complex agency Web sites should provide a GILS-compliant (see FIPS PUB 192) search facility, such as through the forthcoming Advanced Search Facility software. Agencies should assure that any agency inventories of information systems and locators of information dissemination products are described; solicit feedback from significant public stakeholders and user communities through a variety of means, including non-electronic; assure that agency GILS Core locator records contain access links to information resources accessible on the Internet; and periodically update the agency GILS Core locator records.

8:30 - 9:00	Coffee
9:00 - 10:00	Information Society updates
■	National coordinators should feel free to make a brief presentation (5-7 minutes each) on major new Information Society initiatives, and hand out any material they wish to share.
10:00 - 12:00	Presentations on Pilot Projects
■	Project coordinators should have 10 minute presentations, with 5 minutes for Qs and As. Presentations should include (1) current status of the pilot project; (2) plans for 1998 and beyond, if any. Written status reports would be helpful.
12:00 - 1:00	Lunch
1:00 - 2:00	Presentations on Pilot Projects (continued)
2:00 - 4:00	Discussion, other business
■	Do we have any specific goals for 1998 for the pilot projects as a whole?
■	How much longer do we want to continue the Global Information Society pilot projects as a G-7 activity?
■	Should the projects be encouraged to continue under the aegis of other fora, or remain G-7 projects?
■	Do we want to do anything (e.g. issue a report, sponsor demos) in conjunction with the G-7 summit or other international meetings (e.g. ITU) in 1998?
■	Should we have a process for discontinuing projects that still have not established clear goals, or launching new projects?

Q Awareness raising

Q 6-8.

Q Competitor effects of industrial participation

The G7 Information Society

**Global Emergency Management
Information Network Initiative**

A network of a thousand nodes begins with a single link.

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presented at

**Pan Pacific Hazards '96
Conference and Trade Show**

July 29 - August 2, 1996
Vancouver, British Columbia

The G7 Information Society Global Emergency Management Information Network Initiative

Abstract

This paper comprises three sections. The G7 Information Society describes the objectives and principles of the Information Society. A Global Emergency Management Information Network Initiative outlines GEMINI's goals and objectives, participants and sub-projects, and summarize project management. The third section discusses how the World-Wide Web might be used to serve the information needs of emergency management.

1. The G7 Information Society

One outcome of the Naples Economic Summit in 1994 was a decision by the G7 Leaders to *"encourage and promote innovation and the spread of new technologies including, in particular, the development of an open, competitive and integrated worldwide information infrastructure."* This led to establishment of the G7 Information Society with a vision that states, in part:

"Progress in information technologies and communication is changing the way we live, how we work and do business, how we educate our children, study and do research, train ourselves, and how we are entertained... A new revolution is carrying mankind forward into the information age. The smooth and effective transition towards the information society is one of the most important tasks that should be undertaken in the last decade of the 20th century."

The objectives of the Information Society can be paraphrased as follows.

- * Support an international consensus on access to networks and interoperability.
- * Establish cooperation to create a critical mass.
- * Create an opportunity for information exchange.
- * Select projects with tangible and understandable social, economic, and cultural benefits.
- * Identify obstacles to implementation of a global information society.
- * Help to create markets for new products and services

Several principles were established to guide the selection of Information Society projects.

- * Have clear added value for developing the Information Society.
- * Give meaning and content to the Information Society for citizens of diverse cultures.
- * Stimulate cooperation amongst industry, academia, administrations, and public authorities.
- * Avoid creating new bureaucracies or institutions.
- * Have expenses covered by existing programs.
- * Have open access as an integral part of system design.
- * Be open to non-G7 countries as well as public, private, and international organizations.

The Information Society was endorsed at the G7 Industry Ministers meeting in Brussels in February, 1995. At that time, 11 themes and associated pilot projects were approved.

1. Global Inventory Project
2. Global Interoperability for Broadband Networks
3. Cross-cultural Education and Training
4. Bibliotheca Universalis
5. Multimedia Access to World Cultural Heritage
6. Environment and Natural Resources Management
7. **Global Emergency Management Information Network Initiative**
8. Global Healthcare Applications
9. Government Online
10. Global Marketplace for Small and Medium-sized Enterprises
11. Maritime Information Systems

National Coordinators were directed to establish the 11 projects in time for the June, 1995 Halifax Summit. This was accomplished and the Information Society received formal approval by the G7 Heads of State.

2. Global Emergency Management Information Network Initiative

What we bring to life on a computer screen half a world away from its point of origin might someday save the lives of people that we will never meet. And that makes it all worthwhile.

Overview

Vision

Natural disasters, technological accidents, biological outbreaks, and humanitarian emergencies can result in catastrophic human suffering, loss of property and infrastructure, environmental degradation, and social disruption. The ability of a community or a nation to respond to disasters and manage risk is critically dependant on rapid access to information and resources. Emerging communication technology and infrastructure are now capable of supporting a network that would electronically link the global emergency management community. Developing such a network would require joint efforts of international organizations, government agencies, private industry, universities, and interested citizens throughout the world. Each would contribute a share of information to create a virtual repository of emergency management knowledge and experience that would be instantly accessible through the global information network. Implementing such a network could save lives, mitigate widespread devastation, and accelerate post-disaster recovery.

Mission

Develop a global emergency management information network that provides electronic access to emergency management knowledge and experience to anyone, anytime, anywhere.

Goals

The mission statement leads to four project goals which can be viewed as a pyramid within a circle (Fig. 1).

- * Foster and facilitate development and implementation of national information networks to exchange all types of emergency management information.
- * Develop and implement a global all-hazard network to exchange information among all emergency management organizations.
- * Identify and promote global standards for exchanging emergency management information.
- * Provide forums to facilitate and enhance the exchange of experiences and knowledge throughout the global emergency management community.

Fostering national networks provides the foundation for GEMINI. Jurisdiction for emergency management lies with national and provincial governments. National systems and networks are the source of the shared information; they provide the content, without which, a network has little utility. Participation of these autonomous agencies provides the resources that will be needed to accomplish GEMINI's goals. Developing a global network will require implementation of a sufficient number of national systems to achieve a critical mass of interconnectivity.

The second goal focuses on establishing a global network of national systems. This level is within the purview of GEMINI. This is something that we can do, in contrast to other goals that involve encouraging others with implementation authority. This objective involves more than simply linking emergency management sites on the World-Wide Web - an trivial task with current software. Value added stems from developing a taxonomy for emergency management information, undertaking a global survey of information needs, creating a generic all-hazard information framework, and developing multi-lingual search capability.

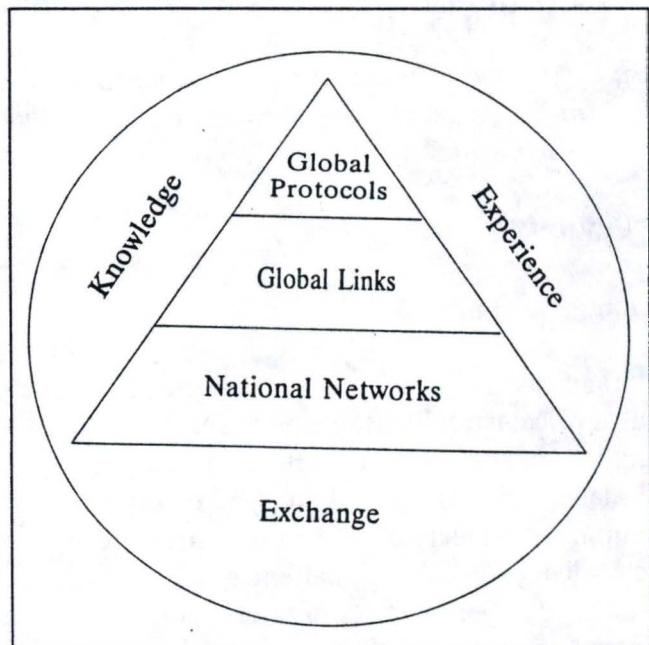


Figure 1. Hierarchy of GEMINI goals.

The third goal involves recommending standards for information authority, quality, adequacy, and reliability. It also involves establishing and recommending principles for information access, security, and minimizing abuse. This goal includes promoting an "emergency lane on the information highway" to provide priority access to emergency officials during a disaster response. It also includes encouraging development of radio and satellite links that can provide Internet capability at any disaster site, no matter how remote or lacking in infrastructure. A sub-goal involves working towards recognition of GEMINI as an emergency management information authority and as a virtual center of excellence for exchanging emergency management information.

The fourth goal involves communication among GEMINI participants and the rest of the world. Information exchanges among participants have led to synergies, coordination, and partnerships, a learning environment, and an innovative atmosphere. External communication is a two-way process - determining the information needs of the emergency management community and demonstrating the benefits of a global emergency information network. By participating in international conferences, such as this one, we plan to interact with diverse professional and scientific audiences. Publishing papers will extend the range of exchanges even more broadly. Finally, by forming partnerships with related international initiatives, such as the UN International Decade for National Disaster Reduction, we will leverage our efforts beyond what we could accomplish in isolation.

Benefits

The success of GEMINI is expected to reduce human suffering, destruction of infrastructure, social disruption, and environmental degradation. This will be accomplished through:

- * Increased information exchanges will stimulate improved emergency management.
- * Enhanced international communications will foster development of international standards.
- * Improved coordination of international disaster response will aid people everywhere.
- * A global network will provide an interoperable platform to facilitate appropriate and sustainable technology transfer.

Principles

Several principles have been adopted that define our perspective on emergency management and how we intend to conduct business. GEMINI will:

- * Recognize that emergencies are local but that support can be global.
- * Incorporate perspectives of both developed and developing nations.
- * Build upon existing emergency management information activities.
- * Add value to existing emergency management information.
- * Evaluate new technologies to support emergency management information exchanges.
- * Foster international policies that support emergency information exchanges.
- * Encourage participation by all emergency management organizations around the world.

- * Coordinate our efforts with other G7 Information Society projects.
- * Adapt emergency management information to the needs of diverse stakeholders.
- * Encourage collaboration among all emergency management stakeholders.
- * Increase public awareness of emergency management issues.
- * Promote the use of emergency management information in development planning.

On one hand, the principles recognize the realities of politics and nations, resource limitations, and consensus building. On the other hand, they also reflect an intention to facilitate rather than manage, include rather than exclude, and improve rather than repackage. Collectively, the principles form a sound foundation for guiding the activities of GEMINI.

Participation

Many organizations around the world are developing emergency management information systems and networks. GEMINI participants are drawn from this dispersed activity. There are several benefits to participating in GEMINI, including:

- * Support a humanitarian mission
- * Provide enabling technology to developing nations
- * Participate in a high-profile initiative
- * Enhance the visibility of organizational programs
- * Have a voice in developing international standards
- * Develop international partnerships
- * Gain access to global emergency management information
- * Create synergy from different experiences and perspectives
- * Provide an opportunity to exchange information with other experts
- * Augment potential funding opportunities

All emergency management organizations are facing increasingly stiff competition for limited funds, resources, and time. Therefore, the burden of participation in GEMINI is kept to an absolute minimum. However, participants are expected to meet a few requirements:

- * Have an e-mail address
- * Fund the cost of their participation
- * Attend project meetings
- * Accomplish what they promise to do
- * Interface between their systems and global standards
- * Share information, knowledge, and experience
- * Coordinate activities with related sub-projects

Equally important, participants are not required to:

- * change their organizational mandates or procedures
- * modify their information systems or networks

- * undertake substantive new research or development

Essentially, the extent of participation is up to the participants. Table 1 lists the lead participants of GEMINI as of July, 1996. Many additional agencies, organizations, companies, universities, and individuals have formed partnerships with the lead participants. The latter are not included in Table 2.

Table 1. List of GEMINI lead participants.

- Asian Disaster Preparedness Center (TH)
- Canadian Forest Service (CA)
- Consortium for International Earth Science Information (US)
- Emergency Preparedness Canada (CA)
- Federal Emergency Management Agency (US, 3)
- Environmental Technology and Telecommunications (US)
- IBM Government Systems (US)
- International Decade for Natural Disaster Reduction (UN)
- National Emergency Telecommunication Network (US)
- Pan American Health Organization (UN, 2)
- Quasar Consultants (NOR)
- Response.Net (US)
- Shebute, Inc. (US)
- Simon Fraser University (CA)
- Spar Aerospace, Inc. (CA)
- Swiss Federal Institute of Technology (CH)
- Symed, Inc. (US)
- University of Plymouth (UK)
- University of Wisconsin (US)

There are currently 19 participants (some have more than one project). Although GEMINI is still in its formative stages, we appear to have been successful in linking different sectors and nations in a common purpose. The sector breakdown is: international (2), government (5), private (8), and universities (4). These participants represent the United Nations and six countries: Canada, Norway, Switzerland, Thailand, the United Kingdom, and the United States. The number of participants should increase substantially during the next year.

Sub-Projects

We have established a number of criteria for evaluating the suitability of proposed GEMINI sub-projects. Proposed sub-projects are evaluated by the Steering Committee.

- * Relevance to emergency management.
- * Compatibility with G7 Information Society principles and objectives.
- * Fully or partially funded.

- * Probability of successful completion.
- * Significance of contribution to emergency management.
- * National or international scale.
- * Endorsement and support of an organization.
- * Partnerships among organizations or countries.
- * Public accessibility and openness of architecture.

There are currently 21 sub-projects, employing a wide range of information technology, knowledge, and experience. They are grouped into four categories: networks, communication, support functions, and specific hazards.

1. Networks - The primary attribute of the network group of sub-projects is an emphasis on linking information providers rather than providing content. In essence, these sub-projects do, at a national or regional level, what GEMINI hopes to do on a global scale.

- 1.1 International disaster information network - HazardNet (IDNDR)
- 1.2 Global emergency management system - GEMS (FEMA)
- 1.3 Canadian emergency management network (EPC)
- 1.4 Modular emergency management system - MEMbrain (Quasar)
- 1.5 Regional disaster preparedness network in Latin American (PAHO)
- 1.6 Environmental network interface (CIESIN)
- 1.7 Urban disaster information network (ADPC)

2. Communication - The communications group emphasizes technology and infrastructure that enables national and global information exchanges and networking. This group provides the connectivity that allows emergency information to flow among many organizations as well as the technology that permits disaster response and management.

- 2.1 Emergency response management center - ERMIC (Spar)
- 2.2 Government emergency telecommunication service - GETS (NCS)
- 2.3 Low-cost telecommunication architectures (Response Net)
- 2.4 Emergency response link - ERLINK (NCS)
- 2.5 Thin route radio for emergency management (ETH)

3. Support Functions - This group of sub-projects is concerned with providing information to support emergency management. They are not directly related to a specific hazard but generally span many or all types of disasters.

- 3.1 sub-project withdrawn
- 3.2 Global system to analyze and disseminate satellite data (IBM)
- 3.3 Global insurance network (ETT)
- 3.4 Disaster relief supply management (PAHO)
- 3.5 Multiple interfaces for emergency management information (Shebute)
- 3.6 Disaster/emergency management training (U Wisc.)

3.7 Global disaster counselling support network (U Plymouth)

4. Specific Hazards - These sub-projects provide technical emergency management content. Information is generally derived from complex scientific process-based models that monitor and forecast the probability of occurrence and evolution of specific hazards.

4.1 Global wildland fire network - CWFIS (CFS)

4.2 Chemical and biological information network - CABIN (FEMA)

4.3 Global emergency interactive medical care delivery (Symed)

Organization

GEMINI incorporates a simple but effective project organizational structure.

- * **Steering Committee** - G7 country contacts. This group implements the action plan, coordinates activities, and interacts with G7 and external interests.
- * **Management Committee** - all sub-project leaders. This is the decision making group; it establishes project goals and objectives, tasks, priorities, and an action plan.
- * **Sub-projects** - organizational representatives. These agencies have the authority and resources to develop and implement national emergency information networks.
 - All-hazard emergency information networks to link State and local agencies
 - Communications infrastructure and technology to enable the flow of information
 - Functional systems to support emergency management
 - Hazard-specific systems to support emergency decision making
- * **Task groups** - selected sub-project leaders. These groups address project objectives.
 - Stakeholder interaction - survey information users and providers
 - Information organization - develop a framework for emergency information
 - Architecture and technology - determine the best design for a global network.
- * **Committees** - selected sub-project leaders. These groups address project functioning.
 - Coordination - among sub-projects, G7-IS projects, and the emergency community
 - Promotion - promote the benefits of GEMINI and increase participation
 - Private sector involvement - develop guidelines for private sector involvement
 - Project technology - evaluate and recommend technology for the project.

Milestones

The following short-term milestones were established for 1996. The present focus is on promoting the benefits of GEMINI, increasing global participation, and initial accomplishments for task groups and committees. Sub-projects have individual work plans and milestones.

Short-term

- * NATO meeting (March 1996) - describe GEMINI to NATO communication officials.
- * TIEMES Conf. (May, 1996) - describe GEMINI to international emergency community.
- * Stakeholder survey (spring 1996) - determine needs of global emergency community.
- * Pan Pacific Conf. (July 1996) - promote Pan Pacific participation, advance task groups.
- * FAO/ECE fire Conf. (Aug 1996) - promote a global fire network within GEMINI.
- * 3rd meeting (Sept 1996) - promote European participation, develop a strategic plan.

Long-term

GEMINI has not yet developed a long-term strategic plan. That is a key objective of the Rome meeting. In the interim, the following list suggests a possible path towards achieving our goals.

- * Prototype network (1996) - implement a prototype global emergency network
- * Expand network (1997) - incorporate additional hazards, functions, and countries
- * Operational network (1998) - implement an operational global emergency network

3. Emergency Information on the World-Wide Web

To consider how the World-Wide-Web might serve the information needs of emergency management, we will examine some key attributes of the World-Wide Web, the nature of emergency information, and how a global emergency information network might be structured.

The World-Wide Web

The Internet has been operational for more than 2 decades. During that time, it evolved considerably from its original purpose - a robust network for exchanging scientific information among main-frame military computers. Development of Gopher and File Transfer Protocol (FTP) greatly facilitated the transfer of large files independently of format. Development of an e-mail protocol (SMTP) resulted in the Internet becoming the largest network in the world. The Internet may eventually replace fax as the universally available communications media. Listservers that support news and discussion groups have become very popular for exchanging information and ideas among people with similar interests.

Development of search capability such as Archie, Finger, and WHOIS facilitated finding information, sites, and people.

Originally, use of the Internet was limited by a need to know a command language, usually in a UNIX environment. More recently, PC software has been developed that invokes various Internet services by simply "clicking a virtual button". This has made the Internet easily usable by anyone with a PC that is connected to a server, thereby greatly increasing its popularity. The need to connect a PC to a server currently limits use of the Internet for emergency management, particularly at remote sites or in developing nations. However, the capability for unlimited communication to much of the world with a local phone call and a nominal service fee is a powerful attraction of the Internet.

Although the World-Wide Web represents only a small portion of the Internet, its growth rate is explosive. It is considerably more powerful and somewhat more demanding of connectivity infrastructure. It is the Web's ability to process graphics and hypertext connections that has transformed the Internet from a technical service to an increasingly popular communications media. NETSCAPE is viewed as the "killer application" - a web browser - that does for the Internet what word processors and spread sheets did for the PC - make it indispensable. Part of its power lies in combining all the Internet tools into one package that is transparent to the user. Further, the ability to incorporate and disseminate text, data, graphics and animation in the same document has transformed local desktop publishing into a global enterprise. Although currently rudimentary, effective broad-band multi-media capability is on the horizon.

The ability to automatically link to any site anywhere and download information with a simple click of a button is another powerful capability of the Web. This permits networking on heretofore unprecedented scales. One can create a vertical network from the UN in Geneva to a disaster relief site in Rwanda. Or one can spread horizontally to link all jurisdictions and sites within a domain, such as a global wildland fire network. Finally, one can create a network comprising all hierarchical levels and all domains.

Emergency Information

Emergency information has certain attributes that determine the design requirements of a global network. Warnings must be available virtually in real time. Monitoring systems must scan large regions efficiently yet drill down to provide detailed information for a specific disaster, necessitating automation to quickly process large amounts of data. Emergency information must be accurate, reliable, and available whenever and wherever it is needed. Some disasters will damage essential communication facilities, necessitating a robust and redundant infrastructure. Because emergency managers have limited opportunities to train, infrequently operated information systems must be easy to use and interpret. Finally, the cost of accessing information must fit within limited information budgets.

Table 2 lists the types of emergency information that might be exchanged via the World-Wide Web. Although most emergency information could be efficiently shared through this platform, GEMINI will address the appropriate role of the web relative to other media for disseminating various types of emergency information.

Table 2. Emergency information that might be exchanged via the World-Wide Web.

<u>Pre Event</u>	<u>Event, Post Event</u>
- Laws and regulations	Warnings and alerts
- Policies and strategic plans	Response calls
- Risk management methods	Reference data
- Organizational structure	Incident management
- Resource directories	Press releases
- Preparedness plans	Situation reports
- Operational procedures	Mitigation technologies
- Education and training	Restoration activities
- Monitoring data	

Table 3. lists the potential audiences and suppliers of the information that would be available through a global network. As the Information Society develops and expands, we expect that virtually no segment of society will remain unaffected. Yet, we must recognize that each audience has particular needs and that messages and information must be tailored accordingly. Similarly, each supplier has particular interests and capabilities which will determine the nature of the available information. All of this is complicated by differing cultures, technologies, languages, functions, and hazards.

Table 3. List of potential audiences and providers of emergency information.

- Politicians	Governments
- Executives	Agencies
- Administrators	International organizations
- Emergency officials	Emergency organizations
- Scientists	Universities
- Educators	Schools
- Reporters	Media
- General public	Interest groups

A Taxonomy for Emergency Information

Developing an information taxonomy that incorporates the full range of attributes, types, users, and providers of emergency information yet provides rapid and easy access to whatever is needed will be challenging. A possible 3-dimensional structure is shown in Figure 2). The first axis is jurisdiction (global, national, provincial, local, etc.); the second is function

(preparedness, response, mitigation, etc.); the third axis is specific hazard (forest fires, earthquakes, oil spills, disease outbreak, etc.).

This structure allows a multi-dimensional search, thereby eliminating the difficulty imposed by any one-dimensional list. Each hazard would be a plane within the structure, such as a global wildland fire network (Fig.3). Similarly, a national all-hazard network would be represented by a vertical slice through the matrix along the plane of the specific country. Finally, a global search and rescue network would be represented by a similar vertical slice along the plane of the search & rescue function.

Continuing the subdivisions, there are also three generic lines at the intersection of pairs of planes. A national earthquake network would be represented by a horizontal line (front to back) at the intersection of the global earthquake plane and the national all-hazard plane. A national response network would be represented by a vertical line at the intersection of the global response plane and the national all-hazard network. Finally, a national nuclear accident monitoring network would be represented by a horizontal line (side to side) at the intersection of the nuclear accident and global monitoring planes. Similar lines could be drawn at the intersection of any pair of non-parallel planes in the matrix.

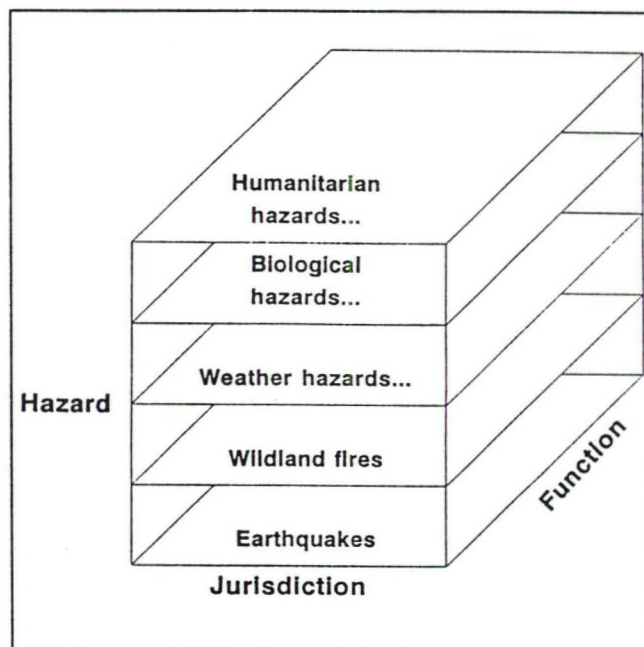


Figure 2. Three-dimensional framework for emergency information.

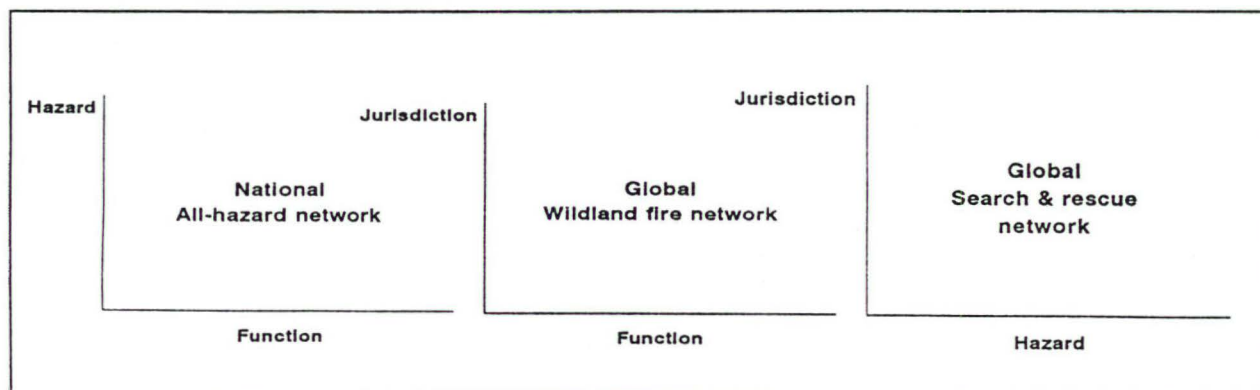


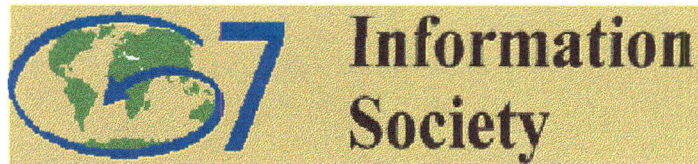
Figure 3. Two-dimensional networks within the three-dimensional framework.

The lines represent the smallest-scale sub-project within GEMINI. Any less would be represented by one or a few cells in the matrix. Although GEMINI will foster development of information systems for cells throughout the matrix, responsibility for developing information systems for individual cells rests with national, hazard-specific, and functional emergency management organizations.

Conclusions

Communication binds the network. It potentially connects tens of thousands of individual information users and providers into a global network by providing conduits for information flow. An analogy could be made with the nervous system of a higher organism in that both enable thousands of individual cells to function as a collective whole. In complex systems, interconnectivity among large numbers of individual elements is a precursor to higher-order structure and purpose. For GEMINI, that purpose is improved emergency management on a global scale through international cooperation and information exchanges.

How can an emergency organization, a nation, or the global emergency management community develop an emergency management information network? Much of the necessary communication infrastructure is available through the Internet. Prototype systems are currently operational. The process begins with a single link.



Theme 6 - Environment and Natural Resources Management (ENRM)

Presentation to G7 National Coordinators

by Larry Enomoto

ENRM Project Coordinator

October 20, 1997 - Washington, DC



Introduction (1)

♦ Objectives

- ⇒ build a global virtual library of data & information on the environment and natural resources management (ENRM)
- ⇒ create a Global Environmental Information Locator Service (GELOS) to navigate that ENRM virtual library

♦ Participants

- ⇒ led by USA
- ⇒ Expert Group includes G7 countries, Australia, Finland, Korea, Switzerland, EC, ESA, EEA, UN FCCC, UNEP, NGOs and some commercial companies

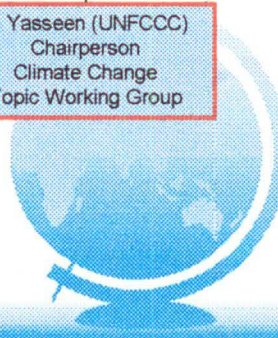
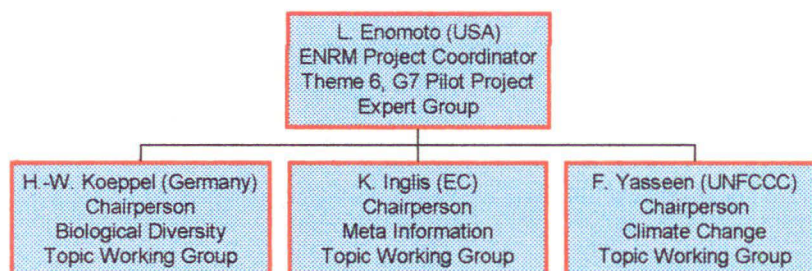


Introduction (2)

- ◆ Demonstrated the potential of a full-fledged Global Information Infrastructure (GII)
- ◆ Increased international and interdisciplinary accessibility of ENRM data and information
- ◆ Focused on building a virtual library of ENRM information held in distributed sites
- ◆ Guided efforts to interconnect ENRM catalogs and directories around the world



Introduction (3)



Implementation (1)

♦ Expert group

- ⇒ initially agreed to a 2-year cycle focusing in target issues of global concern and supporting the conventions on climate change (FCCC) and biological diversity (CBD)
- ⇒ met 6 times to guide the project at Washington, Rome, Berlin, Tokyo, Hull/Ottawa and Canberra
- ⇒ plans to meet at Helsinki in May 98 to complete final report before the G7 summit at Birmingham, UK

♦ Meta Information (MITWG)

- ⇒ developed at EC/CEO ENRM gateway server now identified as prototype server for the GELOS at <http://ceo.gelos.org>



Implementation (2)

♦ MITWG (cont'd)

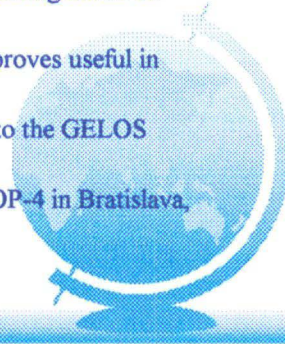
- ⇒ demonstrated tools and techniques for discovering and retrieving networked information
- ⇒ hosted increasing number of resources from providers world wide -- more than 1400 from more than 50 countries
- ⇒ will make this server software available to EEA ,NOAA and others committed to building up the ENRM virtual library
- ⇒ also developed a standard element set for the GELOS based on international standards (Z39.50) which will be used by TWGs on climate change and biodiversity in support of those global conventions.



Implementation (3)

♦ Biological Diversity (BDTWG)

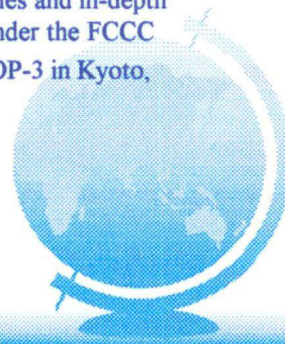
- ⇒ used German and Canadian CHMs for biodiversity as examples for other national focal points in how to apply networked discovery and retrieval technologies for CBD
- ⇒ demonstrated the German CHM and the German Environment Information Network at the G7 ENRM exhibit during ISAD in South Africa, May 1996
- ⇒ developed a list of key biodiversity terms that proves useful in searching for related resources
- ⇒ added national reports required under the CDB to the GELOS server
- ⇒ will support the demonstration of GELOS at COP-4 in Bratislava, May 1998



Implementation (4)

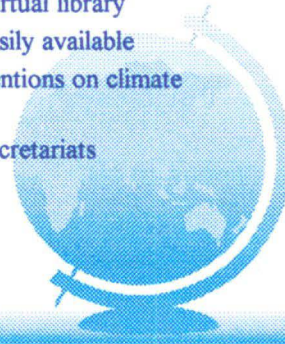
♦ Climate Change (CCTWG)

- ⇒ began its work much later than other TWGs
- ⇒ has attracted participation from developed and developing countries by holding its meetings during sessions of UNFCCC subsidiary bodies in Bonn
- ⇒ posted on the GELOS server executive summaries and in-depth reviews of national communications received under the FCCC
- ⇒ will support the demonstration of GELOS at COP-3 in Kyoto, December 1997



Results and Assessment (1)

- ◆ Greater participation from non-G7 nations and other interested parties
 - ⇒ supporting the TWGs
 - ⇒ attending and hosting expert group meetings
- ◆ Collaboration between climate change/biodiversity scientists and information technologists
 - ⇒ sharing expertise in common effort to build a virtual library
 - ⇒ using electronic tool kits that are widely and easily available
- ◆ Closer involvement of the secretariats for the conventions on climate change and biodiversity
 - ⇒ offering technical support from outside those secretariats



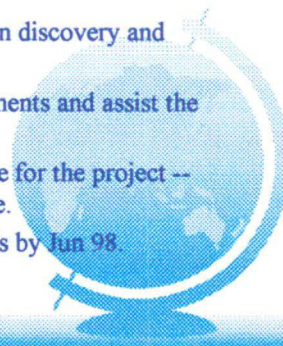
Results and Assessment (2)

- Promulgated a Global Environmental Locator Service based on international standards
 - ⇒ using resource discovery and retrieval techniques
 - ⇒ contributing immensely to the rapid development of networked information search and retrieval



Prospects for the Future

- ◆ CCTWG and BDTWG have “jump started” the process to access climate change and biodiversity resources.
- ◆ Work related to support for climate change and biological diversity is likely continue through those convention secretariats
- ◆ Keeping those TWGs operating beyond the end of the pilot project may not be necessary.
- ◆ New tools and techniques for networked information discovery and retrieval may emerge as international standards.
- ◆ MITWG should continue to monitor these developments and assist the global conventions in applying them.
- ◆ Role of the expert group -- as the steering committee for the project -- will likely diminish if only one TWG remains active.
- ◆ Expert group may not be needed if pilot project ends by Jun 98.



Conclusion

- ◆ Expert group removed from the action plan support for other global conventions (e.g., desertification, deforestation, food security, etc.) for lack of time.
- ◆ GELOS will continue to support the global conventions and other resource providers through commitments by operational agencies (e.g., EEA, NOAA, etc.).
- ◆ GELOS will continue to help others around the world find more easily ENRM data and information resources.
- ◆ Pending final demonstrations to the parties of the global conventions on climate change and biological diversity, the ENRM project has achieved its objectives and the wider goal of the G7 Information Society.

