

# *eContentplus*

*eSDI-Net+*

## **European Network on Geographic Information Enrichment and Reuse**

Network for promotion of cross border dialogue and exchange of best practices on Spatial Data Infrastructures (SDI's) throughout Europe

### *Description of Work*

#### **Proposal abstract**

Technological development and increasing awareness about the importance of geographical data have compelled the fast growing of digital content of this kind. This growth has not been accompanied by dissemination and accessibility measures. Geographical data are typically clustered by application segments, and re-use of data is often not foreseen. This impacts very negatively on the costs and on the real accessibility of Geographic Information (GI).

The enrichment of geographical data by semantically well-defined metadata and the widespread implementation of Spatial Data Infrastructures (SDI) (as foreseen, for example, in the INSPIRE initiative context), allowing extensive GI reuse, will solve today's problems.

Objective of eSDI-Net+ is to bring together existing SDI key players and target users in a Thematic Network to be established as a platform for communication and exchange between different stakeholders involved in the creation and use of SDI's. The network will promote both high-level decisions, low-level technical discussion and information exchange, in order to increase awareness concerning the importance of GI enrichment and of SDI's for GI reuse, to allow an integrated view of the experts and to permit the creation of integrated guidelines, standards, and implementation of best practices. Within the network, communication mechanisms between the European and local levels will be implemented to maximize the benefits of INSPIRE, GMES and GALILEO, regarding digital GI content.

With *eSDI-Net+*, multicultural and multilingual aspects in accessing, exploiting, using, and re-using digital GI content in Europe will be addressed. As a result, the proposed project will contribute to achieving interoperability between national digital collections and services (e.g. through common standards) and facilitating access and use of the material in a multilingual context.

The intelligent and effective use of GI goes through the understanding, the involvement of the user community, which often concretises in e-communities through appropriate e-government initiatives, programmes and projects. Therefore, *eSDI-Net+* intends to be the catalyser of different initiatives, actions and services based on GI.

## Project Summary

### Objectives

Objectives of eSDI-Net+ are:

- Bring together SDI key players and target users in Thematic Network established as platform for communication and exchange between stakeholders involved in creation and use of SDI's
- Promotion of high-level decisions and bottom-up technical discussion, and information exchange
- Help GI stakeholders realise full potential of digital GI for content providers and users and increase awareness concerning importance of GI enrichment and SDI's for GI reuse
- Allow integrated view of experts and foster creation of integrated guidelines, standards, and implementation of best practices
- Establish communication mechanisms between European and local levels to maximize benefits of INSPIRE, GMES and GALILEO
- Develop solutions for multicultural and multilingual access, exploitation, use, and reuse of digital GI content in Europe
- Stimulate aggregation of existing national data sets of core GI into cross-border data sets

### Description of the work

eSDI-Net+ will improve the GI reuse, by promoting across Europe relevant best practices related to SDI implementation and use, through the following three main phases:

#### ***Phase I: Network establishment, State-of-the-Art and Activities Planning:***

- Establishment of network management structure
- Identification and analysis of common problems, standard solutions, existing quality in GI good practices related to the enrichment and reusability of GI available in Europe (national and regional level).

#### ***Phase II: Implementation of planned activities***

- Identification and assessment of best practices, success showcase
- Dissemination activities, transfer of knowledge, consensus, awareness

#### ***Phase III: Assessment and Sustainability***

- Evaluation of the achieved results (quantity and quality) and their usage, e.g. amount and impact of organised workshops, and
- Evaluation of the network itself as institution, e.g. on the number of new members, publicity etc.

### Milestones and expected results (PM = Project Month)

#### **Phase I:**

- M1.1 Establishment of the project management infrastructure (PM4)
- M1.2 Mid-term progress review (PM18)
- M1.3 Project End (PM36)
- M2.1 Accomplishment of work package 2 (PM18)

#### **Phase II:**

- M3.1 Selection of good practice solutions (PM16)
- M3.2 Finalized Best Practice Award and Showcase workshops (PM27)
- M4.1 Initial version of the project web site and dissemination materials (PM4)
- M4.2 Initial version of Dissemination & awareness plan (PM8)

M4.3 Final version of the project web site and dissemination materials (PM28)

M4.4 Final version of Dissemination & awareness plan (PM24)

**Phase III:**

M5.1 Assessment of intermediate project results (PM18)

M5.2 Final assessment of project results and the network (PM36)

**Indicators (maximum 70 words)**

The number of:

- Participants to the events organised by the TN
- Publications and contributions to SDI related events
- Countries represented through network partners to measure the coverage of the EU
- Attracted new members
- Workshops and conferences organised
- Best practices identified
- Local, regional, national and thematic SDIs and SDICs involved
- Related projects and initiatives identified for better outcome integration & dissemination

## TN 1 Thematic Networks: Common Requirements

### Member State Coverage and Involvement of Stakeholders

#### a) Member State Coverage

The *eSDI-Net+* consortium includes organisations from 15 European countries (among those are 12 EU Member States, 3 New Member States and 2 European Countries joining the European Union in January 2007): Belgium, Bulgaria, Czech Republic, Finland, Germany, Greece, Hungary, Italy, Netherlands, Poland, Portugal, Romania, Spain, Sweden, Switzerland.

The *eSDI-net+* consortium is built according to several criteria. The first criterion is the country of origin of the consortium partners in order to ensure the optimal Member State coverage. Thus, Europe was partitioned into five major regions to achieve coverage of the entire European area and to have partners representing various best practices and general conditions in the EU and its associated countries (*Italic: Non-Member-States in special relationships to the EU*).

Following network members are assigned to represent their regions:

- Western and Central Europe (Austria, Belgium, Germany, France, Luxemburg, Netherlands, *Switzerland*, England, Ireland, Scotland): Representatives EUROGI, AGILE, AUTD, FOKUS, FHG-IGD, IGS, SADL
- South-western Europe (Italy, Malta, Portugal, Spain): Representatives AMFM, GISIG, PIEMONTE, TELMA, UJI, CNR, URS, USIG
- South-eastern Europe (Greece, Hungary, Cyprus, Bulgaria, Croatia, Romania, *Turkey*): Representatives AGISEE, SEERC, ICIA
- Northern Europe (Denmark, Finland, *Norway, Iceland, Sweden*): Representatives KRF and LIU-IDA
- Baltic Region (Estonia, Latvia, Lithuania, Poland, Slovenia, Czech Republic): Representatives INGR, AGH

Several consortium members are Pan European associations and networks and cover with their activities several regions. Such organisations are EUROGI, IGS, AGILE, AGISEE, GISIG, INGR. They will not only cover the regions of their headquarters locations, but also ensure the interaction between the regions covered by the other partners.

The *eSDI-Net+* network will be open and proactive in attracting new partners. This task is part of the WP1 Network Establishment, Administration and Enlargement and will be a continuous activity during the whole project time. The network co-ordinator assures a continuous enlargement of the consortium according to network's mission and goals during the project period. The Co-ordinator receives direct support by the Dissemination and Networking Expert (see Chapter 6 Project Management), who is especially assigned to this task. Several consortium members, such as EUROGI, IGS, AGILE, AGISEE, GISIG, are already successfully acting networks and will exchange their view and experiences and develop an integrated strategy for *eSDI-Net+*.

Within the first four project months a strategy to attract new members will be elaborated by the Co-ordinator and the Executive Board and presented to the consortium for final discussion. The developed strategy will be a part of the *eSDI-Net+* Sustainability Plan and will include a definition of the vision and goals of the network, planning of future network development as well as membership conditions and IPR issues. Within the dissemination and awareness raising work package, network promotion material will be developed. Envisaged conferences and workshops will be used to make contacts to the relevant GI stakeholders.

The goal of the activities to attract new members is the coverage of all Member States and associated countries represented by the SDI key players in these countries. To fulfil this mission and because of the low overhead to network management, the network can be fast growing and can become very comprehensive.

## **b) Involvement of Stakeholders**

The second criterion for *eSDI-net+* consortium building is the involvement of major relevant groups of digital geographic data stakeholders from the countries covered and their core competences. This criterion was selected to reach a critical mass in each group of stakeholders and required areas of expertise. From each of the five geographical areas, eSDI-Net+ includes members covering following four stakeholder groups:

**1. Providers of digital geographical data** (Expertise and role in the project: local, national and regional SDI best practices, dissemination and awareness, implementation of standard solutions), such as

- Local, national and regional public authorities (KRF, PIEMONTE; indirectly involved 20 national organisations from all Europe that are EUROGI members, two thematic SDIC' and approx. 100 members from more than 20 European Countries that are GISIG members, more than 60 AGISEE members, more than 400 institutional and individual USIG members)
- Private organisations and institutions that create, collect or own digital geographical data (AUTD, INGR; indirectly involved 20 EUROGI members, ca. 100 GISIG members, more than 60 AGISEE members)

**2. Users of digital geographical data** (Expertise and role in the project: State-of-the-Art, reference applications, influence on technology development and SDI Implementation, evaluation of best practices solutions), such as

- Research institutes (CNR, FHG-IGD, FOKUS, ICIA, SEERC, SADL, LIU-IDA; indirectly involved about 90 labs and universities that are AGILE members)
- Universities (AGH, TELMA, UJI, URS; indirectly involved partner universities from the consortium members)
- Software manufacturers (AUTD, INGR; indirectly involved industrial partners from consortium members, members of network involved)

**3. National and international GI umbrella Associations** (Expertise and role in the project: dissemination and awareness, transfer of expertise): AGILE, AGISEE, AMFM, EUROGI, GISIG, HUNAGI, USIG, which cover the majority of the European countries with their members; furthermore users, interested organisations and entities indirectly involved in the project, as, for example, research laboratories through AGILE (about 90 labs and universities), through EUROGI (20 national organisations), through GISIG (two thematic SDIC'

and approx. 100 members from more than 20 European Countries), through HUNAGI (113 institutions and organisations) and through USIG (more than 400 institutional and individual members).

**4. Consultancy and Network Management** (Expertise and role in the network: Analysis of cost models, Dissemination and awareness raising, network administration), such as IGS, EUROGI, GISIG, AGILE, AGISEE, USIG.

The European commission through its services whose activities depend on good quality geographical information will also benefit from the network (for more details see chapters 8, 9, and 10). In order to establish communication mechanisms between European and local levels and to maximize benefits of INSPIRE, GMES and GALILEO, the consortium will collaborate and exchange information with Joint Research Centre (JRC) as the technical responsible for INSPIRE, EUROSTAT as the legal and organisational responsible for INSPIRE and with European Space Agency which initiated GALILEO. These organisations will be informed about project results and will be invited to relevant project meetings, conferences and workshops. This will support the project to build an integrated view of experts and foster creation of integrated guidelines, standards, and to implement best practices.

With its activities the network will also address Pan European associations with interest in GI, which have more general purpose, even if they will not be part of the network. The list includes:

- Surveying, Mapping and Cadastre (CLGE, Eurogeographics, EULIS, WPLA)
- Geoscience and Geology (EuroGeoSurveys, EAGE, EEGS-ES)
- Space (EUROSPACE, EUROCONTROL, ESOA, ESA)
- Meteorology (EUMETNET, EMS, EUMETSAT)
- Transport (ERTICO, UNIFE)
- Environment (ECNC, EFI, EEA)
- Global GI organisations (GSDI, FIG, ICA, IHO, ISO, ISPRS, OGS, UNGIWG)

Strategic involvement of all stakeholders will accompany all project activities. It will allow building strong synergistic partnerships, which will continue after the project end. Thus, the Co-ordinator and the Boards will monitor the involvement of stakeholders as an important task within the WP1 Establishment, Administration and Enlargement and WP Dissemination and Awareness, since it is a guarantee for the network success and sustainability.

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## ***1 Rationale***

### **1.1 Description of the issue**

Technological development and increasing awareness about the use of geographical data have compelled the fast growing of digital content. With the growth of Internet, in particular Web based technologies, access has become a demand driven operation. Consumers expect simple discover and access to cheap or free data in simple standard formats that can be used in desktop applications. So awareness of the value of geographic information and applications is growing quickly, in the public and private sectors. Growing awareness of the potential of GIS (GI System) among public sector institutions, non-governmental organizations as well as the private sector means that the use of geographic information systems is increasing every year.

This growth has not been accompanied by dissemination and accessibility measures. Leveraging the accessibility and reusability of geographic information has led to numerous activities throughout Europe to create Spatial Data Infrastructures (SDI)<sup>1</sup>. These SDI-projects take place from the very regional level to the pan-European level (see INSPIRE). Some projects are only intended to solve data access problems within specific application areas and by far not all of these SDI-projects have got a cross border dimension. These activities and initiatives implemented to foster and promote the establishment of SDI's face a lot of obstacles – organisational, technological and legal as well as cultural and linguistic barriers:

#### **Technological Barriers (Reusability Lack and Clustered Data)**

Geographical data are clustered by application segments, and reuse of data is often not foreseen: Because data are created and deployed for specific purposes, they are not provided with sufficient meta-information that allows for different use of data, specifically meta-information about validity and applicability. Available geographic data are generally of poor quality. Geographic information technology and methodologies on how to enrich data, so to make them reusable, are not well known. Geographic datasets are not interoperable, because there is a lack of standard solutions. The exploitation of the digital information is prevented through the lack of its reusability. The supply of reusable, enriched data and technologies for the market and for the citizen, as a part of value added products and services, is still very undeveloped.

Data harmonisation for the existing geo-information in the EU will be a very complex process, since there are scores of data models currently in use. These are built around a multitude of core requirements, often with a single application that drove the design. Most GIS developments started with the implementation of an information component for specific projects. Systems are not designed to ensure smooth data sharing, but primarily to respond to specific needs. Although this has helped to design systems with a demand driven approach, this evolution did not create a favourable context for straightforward data exchange.

Thus, the stimulation of data harmonisation is the central issue able to turn geographic information into a growing asset for the European Union. INSPIRE is concerned with technical harmonisation of geospatial data content across Europe. Such harmonisation involves organising thematic data (such as administrative units, transport networks, buildings and land parcels, land cover etc.) in a coherent manner. Whilst pan-European uniformity can be achieved in some themes (e.g. higher level administrative units), at the same time it would be unrealistic to abandon existing national systems. Coherence therefore requires data set, data and system interoperability at many levels. In its thematic workshops, the *eSDI-Net+* network will analyse the reusability and interoperability problems and solutions and will make the knowledge about developed solutions available to the GI community. Network activities will lead to the generation of Europe-wide standards, and thus to data exchange, interoperability and harmonisation.

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<sup>1</sup> The term "spatial data infrastructure" is often used to denote the relevant base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. A spatial data infrastructure provides a basis for spatial data discovery, evaluation, download and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and the general public.

The word infrastructure is used to promote the concept of a reliable, supporting environment, analogous to a road or telecommunications network. Spatial data infrastructures facilitate access to geographically-related information using a minimum set of standard practices, protocols, and specifications. Spatial data infrastructures are commonly delivered electronically via the internet. (Source: <http://www.anzlic.org.au/about.html>)

### **Organisational Barriers (Fragmentation and Lack of Harmonisation and Interoperability)**

Co-operation and co-ordination between public sector organizations is limited. Problems encountered in enriching data are felt as “local” by local and regional authorities. Standard solutions and related best practices are available, but confined at regional or national level and internationally ignored. Due to the lack of co-ordination, the different data structures are not compatible to facilitate data exchange. Only very few institutions have already started to define clear data exchange policies to disseminate their information. Also the benefits on quality, reusable information are not explained in a concrete manner. The disparate practices within and between Member States in the gathering, storage, inventorying and description of geographic data impose significant limitations on their methodologies and transfer techniques. Therefore the main barrier linked to the improvement of quality in the European Geographic Information sector is firstly linked to a huge lack of knowledge and experience concerning the available data quality and the practices on how to enrich the geographic data.

To solve this lack of knowledge, development of effective coordination mechanisms is needed to integrate the regional and local experiences at European level, and to promote greater harmonisation and interoperability among countries. *eSDI-Net+* will initiate a dialogue between the SDI stakeholders at the local, regional and national levels and foster exchange of best practices. Geographic information should be collected, processed and maintained according to international standards to maintain data integrity across databases, to enable the addition of value, further enhancement and easy access and use.

### **Legal Barriers**

In Europe, there is a need for a clear data policy on data ownership and licensing, which includes sections on intellectual property rights (IPR), distribution mechanism and pricing of data. To make geographic information as seamless as possible, with co-ordination across jurisdictions and boundaries when possible, the IPR and pricing issues are of high importance. *eSDI-Net+* will analyse existing IPR and pricing approaches and practices at local, regional and national levels and exchange the collected information among consortium partners and associated organisations.

### **Cultural and Linguistic Barriers**

The obvious are administrative borders of a various levels or borders brought up by the multitude of languages in Europe. But there are also other borders to address, like cultural borders, which hinder to find a one-fits-all solution. The *eSDI-Net+* network takes the cultural and linguistic issues into considerations and suggests an solution approach described in chapter 2.2. Multilingual and multicultural approaches.

The analysis of the existing barriers for Europe-wide use of digital GI content leads to the conclusion, that an effective Community debate must then bring into force the available local and regional best practices’ experiences in GI interoperable solutions and transfer them into coordinated dissemination actions to be transferred and spread across Europe. The increasing quality standards of geographic information must be largely demonstrated by available best practices on how to enrich GI with semantically well-defined metadata in order to allow their widespread reuse.

## ***2 Objectives and Proposed Solution***

### **2.1 Description of the objectives and the proposed solution**

Objectives of *eSDI-Net+* are:

- Bring together SDI key players and target users in the Thematic Network established as platform for communication and exchange between stakeholders involved in creation and use of SDI’s
- Promotion of high-level decisions and bottom-up technical discussion, and information exchange
- Help GI stakeholders realise full potential of digital GI for content providers and users and increase awareness concerning importance of GI enrichment and SDI’s for GI reuse
- Allow integrated view of experts and foster creation of integrated guidelines, standards, and implementation of best practices

- Establish communication mechanisms between European and local levels to maximize benefits of INSPIRE, GMES and GALILEO and e-government programmes in order to establish more sustainable e-communities.
- Develop solutions for multicultural and multilingual access, exploitation, use, and reuse of digital GI content in Europe
- Stimulate aggregation of existing national data sets of core GI into cross-border data sets

Bringing together the local SDI key players and target users can only solve today's GI reusability problems. Consensus should be achieved at various levels and in different aspects. Thus, joining the efforts from the national and pan European GI networks and local SDI associations would be the most efficient solution. Therefore, *eSDI-Net+* will be build. Instead of reinventing the wheel in each and every SDI project, discussions and knowledge or best practice exchange can help to leverage synergies and to fasten the process of SDI implementation. This would immediately result in easier and quicker access to geographic information.

The maximisation of GI use may be achieved by an appropriate use of SDI , GI and the appropriate technical solutions which are already on the floor. The intelligent and effective use of GI go through the understanding , the involvement of the user community which often concretises in e-communities through appropriate e-government initiatives , programmes and projects. Therefore, *eSDI-Net+* intends to be the catalyser of different initiatives , actions and services based on GI.

By promoting both high-level decisions and bottom-up technical discussion and information exchange, the network will allow for an integrated view of the experts, knowledge and potentials, and permit the creation of integrated guidelines, standards, and implementation of best practices. As an overall result, the proposed project will contribute to “achieving interoperability between national digital collections and services (e.g. through common standards) and facilitating access and use of the material in a multilingual context” (which are core objectives of the programme).

## **2.2 Multilingual and multicultural aspects**

The multitude of languages and cultures in Europe brings up administrative barriers in use and reuse of digital GI content. We recognise, that it is highly unlikely to find a one-fits-all solution. The cultural and linguistic barriers for reuse and exchange of digital geographic data are caused by the fact that at the data set level metadata must be defined to allow discovery and searching using terms, which can be understood in different languages and by different user communities. At the data level coherence ensures that different data sets can be used together and this requires coherence of geodetic and coordinate systems, data structures (vector topology, grids, raster collections) and – most challenging – informational classes/ontology. Proof of this coherence (and identification of problems requiring further work) can best be achieved by exercising geo-spatial data themes in specific trans-boundary applications.

*eSDI-Net+* network will collect information on existing initiatives and projects, which envisage or have already implemented such proofs of coherence, for example the project HUMBOLDT. The wide and nationally differentiated composition of the *eSDI-Net+* network and representatives from 12 Member States will contribute on finding possible solutions to overcome the lingual and cultural obstacles for reuse of GI information in Europe. The national approaches will give impulses on the development of guidelines applicable Europe-wide in order to make the content more accessible, usable and exploitable, taking into account specific issues related to multicultural and multilingual aspects.

### 3 *Expected results*

#### 3.1 **Expected results**

The envisaged milestones, detailed within the work package descriptions will help to measure the results achieved by the network activities:

##### **Phase I:**

M1.1 Establishment of the project management infrastructure (PM4)

M1.2 Mid-term progress review (PM18)

M1.3 Project End (PM36)

M2.1 Accomplishment of work package 2 (PM18)

##### **Phase II:**

M3.1 Selection of good practice solutions (PM16)

M3.2 Finalized Best Practice Award and Showcase workshops (PM27)

M4.1 Initial version of the project web site and dissemination materials (PM4)

M4.2 Initial version of Dissemination & awareness plan (PM8)

M4.3 Final version of the project web site and dissemination materials (PM28)

M4.4 Final version of Dissemination & awareness plan (PM24)

##### **Phase III:**

M5.1 Assessment of intermediate project results (PM18)

M5.2 Final assessment of project results and the network (PM35)

As a result, the proposed project will contribute to achieving interoperability between national digital collections and services (e.g. through common standards) and facilitating access and use of the material in a multilingual context. Content providers will be able to increase the use and reuse of their material; content users will be able to find and use digital geographical data, irrespective of location and language.

#### 3.2 **Performance and success indicators**

Following indicators will be applied to measure the success of the project and to estimate the efficiency of dissemination and awareness measures as main activities of the eSDI-Net+ Network:

Indicators – Thematic Networks	Expected Progress		
	Year 1	Year 2	Year 3
Number of participants to the events organised by the TN	50	100	350
Number of publications and contributions (i.e. articles, presentations) to SDI related events	10	15	20
Number of countries represented through network partners to measure the coverage of the EU	16	21	25
Number of attracted new members in the eSDI-Net+	2	5	5
Number of workshops and conferences organised	2	3	2
Number of best practices identified	5	10	---
Number of local, regional, national and thematic SDIs and SDICs involved	5	10	15
Number of related projects and initiatives identified to allow linkage to them for better outcome integration & dissemination	5	8	10

### 3.3 Sustainability of the project

The sustainability of the *eSDI-Net+* network leverage on the assumption that the project will achieve a long term impact for its partners and users and stakeholders which will join to the project.

As far as the project is concerned, there are two main indicators concerning the sustainability of the *eSDI-Net+* network:

- The intention of maintaining after the project the networks relations, established through the funded phase, is strongly demonstrated by the presence of a specific sustainability work package, designed in order to plan concrete trans-cooperation actions among partners (such as trans-regional aggregation of existing datasets, commercialisation of existing state of the art technical solutions).
- Having the networks results mainly a knowledge and awareness impact, this will guarantee that much of the dissemination output expected will be further developed and put into practice. The project knowledge transferred represent in fact a high economic potential, that is mainly represented by standard technical solutions transferable to other regional context, exploitable by GI commercial stakeholders or further developed by the network through other funded projects.

Additionally, in this specific proposal submission stage, the potential sustainability can be measured on the basis of the level of financial support allocated to the partners (established according to the programme rules) that covers only travel and subsistence costs, revealing an effective commitment in terms of partners' investment and revealing high expectations concerning project results.

Therefore it can be concluded that many of the relations established in the network and that the dissemination results will continue beyond the conclusion of the projects.

A special work package is foreseen to plan the sustainability measures of the project. The development of a sustainability strategy is one of the core tasks of the Network Co-ordination Committee.

## 4 Project work plan

### 4.1 Introduction and general description

*eSDI-Net+* envisages the three project phases that include five work packages:

#### ***Phase I: Network establishment, State-of-the-Art and Activities Planning***

##### **WP1: Network Establishment, Administration and Enlargement**

WP1 aims at ensuring effective co-ordination and collaboration among partners within the network, to ensure the fulfilment of the overall goals of the project, within the time and budget constraints. Furthermore it ensures a common interface towards the external, by representing the entire network towards the European Commission, the supporters and all the GI stakeholders addressed by the dissemination. The Network Co-ordinator and the Co-ordination Committee will develop strategies to attract new members and plan long-term sustainability measures.

##### **WP2: Identification and Analysis of Best Practices**

Within the WP2 information about existing SDI initiatives at regional, national and European level will be gathered. The updated INSPIRE State of Play and other studies will be taken as the basis for the WP2 analysis in order to be in line with the INSPIRE Draft Directive. The result will be detailed information on SDI best practices existing throughout Europe and on their impact and results. This work package aims at identifying, through a benchmarking exercise, those critical issues that determine a successful action of GI quality improvement for GI stakeholders. The benchmarking exercise will take in consideration:

- Technical aspects related to core and application data, metadata and SDI at regional and local level
- Socio-economic issues related to core and application data, metadata and SDI at regional and local level
- Semantic enrichment of metadata and SDI web-services at regional and local level

to define, through different technical workshops, the best practices and showcases with the aim at the semantic enrichment of metadata and SDI web-services at regional and local level. A final workshop will

aim at establishment of common parameters, which will be used to assess SDI initiatives and to coordinate workshops at national levels and workshops focussed on application domain;

Pre-processed material will be prepared for the workshops and distributed in advance in order to achieve final results during and immediately after the workshops themselves. The findings will be widely used as references and concept proofs. Specific live data sources and technical solutions attuned with those findings will be produced.

## ***Phase II: Implementation of planned activities***

### **WP3: Best Practice Showcase**

The state of the art technical solutions identified in Phase 1 (WP2) will be analysed by the consortium members and GI experts with the goal to select the best applicable solutions. This analysis will be a pre-selection of solutions for the SDI Best Practice Award. At this Award, institutions of the identified and pre-selected good practice cases will introduce their initiatives and approaches, which can be adopted by other European countries. The Award jury consisting of GI and SDI experts will assess the demonstrated solutions according to the common parameters defined in the WP2. The Award winners and their best practices will be widely announced among the GI community and presented to the broad public. SDI showcases will be prepared based on the best practices assessment. The success showcases will be demonstrated to the network participants during two specific showcase workshops (in two different European regions). Internet based permanent showcases will be implemented through the extension of the existing EUROGI Web castle. Representatives of INSPIRE drafting groups will be invited and will receive detailed documentation and access to the pool of best practices. In this WP associations, networks and clusters of public authorities at EU level (cities, provinces and regions) will be directly involved in order to achieve their active participation as activator of SDI and as potential users of best practice solutions.

A consistent amount of projects addressing the social, administrative and technical issues of SDI has been launched and/or already completed in the dominion of e-government, e-communities, e-governance , to these projects eSDI-Net+ is aiming in order to capitalize their results and to offer an already organised networked platform.

### **WP4: Awareness and Dissemination**

The WP4 is specifically designed in order to achieve the Dissemination and Awareness Objective. WP4 aims at targeting a high level of supporters and other GI actors around the theme of reuse of geographic information and SDI's.

The dissemination content will be based on the WP3 results and will spread typical critical European quality factors related to the enrichment of GI with semantically well defined metadata and SDI implementation, with a particular focus on common problems, standard solutions and innovative best practices. The experience of the partner organisation in using appropriate dissemination channels, mass media will guarantee the distribution of information material so as to reach the defined target group. A rough calculation shows that the eSDI-Net+ partners may already reach through institutional direct information links more than 3500 final user organisations and public authorities. At the end, a final eSDI-Net+ international conference will be performed, in order to disseminate all the final results coming from the different WPs works. WP4 will support and coordinate all organisational activities to put in place the seven events forecasted in the different WPs: the WP2 workshops, the two showcase workshops, the sustainability workshop, the final conference.

## ***Phase III: Assessment and Sustainability***

### **WP5: Project Assessment and Sustainability**

The objective of the work package 5 is to measure and evaluate the overall success of the project. The measuring of this success during the project span will be two-fold:

- Evaluation of the achieved results (quantity and quality) and their usage, e.g. amount and impact of organised workshops, and

- Evaluation of the network itself as institution, e.g. on the number of new members, publicity etc.

These findings will lead to the planning of future steps and a sustainability strategy for the network. The planned sustainability measures should enable the network to be a self-sustained living association after the end of the funding period.

The results of this work package will present the intermediate and final project results to the network partners, stakeholders, the European Commission, the INSPIRE teams and responsables, the HUMBOLDT team. This will provide a basis for the discussions on further steps and actions of the network.

It has to be considered that at the moment there is not any association and or network representing a real cluster of SDIs at EU level. The network to be established in the project should be seen as the embryo of such type of cluster which is obviously supporting and reinforcing already put in place activities as Inspire activities and the results of a number of EC funded projects such as Humboldt, Orchestra , Motiive, and some more.

## **4.2 Work package and labour effort overview**

Following table gives an overview on the labour effort of the network partners within each work package.

## Work Package and Labour Effort Overview

WP No	WP Title	Lead AP No	Start month	End month	Total Person months	Person months effort per workpackage per applicant																						
						IGS	AGH-UST	AM-FM	AGI-SEE	AGI-LE	USIG	AUTD	CNR	EURO-GI	FOK-US	IGD	GIS-IG	HUN-AGI	ICIA	INGR	KRF	LIU-IDA	PIEM	SADL	SEE-RC	UJI	URS	TEL-MA
1	Network Establishment, Administration and Enlargement	1	1	36	31	23							2		2	2						2						
2	Identification and Analysis of Best Practices	9	3	18	28	4	2	2	1	2	1		1	4	1	1	2	1	1		2		2			1		
3	Best Practices Showcase	18	15	27	25	4			1		1		2	1	1	1	1	1	1	1		4		2	1	1	1	
4	Awareness and Dissemination	12	1	36	53	17	1	2	2	1	1	2	1	2		2	4	1	2	2	1	2	1	2	2	2	1	2
5	Project Assessment and Sustainability	11	28	36	29	6	1		1	1	2		1	2	4	1	1			1		2	1	2		1	1	1
				<b>Total</b>	<b>166</b>	<b>54</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>10</b>	<b>4</b>	<b>10</b>	<b>10</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>10</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>

**Please note:** Only the Co-ordinator requires budget for person month worked on the project. All other network partners will contribute on the work packages from their own resources. Therefore, the person months of the partners are seen as their own contribution to the project.

Higher amount of person months is allocated to the Work package Leaders due to the higher responsibility and related amount of work.

### 4.3 Work package description

#### Work package Description

<b>Work package number:</b>	<b>1</b>	<b>Start date:</b>	<b>1</b>	<b>End date:</b>	<b>36</b>
<b>Work package title:</b>	<b>Network Establishment, Administration and Enlargement</b>				

#### Objectives

The WP1 aims at the establishment and coordination of the network in administrative, technological and scientific terms. Furthermore, the relations and the communication with the participants, the boards, European Commission and project environment are maintained. The objectives are to ensure effective operation of the project, timely delivery and quality of the results, compliance of time- and effort-planning and the extension of the network by acquiring new partners to cover all EU member States and SDI communities. Strategic issues as IPR and membership conditions will be addressed within this work package as appropriate.

#### Description of work

Within this work package administrative tasks are accomplished, e.g. the collection of cost statements, the control of works and their compliance to the project plan. Also, the works of the technological, content and dissemination and networking experts are part of this package due to the objective to ensure the highest quality in these aspects. Another task is to maintain the communication within the project consortium, with the European Commission as well as all other involved parties, especially the project environment. A special task is attracting new network members.

#### (Inter-) Dependencies, milestones and expected result

WP1 is the basis for monitoring of an effective and timely management of all other work packages.

M1.1 Establishment of the project management infrastructure (PM4), including the committees and boards

M1.2 Mid-term progress review (PM18)

M1.3 Project End (PM36)

#### Deliverables

D1.1 Overall Co-ordination

D1.2 GI Content Manager

D1.3 Technological Manager

D1.4 Dissemination and Networking Expert

D1.5 Project office

D1.6 Work package administration

D1.7 Progress reports

D1.8 Final report

## Work package Description

<b>Work package number:</b>	<b>2</b>	<b>Start date:</b>	<b>3</b>	<b>End date:</b>	<b>18</b>
<b>Work package title:</b>	<b>Identification and Analysis of Best Practices</b>				

### Objectives

The objectives of WP2 concern the collecting and documentation of relevant existing local, regional and national SDI initiatives and the determination of common problems and good practice solutions. Not only the consortium members will be able to contribute with their examples, but also institutions from other European countries. Based on this, possible integration of good practices should be evaluated and documented. Best practice solutions on existing geographic SDI should be identified. The results of this work package will be communicated to INSPIRE, GMES and GALILEO responsables and to the e-communities and e-government clusters and stakeholders.

### Description of work

WP2 will comprise the collection of information, its analysis and identification of existing solutions. This WP is based on the variety of existing studies (e.g. INSPIRE Country reports and position papers) as well as the project experience of the various contributors on the implementation of SDI.

The work will be supported by conducting the following workshops:

- Initial workshop, aimed at establishing common parameters, which will be used to assess SDI initiatives and to coordinate workshops at national levels and workshops focussed on application domain.
- National and application oriented workshops aimed at and consistently characterizing existing and planned SDI implementations and at linking SDI administrators and GI stakeholders
- Workshops focusing on common issues and on standard solutions, their effectiveness, state of the art and usability, socio economic impact of SDI.
- Workshops addressing the issues of integration between the SDI and the e-government policies and solutions and the e-communities activation and functioning.

### (Inter-) Dependencies, milestones<sup>1</sup> and expected result

WP2 will be carried out from the beginning of the project, directly after the establishment of the project management infrastructure. WP2 will build the basis for the following work packages WP3 and WP5.

M2.1 Accomplishment of work package 2 (PM18)

### Deliverables

D2.1 List of common parameters to assess SDI initiatives

D2.2 Documentation of identified problems and good practices at local, regional and national levels

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<sup>1</sup> Milestones are control points at which decisions are needed, for example concerning which of several technologies will be adopted as the basis for the next phase of the project.

## Work package Description

<b>Work package number:</b>	<b>3</b>	<b>Start date:</b>	<b>15</b>	<b>End date:</b>	<b>27</b>
<b>Work package title:</b>	<b>Best Practices Showcase</b>				

### Objectives

The objective of this work package is to stimulate the re-use and exploitation of already tested solutions by demonstrating success showcases among SDI stakeholders. The showcase should help the GI content stakeholders (providers and users) realise full potential of digital geographical content.

### Description of work

The state of the art technical solutions identified in Phase 1 (WP2) will be analysed by the consortium members and GI experts with the goal to select the best applicable solutions. This analysis will be a pre-selection of solutions for the SDI Best Practice Award. At this Award, institutions of the identified and pre-selected good practice cases will introduce their initiatives and approaches, which can be adopted by other European countries. The Award jury consisting of GI and SDI experts will assess the demonstrated solutions according to the common parameters defined in the WP2. The Award winners and their best practices will be widely announced among the GI community and presented to the broad public. SDI showcases will be prepared based on the best practices assessment. The success showcases will be demonstrated to the network participants during two specific showcase workshops. Internet based permanent showcases will be implemented through the extension of the existing EUROGI Web castle. Representatives of INSPIRE drafting groups will be invited and will receive detailed documentation and access to the pool of best practices. Close collaboration will be developed with the e-government projects and networks in order to set up a mutual sustainable vision and practice of GI.

### (Inter-) Dependencies, milestones<sup>1</sup> and expected result

WP3 is successive to WP2 and related to WP4. WP3 allows reaching the milestone Infrastructure showcase workshops.

M3.1 Selection of good practice solutions (PM23)

M3.2 Finalized Best Practice Award and Showcase workshops (PM27)

### Deliverables

D3.1 Pool of categorised best practices (Data base)

D3.2 Best practices Award

D3.3 Showcase workshops

D3.4 Best Practices internet presentation section

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<sup>1</sup> Milestones are control points at which decisions are needed, for example concerning which of several technologies will be adopted as the basis for the next phase of the project.

## Work package Description

<b>Work package number:</b>	<b>4</b>	<b>Start date:</b>	<b>1</b>	<b>End date:</b>	<b>36</b>
<b>Work package title:</b>	<b>Awareness and Dissemination</b>				

### Objectives

The objectives of the present work package, transversal to the whole project, are:

- To provide and to widely distribute at European level the knowledge of existing Geographic enriched digital information best practices, in order to create information and awareness for most of the European public authorities, users and stakeholders on benefits of using semantically enriched GI;
- To stimulate the demand and the use of digital geographic data and related services at social and community level, by extending in a social and economical cost-effective way the state of the art SDI methodology and technology beyond the regional boundaries.

### Description of work

The WP4 activities are articulated over the whole duration of the project: already from first month, the coordinator will start the activities for the dissemination plan, preparing a timely scheduling plan and drawing up preparation modes for the activities provided for. A common consortium document (dissemination plan) targeted at the identification of a common dissemination approach will be developed, as well as the corporate image for the project: project logo, multimedia banner, document and presentation models. A common document to describe the targeted dissemination audiences, approach, activities and responsibilities will be prepared: this plan will be presented in one of the initial workshops to be shared among the participants.

The *eSDI-Net+* homepage will be set up for the purpose of knowledge and awareness creation (for partners, supporters and other GI stakeholders) and dissemination activities. It will be constantly updated and made available by the Internet; there will be an internal area for network project. Further awareness activities are publications, workshops, guidelines and a public conference.

### (Inter-) Dependencies, milestones<sup>1</sup> and expected result

WP4 is the basis for the transfer of knowledge and awareness as resulted from the WP2. It will coordinate and organise common dissemination approaches along all the work packages.

M4.1 Initial version of the project web site and dissemination materials (PM4)

M4.2 Initial version of Dissemination & awareness plan (PM6)

M4.3 Final version of the project web site and dissemination materials (PM28)

M4.4 Final version of Dissemination & awareness plan (PM24)

### Deliverables

D4.1 Dissemination and awareness plan

D4.2 Project internet presence and community web site

D4.3 Dissemination materials

D4.4 Workshops and public conference

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<sup>1</sup> Milestones are control points at which decisions are needed, for example concerning which of several technologies will be adopted as the basis for the next phase of the project.

## Work package Description

<b>Work package number:</b>	<b>5</b>	<b>Start date:</b>	<b>28</b>	<b>End date:</b>	<b>36</b>
<b>Work package title:</b>	<b>Project Assessment and Sustainability</b>				

### Objectives

The objective of the work package 5 is to measure and evaluate the overall success of the project. The measuring of this success during the project span will be two-fold:

- Evaluation of the achieved results (quantity and quality) and their usage, e.g. amount and impact of organised workshops, and
- Evaluation of the network itself as institution, e.g. on the number of new members, publicity etc.

These findings will lead to the planning of future steps and a sustainability strategy for the network. The planned sustainability measures should enable the network to be a self-sustained living association after the end of the funding period.

### Description of work

Within the WP5 various success criteria and indicators will be applied in order to achieve the project targets, to continuously monitor the quality and progress of the project deliverables and to prepare a detailed final project report. The success of the network activities will be measured from the inner side (network partners and committees) and from outside the consortium (GI stakeholders and the broad public). Therefore questionnaires will be elaborated in order to receive feedback on network activities and the network as institution. Therefore the *eSDI-Net+* Sustainability Plan will be prepared with the assistance of the Advisory Board, which will outline the parameters and deliverables by which the project will be evaluated. The creation of this plan will be carried out by the Network Co-ordinator, but will involve all network members. The results of this work package will present the intermediate and final project results to the network partners, stakeholders, the European Commission, the INSPIRE teams and responsables, the teams of related GMES projects, such as HUMBOLDT, ORCESTRA and other related projects identified. This will provide a basis for the discussions on further steps and actions of the network.

### (Inter-) Dependencies, milestones<sup>1</sup> and expected result

This work package will especially be connected to the WP1. The Network Co-ordinator and the Committees established within the WP1 will monitor the implementation of the WP5.

M5.1 Assessment of intermediate project results (PM18)

M5.2 Final assessment of project results and the network (PM35)

### Deliverables

The assessment results will be documented within the Progress reports (D1.7) and the Final report (D1.8).

D5.1 Sustainability Plan

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<sup>1</sup> Milestones are control points at which decisions are needed, for example concerning which of several technologies will be adopted as the basis for the next phase of the project.

**Deliverables List**

<b>Deliverables List</b>				
<b>Deliverable No<sup>1</sup></b>	<b>Deliverable title</b>	<b>Delivery date<sup>2</sup></b>	<b>Nature<sup>3</sup></b>	<b>Dissemination level<sup>4</sup></b>
<b>1</b>	<b>Network Establishment, Administration and Enlargement</b>			
D1.1	Overall Co-ordination	4	P	CO
D1.2	GI Content Expert	4	O	CO
D1.3	Technological Expert	4	O	CO
D1.4	Dissemination and Networking Expert	4	O	CO
D1.5	Project Office	4	O	CO
D1.6	Work package administration	4	P	CO
D1.7	Progress reports	12, 24,036	R	CO
D1.8	Final report	36	R	CO
<b>2</b>	<b>Identification and Analysis of Best Practices</b>			
D2.1	List of common parameters to assess SDI initiatives	8	R	PU
D2.2	Documentation of identified problems and good practices at local, regional and national levels	18	R	PU
<b>3</b>	<b>Best Practices Showcase</b>			
D3.1	Pool of categorised best practices (Data base)	27	P	PU
D 3.2	Best Practices Award	27	O	PU
D 3.3	Showcase workshops	27	O	PU
D 3.4	Best Practices internet presentation section	27	D	PU
<b>4</b>	<b>Awareness and Dissemination</b>			
D 4.1	Dissemination and awareness plan	24	R	CO
D 4.2	Project internet presence and community web site	28	P	PU
D 4.3	Dissemination materials	28	P	PU
D 4.4	Workshops and public conference	28	O	PU
<b>5</b>	<b>Project Assessment and Sustainability</b>			
D 5.1	Sustainability plan	36	R	CO

<sup>1</sup> Deliverable numbers in order of delivery dates: D1 – Dn. Deliverable numbers must indicate which workpackage they relate to, e.g. D2.1 for the first deliverable from workpackage 2).

<sup>2</sup> Month in which the deliverables will be available. Month 0 marking the start of the project, and all delivery dates being relative to this start date.

<sup>3</sup> Please indicate the nature of the deliverable using one of the following codes:

**R** = Report, **P** = Service/Product, **D** = Demonstrator/Prototype, **O** = Other

<sup>4</sup> Please indicate the dissemination level using one of the following codes:

**PU** = Public

**PP** = Restricted to other programme participants (including Commission services and project reviewers).

**CO** = Confidential, only for members of the consortium (including Commission services and project reviewers).



Another dissemination instrument will be the organisation of public conferences and workshops (see deliverable D4.4 Public conferences). Dissemination materials are summarized in the deliverable (D4.3 Dissemination materials), such as flyers, white papers, templates, posters, newsletters, etc. Partners will have to provide translations for the materials – this is planned to spread the information to a wider audience.

### **Project internet presence and community web site**

The eSDI-Net+ homepage will be published on line: it creates a meeting point among the participating partners, a true and proper shop window of the objectives proposed and of the results that are gradually reached. The site will have various sections both of general information on the project and to publish new material (the partners and the supporters will be able to have updated documentation and corporate image material that they can use in their respective countries for all aspects related to the dissemination, information and promotion.

Objective of the site is the constant increase of the number of visits and of documents available on line. The links to the sites of all the partners will be easily accessible on the site. The participants to the international final conference can register filling a form directly on line.

At the end of the final conference the material that is distributed to the participants will be available on the site. Thus, upon their return to their respective countries of origin, all those who made an intervention to the event will be able to disseminate the material in a simple way all over Europe.

### **Corporate image**

For this project, in which great importance is attributed to the dissemination activity, a project visual identity is of essence, to make easily recognizable and identifiable all the disseminated documents and the applied communication products.

The following specific items will be prepared:

- Project logo, declined in different versions suitable both for editorial products and Internet use. This logo will be presented to all the participants during the first technical workshop
- Multimedia banners for Internet promotion of all the Institutions that participate to the project and that request them. The banners will be designed in IAB standard format and will take into account all multicultural and multi-language aspects
- Models for the univocal identification of the project documentation (headed letter-paper)
- Models for a uniform presentation of the online documentation to be presented on the occasion of workshops and events.

### **Newsletters**

Quarterly newsletters will be issued, at least among the different network represented by the partners. The newsletters will provide information about the project, updates and to share European best practices on the subject. Particular attention will be devoted to the presentation of the project development phases (objectives that have been reached and ongoing activities).

The newsletter will be published through e-mail and all the partners will be asked to send it to their usual interlocutors, supported by the partners, e.g. La Sapienza newsletter mailing list with 500 readers, INI-GraphicsNet newspaper “Computer Graphics topics” appearing every two months and arising about 2000 readers, as well as further newsletters from EUROGI, AGILE and other partners.

### **Workshops**

During the workshops the partners will share the progress made on the project and the documentation that is currently available. The participation of at least 10 partners to the workshops is expected on average, but often about 15 to 20 people will attend them. Each workshop foresees the participation of the partners who are more closely involved in the activities related to each workshop.

The workshops will focus on following topics:

- Initial workshop, aimed at establishing common parameters

- National/application oriented workshops
- Workshop on standard solutions
- Workshop on best practices (including promotion of good initiatives on data sharing and flexible licensing mechanisms)
- Best Practice Award
- Two workshops on infrastructure showcase

**International final conference**

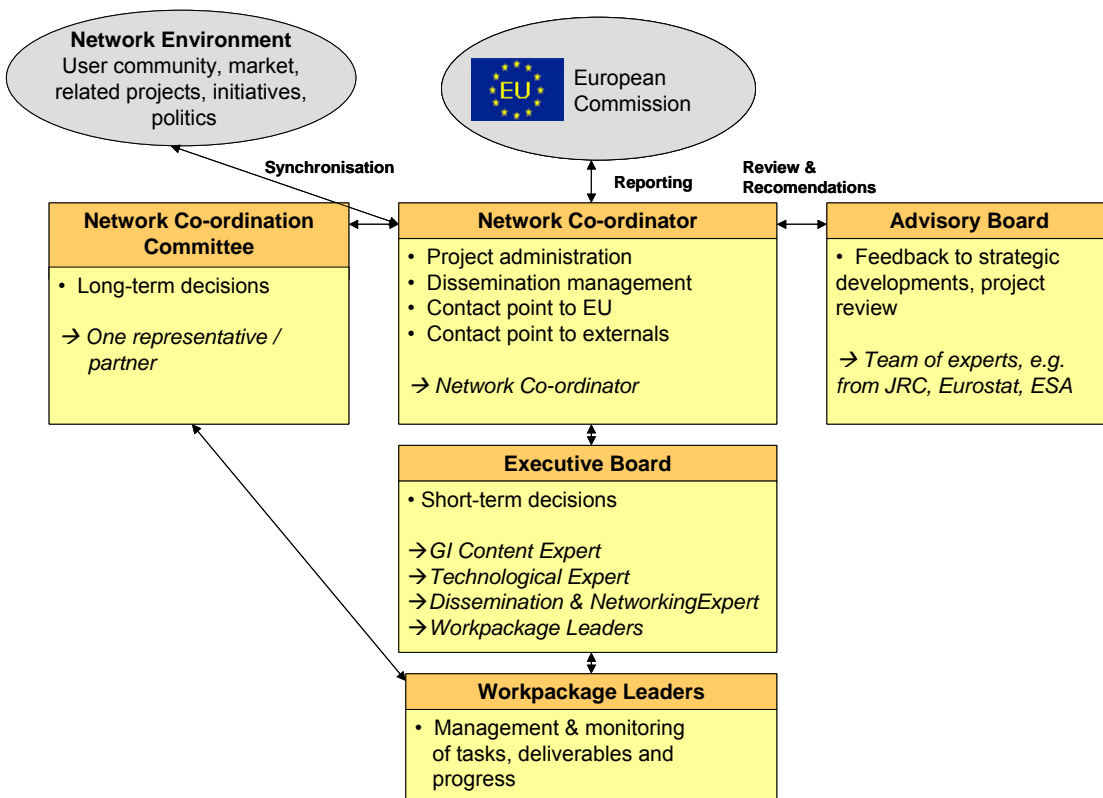
A final one-day event will be planned in the last project year, after the accomplishment of the work package 3 – the international conference. This event aims at presenting to the widest public the results reached by the network. It shall hence be a point of arrival and an occasion to present the activities that have been carried out and, simultaneously, an occasion for some reflection to support the future sustainability plan. The conference will most likely see the participation of about 300 participants from all European countries.

**7 Project management**

The main principle of eSDI-Net+ project management is to establish a lightweight and effective administration model, providing the basis for common understanding and fruitful co-operation within the consortium, towards achieving the project goals. The project operation will be assured by the following entities:

- Roles: Network Co-ordinator, GI Content Expert, Technological Expert, Dissemination and Networking Expert
- Committees and Boards: Network Co-ordination Committee, Executive Board, Advisory Board
- Offices: Project Office

The following figure illustrates the entities and their relationships.



**Administration Structure of eSDI-Net+**

The network will have structure, workflow and control mechanisms that allow for denser communication channels, keeping a light structure. This will be accomplished by creating Interest Groups, which will cluster the partner's members by speciality, geographical area, etc. These Interest Groups will be started by central network management, but will operate independently. As results,

- High-level communication channels are kept
- Low level information exchange can exist between partner's members
- Low overhead is added to network managing
- Internal structuring of the network members is promoted
- Dense and wide networking can be achieved quickly (as the increased overhead for new members is supported by network members, not by the central structure)
- Autonomous operation co-exists with central management.
- The existence of multi-cultural and multi-thematic Interest Groups allows consensus on standards, methods and best practices.
- Awareness raising is done at high and low level, pan-European and local level.
- High-level management will assure consensual results dissemination across Europe, and low-level will ensure that stakeholders access relevant data.

It is planned to gather information about existing SDI initiatives. The consolidated and enlarged network will allow also networking with GI related business companies who have a European coverage or strategy.

## ***Roles & Responsibilities***

### **7.1 Network Co-ordinator**

The network co-ordinator monitors the overall network establishment and maintenance and ensures that all phases of the project are properly implemented. His main tasks include the supervision of

- General administration including financial administration,
- Communication and
- Co-ordination between the consortium members,

being the contact person for the Commission. Besides this, the network manager monitors budget spending and has to organise and to calculate carefully the project resources.

The network manager is the responsible contact person for the communication from the consortium to the European Commission.

### **7.2 GI Content Expert**

The GI Content Manager is responsible for the content of the activities performed during the contract. He ensures a high content quality by monitoring the content-related works in the project as well as by monitoring project-external developments in the GI field. The GI Content Manager works closely with the Network Co-ordinator and the relevant workpackage leaders. His main task is:

- Generation and monitoring of the publication plan, a deliverable which defines the amount and the planning of scientific publications within *eSDI-Net+* ;
- Monitoring the scientific output of *eSDI-Net+* according to the project external developments;
- Coordination and communication of INSPIRE-related topics.

### **7.3 Technological Expert**

Since *eSDI-Net+* is built on the most updated results of technological and scientific research about spatial data infrastructures, metadata and semantic enrichment a Technological Manager will be appointed by the

Network Co-ordinator . The Technological Manager will tightly operate with the Network Co-ordinator and the Network Co-ordination Committee in order to ensure the technological and scientific achievements and the scientific sustainability of the project against the research arena.

Besides ongoing monitoring the Technological Manager is responsible for the communication with related projects, e.g. GALILEO, HUMBOLDT, ORCESTRAS.

#### **7.4 Dissemination and Networking Expert**

The communicator role fulfils the following tasks:

- Systematic attraction of new members
- Monitoring of the communication towards the project environment, especially the associated projects
- Identifying the communication gaps
- Communication start up with project environment where useful and necessary

The communicator has to ensure that *eSDI-Net+* accomplishes appropriate communication in relation to its project environment. The communicator is located with the project co-ordinator but has also to monitor the communication of project partners. The Communicator has to ensure project results are disseminated to promising developments of the environment and also to ensure that communication will be set up if external developments could affect the project. Especially synergies, feedback and prevention of redundant developments are taken into account.

#### **7.5 Workpackage Leader**

The Work package Leader (WP Leader) is responsible for the co-ordination of the work of the partners collaborating on that work package. The WP Leader also insures that deliverables are being produced on time and to budget. The WP Leader convenes meetings of the collaborating partners. These include both one to one and collective meetings. They will make always use of telephone conference in order to minimise travel costs. These meetings are chaired by the WP Leader, who arranges for records of decisions to be maintained and distributed. The WP Leader reports on progress to the Network Co-ordinator. During the execution of each work package, the WP leader ensures a proper exchange of information with the other partners not participating in the said WP, in order to keep the whole consortium updated on the other partners activities on the project.

### ***Committees***

#### **7.6 Network Co-ordination Committee**

The Network Co-ordination Committee will have the overall responsibility for the technical, financial, administrative, content-related and awareness raising aspects of the project. In particular, the committee will:

- Decide the strategies of the project within the framework of the contract;
- Monitor and assess the progress of the project and make recommendations for appropriate amendments to the work-plan as required;
- Assess the impact of any changes to the contract or its terms suggested by the European Commission and respond accordingly;
- Review the policy and strategies of awareness and publicity, in particular with regard to releasing project information to the outside world;

The committee is chaired by the project co-ordinator and includes one representative from each partner. It is the main decision body of the consortium. It is in charge of all formal decisions regarding technical direction of the work, relations with external organisations, policies for promotion of results, administrative arrangements. In order to minimise management overhead and project costs, partners are required to take part only in meetings concerning their affairs. Any partner is obliged to consult the consortium prior to any action or decision that might affect the "public" image of the consortium.

Each member of the committee has one vote, but can also transfer this vote to another member of the

committee. This is done on a per-decision basis.

## **7.7 Executive Board**

The executive board is set up to ensure that short-term decisions can be realized within the management structure. This lightweight board also acts as communication channel towards the advisory and the review board. It is composed of representative of the Network Co-ordinator, the GI Content Manager, the Technological manager, and the Work package Leaders. Each board member possesses one vote.

## **7.8 Advisory Board**

The advisory board is an instrument, which gives input on technological and strategic decisions. It is composed by GI senior experts within and outside the network to ensure that eSDI-Net+ is able to adjust to upcoming developments during the project period. The Advisory Board will consist of experts with long-years experience and the necessary contacts in the GI field.

The board will be structured in a technical/scientific and a strategic/political group and will include 5 members at the start of the project and later up to 10 members. It will meet once a year and the travel costs are claimed by the project co-ordinator.

### ***Project Environment***

The project environment includes the following elements:

- GI Administrators and Stakeholders
- Associated Projects, specifically the GMES projects
- Local authorities that are not direct members but accessed through EUROGI and the national GI associations that are eSDI-Net+ partners

The Project Environment is very important for the success of the eSDI-Net+ project. This importance comes from several sources:

User communities are very fragmented and not organised in a structured manner. European and regional environmental monitoring is addressed by a large number of players at different hierarchical levels (regional, national, and European) and within a series of topics and sectors e.g. agriculture, forests, biodiversity, habitats, water, air quality, climate change, with little horizontal integration between them.

Most of these stakeholders' information needs result from reporting obligations, and thus far are satisfied by dedicated in-situ (and to a small degree remote sensing based) monitoring networks. The in-situ monitoring networks for land cover / land use, water surfaces and the atmosphere are very diverse and only to a small degree standardised. The diversity in terms of data formats and of the nomenclature is based on the fact that in most countries in-situ monitoring data are implemented for single purposes.

The number of currently on-going topic oriented ESA or FP6 funded GMES projects e.g. land, forest monitoring, risk, ocean, atmosphere reflects this sectoral approach. Accordingly, each of these projects has its own small user federation and applies different methods of user-provider integration. Nevertheless, partly on a topic basis, and totally on a procedural level, these user federations would greatly benefit from being connected with each other. Linking these user communities would create a significant added value through the exchange of experience of solutions to problems common to several projects, and the dissemination of common approaches.

### ***Project office***

The project office provides administrative assistance in the establishment and maintenance of the network, to co-ordinate the working groups and industrial and commercial partners and ensure that the project delivers the expected results. It is responsible for all contingencies and manages corresponding actions.

The project office is responsible for installation, operation and maintenance of the network infrastructure, ensures administrative co-ordination between the partners and the prompt provision of all results, e.g. deliverables.

The project office collects the partner inputs for the financial statements.

### ***Decision Making***

Overall management will be performed by an open teamwork organisational model with the objective to ensure that the various phases of the project are properly co-ordinated in order to maximise project success, to ensure the quality and timely delivery of the required reports and to define the major alignment guidelines, including documentation style. Meeting decisions will normally be taken by seeking consensus. However, after a reasonable amount of time has been allowed to illustrate and defend conflicting positions, the approval of a two-third majority of partners will be sufficient in order to avoid deadlocks in project operational progress. If the decision being taken is unacceptable to partners found in the minority positions, the resolution of the conflict will be elevated to each partner's higher executive level. If no resolution is possible through each partner's higher executive, then the standard Red-Flag procedure will be used as the last resort. Either the project co-ordination committee or the project co-ordinator can initiate the conflict resolution procedure.

Decision making by elections are valid if at least 50% of the involved partners submit a vote. Elections will be accomplished either at meetings or by an online system if time restrictions do not allow a decision during a meeting. For online submissions, the topics on which to decide have to be published at least two weeks before closing the election. If less than 50% of the involved partners submit a vote, the election can be postponed once by two additional weeks. If after the extensions of the voting period no valid result is taken, the resolution of the conflict will be automatically transferred to the project co-ordinator.

### ***Information Flow***

The information for the eSDI-Net+ project will be exchanged through:

1. Biannually progress reporting among all partners
  - Reporting by the Network Co-ordinator to the European Commission;
  - Meetings of the Network Co-ordination Committee for the contractual and administrative execution and monitoring of the project;
  - Meetings of the GI Content Expert and relevant partners for the execution/monitoring of the content-related issues;
  - Meetings of the Technology Expert and relevant partners for the execution/monitoring of the technological issues;
  - Meetings of the Dissemination and Networking Expert and relevant partners for the execution/monitoring of the dissemination and awareness issues;
  - Yearly meetings of Advisory Board and Executive Board;
  - Electronic communication or virtual meetings based on existing instruments.

Details will be exchanged within and between work packages through email and by meetings. A high quality web site will be established for internal and external communication. The web site area, which allows access for project partners only includes all deliverables, progress and management reports and cost statements. The open area will be used for the dissemination of public documentation and the announcement of events (workshops, conferences). Deliverables will be provided on paper and on disk and will be sent by email and on paper for registration. Common activities will be realised through trans-national meetings and Internet facilities. Each work package leader will disseminate the outputs and results during the trans-national meetings and via the web, in order to let each partner know the activities, which have been accomplished. Moreover, there will be bilateral exchanges amongst partners on specific issues.

Appropriate instruments will document the project communication, e.g. minutes of telephone conferences. The documentation will be provided to the involved partners within 5 working days. Every meeting will have a minute taker.

Information exchange methods based on Internet, such as WEB sites and e-mail, will be fully employed throughout the project. This is to simplify and to spread up the information exchanges between partners. This will also assure that the partners know all that they need to know of the others' activities thus avoiding errors and misunderstandings. The eSDI-Net+ internet homepage will be organized with a two level architecture: a public level, used to present and promote the eSDI-Net+ activities and a network level, used among partners to exchange relevant project information.

### ***Meetings***

A meeting plan will define meetings in a way that communication and effort can be reduced. The plan will relate to meetings of:

- Advisory board: Advisory meetings will be held once a year and are scheduled six months after eSDI-Net+ presentations to the INSPIRE drafting groups, so that by these presentations and the review meetings a yearly reviewing of the project status is accomplished.
- Executive board: The meetings of this board will be scheduled according to the project plan and the review meetings. The board aims to meet twice a year.
- Network Co-ordination Committee: In contrary the Network Co-ordination Committee will meet once a year.
- Other meetings: Technical meetings for the work package participants are scheduled due to the project plan and consequently, irregularly.

Representatives of all project partners will meet in the kick-off meeting early after the signature of the contract with the European Commission, and put down the framework on which they will perform their activities and move on to any necessary adaptations according to the time schedule, milestones and work programme developed for the project. The number of other meetings among partners will be planned in workshops occasion, in order to minimize travel costs: the use of virtual conferences will be strongly encouraged and stimulated by the Co-ordinator.

### ***Submission procedure***

Deliverables planned in the project underlie the submission procedure, which defines the timelines and actions to submit a deliverable. This procedure is part of the project handbook and will include:

- Definitions of versions of the deliverables (Initial, Final etc.)
- Timing for submission of several versions
- Action plan for delayed or insufficient submissions (Responsibilities, Time plan)

### ***Consortium Agreement***

The consortium agreement will be set up during the negotiation phase and will be finalized at the latest at the same time as the contract. It will address technical, commercial, organizational, financial and legal provisions of the partners.

The IPR issues will be covered by the consortium agreement. Most probably the agreement will have to be extended since new partners are planned to be integrated into the consortium. These changes will not cover the overall management of the network but will manage the content of new contributions.

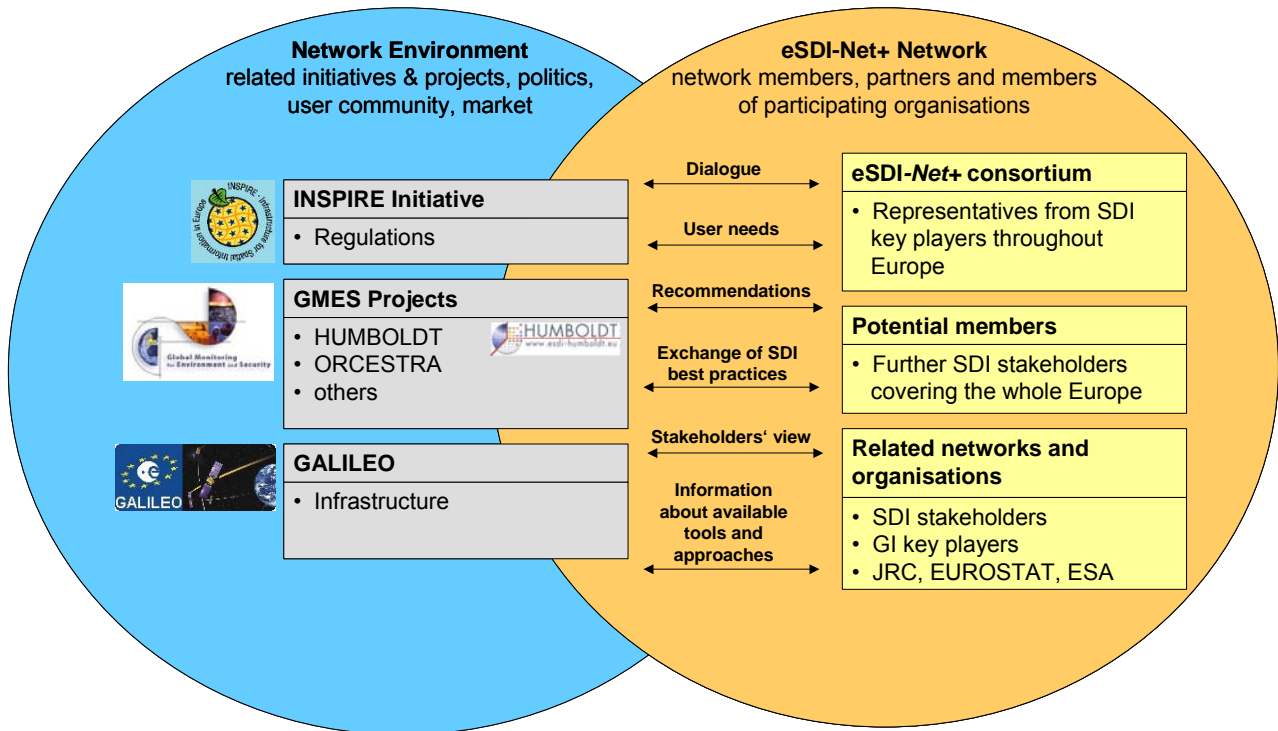
In the consortium agreement, a member can also transfer their co-ordination committee vote permanently to another member.

### ***Relations to INSPIRE, GMES and GALILEO***

eSDI-Net+ will establish a regular communication (every six months) with the INSPIRE drafting teams, especially the Monitoring and Reporting and Data Sharing teams. These relation to these teams is important for assessment of the SDI's and will be an important contribution to best practices identification and assessment within eSDI-Net+. So, it will be possible for eSDI-Net+ to act as an "INSPIRE Project" due to the framework given in chapter 6.4 in WP-PP-v4.5.3. Since INSPIRE expects elaborated first drafts from all drafting teams for the end of year 2006 and the Implementation phase will take place in 2007 – 2008, eSDI-Net+ will be able to actively contribute to the realization of the INSPIRE by providing up-to-date information about the results of SDI best practices identification assessment. On the other hand, eSDI-Net+ will disseminate the implementation rules of the "INSPIRE Work Programme Preparatory Phase 2005 – 2006" (<http://www.ec-gis.org/inspire/>) (WP-PP-v4.5.3).

Through direct contacts to the Joint Research Centre (JRC), Eurostat and ESA and information exchange, invitation of members of these organisations to meetings and workshops, close collaboration and interconnection will be established. The Network will also establish a regular communication (every six months) with the GMES projects, such as HUMBOLDT, ORCESTRA etc.

The network is planned to be a platform to raise awareness for the INSPIRE initiative and for the dissemination of the rules for “Spatial Data Specifications and Harmonisation”, “Metadata”, and “Network Services” and findings of the Monitoring and Reporting and Data Sharing teams. The first drafts as well as results of their testing will be announced among the partners.



Interconnection between eSDI-Net+ and related initiatives and projects

### Envisaged structure of the network

#### Mission and goals

This consolidated and enlarged network will bring together relevant stakeholders, expertise and facilities with the objective of identifying best practices and coordinating the development of specific approaches for improving the availability and reusability of digital content in the geographic information area. It aims to achieve a broad consensus on methods and standards and to impact on a critical mass of digital GI content at European level. All these activities aim at the “urbanisation” of local, national, European and thematic SDI for the benefit of the citizens, good governance and commerce in Europe

The partners will agree on the main network objective and strategy, e.g. on being a broad umbrella in the GI field while also having a thematic focus on e.g. sustainable development, land use and land planning, environment, agriculture as well as Geosciences and Space or Topography, Cadastre, etc. This will be facilitated by the high- and low-level communication mechanisms in the network.

#### Organisation

To fulfil its mission, the GI Network should have a permanent headquarter staff of 2-3 people to coordinate all network activities towards its vision. The network will work on a distributed basis, with headquarter staff ensuring overall co-ordination while operational activities are performed by its member organisations.

## **Membership**

To maintain the network activities beyond the financial promotion of the eContentPlus Program and to ensure thus the sustainability of the consolidated and enlarged network it will be necessary to use or obtain resources from the participants of the network.

An outcome of the project during its eContentPlus funded period will be the business model definition, which will enable the future network sustainability, either by commitment of the participant partners and the efficient use of already own existing resources or in the meantime developed.

A Memorandum of Understanding (MoU) will be an appropriate mean of constitutional character for the member organisations to agree on mutual cooperation.

## **8 Description of consortium and key personnel**

### **1. The Foundation “INI-GraphicsNet Stiftung”, Germany (IGS)**

The INI-GraphicsNet Stiftung actively supports research and development, and the commercialisation of R&D results. IGS offers a series of support services related to the licensing, patenting and the creation of spin-offs out of the R&D institutes, the IGS formulated an extensive set of measures and acts as a broker for technology exploitation. These services, which are offered during the incubation phase include market research, the development of commercial plans, and the definition of strategies pertaining to sales and distribution, public relations and communication.

The activities of the IGS are very important for increasing innovation and developing new markets and possibilities for acquiring financial support. The IGS serves as a framework for promoting the synergetic fruits of work performed by universities and R&D institutes. In co-operation with partnering entities, the IGS establishes the necessary links for the commercial use of research results.

The IGS aims to support developing new markets and therefore IGS owns effective instruments for network administration as well as in dissemination and raising awareness. Therefore IGS will coordinate the network and bring in its experience in dissemination and network management.

#### ***Professor Dr.-Ing. Dr. h.c. mult., Dr. E.h., Hon. Prof. mult. José Luis Encarnação***

José Luis Encarnação was born in Portugal and has been living in the Federal Republic of Germany since 1959. Since 1975 he has been professor for computer science at the Technical University Darmstadt and head of the department Graphical-Interactive Systems. Professor Encarnação is Dipl.-Ing. and Dr.-Ing. in electrical engineering from the Technical University of Berlin. He is Author or Co-Author of more than 500 publications and articles in international reviewed journals and well-known conferences. He is editor-in-chief of *Computers & Graphics*, which is published by Elsevier Science. Since July 2001 he has been chairman of the information and communication group of the Fraunhofer society, which results from the fusion with the GMD (in total 15 institutes with round about 2000 staff members and 190 million EURO budget in 2002). 1995-2004 he was an elected senior technical reviewer and advisor to the German Science Foundation (DFG). Since 2001 Professor Encarnação has been a member of the EU advisory board of the information technology area (ISTAG), its chairman in 2002-2005 and is its co-chairman since 2005. Since 2002 he has been a member of the Advisory Board for the Internationalisation of the Portuguese Economy.

**Dr. Joachim Rix** is Science and Technology Director of the foundation INI-GraphicsNet Stiftung since 1999. In the last twenty years Joachim Rix has been in charge of various R&D projects in the area of Computer Graphics and its industrial applications, sponsored by the industry and public agencies, mainly the German government and the European Community. In his current position he is responsible for technology scanning and screening and for technology transfer within the INI-GraphicsNet and to external partners. Mr. Rix is member of the Board of Directors of several international R&D organizations, representing the interest of the INI-GraphicsNet foundation. Dr. Rix has been a member of the national and international standardization groups (ISO TC 184/SC4, DIN-NAM 430.4), working on product data modeling (STEP), and of the German and international standardization group for Computer Graphics (ISO/IEC JTC1/SC24, DIN-NI 24). He is also member of the Eurographics Association and the German Computers Science Association (GI). He is co-author of several scientific books and published more than seventy papers.

## **2. AGH University, Poland (AGH)**

Faculty of Mining Surveying and Environmental Engineering was created on 1st October 1951 as a part AGH - University of Science and Technology. Nowadays the research done by Faculty focuses on the applications of the computer science in the aspect of the processing of spatial data (GIS) and using modern measurement techniques. Research on many aspects related to the use of GPS, surface and air-borne laser scanners and radar interferometry is carried out. Also work on the use of remote sensing and photogrammetry in the monitoring of natural environment, cultural monuments etc. is being done. The studies in environmental engineering concentrate on improving the methods of the assessment of the state of natural environment, optimisation of the impact of industry on environment and bringing back

*Dr. Artur Krawczyk* has received a diploma degree of environmental engineering from the AGH University of Science and Technology in 1995. Since then, he has been working at AGH. He also obtained the postgraduate degree on „Protection of Mining Areas” Faculty of Mine Survey and Environmental Engineering at AGH and postgraduate degree on „Open Computer Systems” in the Faculty of Electronics and Information at AGH. He has managed two national research projects and work in one European project, which were concerned with GIS, Metadata and remote sensing technologies. He has published several scientific papers in national journals and conference proceedings. He has been in charge of various R&D projects in the area of Software Developing and its industrial applications, sponsored by the industry. He has teaching position at the AGH, where he offers several courses concerning the geoinformatics.

## **3. AM/FM GIS Italia, Italy (AMFM)**

The Automated Mapping Facilities Management Geographic Information Systems Italia is a non grant funded, non profit making association of GI institutions, companies and users (professionals and students) in Italy. It was established in March 1990 as the Italian chapter of AMFM International. AM/FM is based in Rome and has an elected council of 15 members, which elects a president, a secretary, and a scientific council. The objectives of the association are to develop interest in GI within Italy, to diffuse information and knowledge of GI within Italy, to increase collaboration between public and private sectors in GI and to support coordination among different levels of government (central, local and sub-local). AM/FM Italia is founder member of Eurogi, the European Umbrella Organisation for Geographic Information. Furthermore, AM/FM Italia is founder member of the Italian Federation ASITA, Italian scientific associations for geographic and environmental information. AM/FM Italia has 102 members made up of Sponsor members, Industrial members, Users members and Individual members, with a further 8 honorary members (Italian governmental institutions related to GI). The Association holds one yearly national conference the ASITA conference, while specialised workshops and thematic conferences are held each year. AM/FM has been involved in the Italian project called ‘Intesa Stato-Regioni-Enti Locali sui Sistemi Informativi Geografici’ (Agreement of central, regional and local government on GIS). AM/FM has a strong liaison with CNIPA, which is the technical secretariat of the Italia National Committee for GI, and with the Committee itself: current activities span from the national ISO 19115 profile and related Catalogue Service, to the definition of technical specifications for orthophotos and topographic databases.

## **4. Association for Geospatial Information in South-East Europe, Bulgaria (AGISEE)**

AGISEE was established in October 2004. Its overall goal is to support the needs of all groups of the society for access to, sharing and use of geographic information. To this end, the association works towards the development of an infrastructure that will allow users globally and inter-regionally to access spatial data at a variety of scales from multiple sources that will ultimately appear seamless to the user. It supports the work of organisations in Southeast Europe to develop their own initiatives for data access and data sharing, nationally and regionally, and works together with local, national, and international organisations to ensure that the geospatial data, services, and meta data are accessible through interoperable standards-based services, systems, software, and products that operate in a web-enabled environment.

Forming this association recognizes that the GI sector needs to be better organized in order to eventually enable wide access to spatial data as stimulus for the market and for employment. In this respect, the association has a double role, firstly in informing members about relevant issues such as technology development, standards, best practice cases of using GI, world-wide actors, European initiatives, legal

environment in Bulgaria and abroad, possibilities to obtain financing; secondly in promoting the role of GI to the outside world and lobby for better use of spatial data. Strong support is noted from the private sector (ESRI, Intergraph, URSIT Ltd.). The association lives mainly from the voluntary work of the management board and the founders, and has at the moment more than 60 members.

**Ulrich Boes** is the main founder and elected president of AGISEE, and is responsible for the strategy and the management of the association. He has experience in research, private industry and in the European Commission. Here, he worked more than ten years in the Directorate Generals of Industry and Information Society, being responsible for the area Open Systems and Interoperability, Geographic Information Systems and the World-Wide-Web. As EC Official, he had contributed to the establishment of W3C and OGC in Europe. Before, he had more than ten years experience in industry and research, where he dealt with image and signal processing, and pattern recognition; he held positions of a researcher, systems engineer, project engineer, research and marketing coordinator. In his current position, he works actively on the establishment of spatial data infrastructures in South East Europe, and has collaboration on-going with international organizations in the field of GIS such as OGC, Eurogi, EuroGeographics, GSDI. He is member of the advisory board of OGC-Europe and of the GSDI Association.

**Dr. Raina Pavlova** is co-founder and member of the management board of AGISEE. She has been Associate Professor in Computer Science and principle lecturer in the Programming and Computer Technology Department of the Technical University – Sofia. There, she is teaching Programming in High level Computer Languages, Multimedia Technologies, WEB technologies and GIS design and applications. Her main research interests are in the fields of programming in new computer languages, web application design, using new technologies in education, e-learning, geographical information systems. She coordinated several European projects in the field of GIS and geospatial data such as: INCO-COPERNICUS No 977136 "Pan-European Network on Geographic Information - PANEL-GI" (1998-2000), INCO-COPERNICUS No 977050 "Administrative Boundary Data Services for CEEC" (ABDS) (1998-2000), ESPRIT No 23802 "GEIXS" (1998-1999); No:IST -2001 -37994 "GISEE - GIS Technology and Market in South East Europe - Study".

## **5. Association of Geographic Information Laboratories for Europe, Netherlands (AGILE)**

The Association of Geographic Information Laboratories for Europe (AGILE) was established in early 1998 to promote academic teaching and research on GIS at the European level. AGILE seeks to ensure that the views of the geographic information teaching and research community are fully represented in the discussions that take place on future European research agendas and it also provides a permanent scientific forum where geographic information researchers can meet and exchange ideas and experiences at the European level. Members (groups of researchers rather than individuals) may be involved in matters relating to cartography, computing, geographic analysis, socio-economic and environmental modelling, and surveying as well as application areas such as agriculture, forestry, geology, hydrology, market research, urban planning, transport and research on the legal and institutional issues associated with the use of geographic information technologies. They can be based in academic institutions as well in other centres where geographic information research is carried out as for example EU-funded, government funded and National Science Council funded centres. At the moment (October 2006) there are 92 members from 22 different European countries. One of the major activities of AGILE is the organisation of an annual conference. Thus far, conferences has been organised in Enschede (1998), Rome (1999), Helsinki (2000), Brno (2001), Palma de Mallorca (2002), Lyon (2003), Crete (2004), Estoril (2005) and Visegrad (2006). Working Groups are established to promote activities on specific themes. Such themes are Environmental Modelling, Education, Data Usability, Interoperability and Data Policy. These working groups are the working units of AGILE. The Interoperability WG for example organized pre-conference workshops in order to bring together academics and specialists from private organisations to discuss current developments and joint research.

**Fred Toppen** works at the Faculty of Geographical Sciences of the University of Utrecht. His prime responsibility is education management and teaching of GIS and related issues. Since the start of the EGIS conferences, he has been involved in the organisation of workshops. Later he joined the Organising Committee. His main responsibility was the setting up of the Education Special Interest Group. This group proved to be successful in organising coherent streams within the EGIS paper presentation sessions. The same role was played by the Education and Awareness Special Interest Conference Committee for the

JEC/GI conferences. For both groups, Fred Toppen acted as Treasurer and as Vice-Chairman and initiated and contributed to most of its activities. He was chair of the Organising Committee of the first European GIS Education Seminar which took place at Soesterberg in September 1998 and still every two year, lastely in Krakow, Poland. From 1998 he has been the secretary and form some years the treasurer as well of AGILE. After 8 years he left the council and acts since 2005 as external officer to AGILE.

**Monica Wachowicz** worked after receiving a Ph.D. in Geography from the University of Edinburgh in 1995, specialising in spatio-temporal modelling in Geographical Information Systems, on spatio-temporal modelling for ubiquitous computing at the University of Cambridge, Computer Sciences Department in England, for two years. She then took a research fellow position at the Pennsylvania State University before joining the Wageningen University and Research (WUR) in 1999. Her research interests are in the areas of geographic representation in knowledge discovery (data mining), spatio-temporal data models, and geovisualisation. Current research efforts include the multiple representations of space and temporal dynamics in databases and related data mining tasks, the human cognition of space-time in dynamic visualisation, and usability issues in a GI Science context. She is author of several publications in these research areas including her book entitled Object-Oriented Design for Temporal GIS. She teaches spatio-temporal modelling and geovisualisation to the MSc students of the Master Programme in Geographical Information Sciences in Wageningen. She is currently a member of the Editorial Board of the International Journal of Data Science Journal - A Journal of the Committee on Data for Science and Technology of the International Council for Science as well as a member of the Comite de Lecture - Cartographie Animée de la Revue Internationale de Géomatique. In addition, she is a member of the Association of American Geographers - Geographic Information Science and Systems Specialty Group and Spatial Modelling Speciality Group, a member of the ACM-SIGKDD - Special Interest Group on Knowledge Discovery and Data Mining and a member of the International Cartographic Association - Commission on Visualisation and Virtual Environments. She has been chairing the AGILE Usability working group since 2002. Recently, she has joined the ISPRS Technical Commission II, Theory and Concepts of Spatio-Temporal Data Handling and Information, as the secretary of the Working Group on Spatio-Temporal Modelling. Currently she is the secretary of AGILE.

## **6. Association USIG (Users of Geographic Information), Portugal (USIG)**

USIG is the Portuguese Association of the Users of Geographic Information. It's a non-profit private organisation founded in 1991. The objectives of USIG are to reunite and organise the users and producers of GI and the distributors of GIS and related technologies, aiming at the exchange of information. USIG finds its members in public institutions and private enterprises, universities, municipalities and individuals. The main Portuguese stakeholders are members of USIG. Currently, the association has more than 400 institutional and individual members. Along its 15 years of work, USIG was able to consolidate its positions as one of the main stakeholders in the area of GI and GIS in Portugal. Its main activity has been the organisation of the Users Conference of Geographic Information that takes place every 2 years. USIG also organised 2 worldwide events (GIS Planet'98 and GIS Planet'05) and has also been promoting more focused events like technical workshops, training courses and exhibitions.

**Ana Sousa** is, since 2005, Project Manager for Spatial Data at the European Environment Agency, in Copenhagen, Denmark. Between 1988 and 2004 worked at the Portuguese Environment Institute, being responsible for the geographic component of the information system of the Institute. By then she was also involved in the INSPIRE – Infrastructure for Spatial Information in Europe – and GMES – Global Monitoring for Environment and Security – initiatives. Ana Sousa has a diploma in environmental engineering from the New University of Lisbon. She is a member of the Portuguese Geographic Information Users (USIG) since its foundation, and since 1995 has been a member of the organising committees of ESIG (Portuguese Users Conference of Geographic Information). In the period 2001-2003 she was the President of the Association.

## **7. Autodesk, Switzerland (AUTD)**

For 24 years, Autodesk has invested in people, software, and technology to help customers realize their ideas—to compete and win. Autodesk first revolutionized the software industry with the AutoCAD® product, which introduced drafting on a PC. The widespread popularity of AutoCAD software forged our

company's lifetime commitment to practical innovation that drives productivity and profitability. AutoCAD also paved the way for Autodesk technology leadership in industries such as building, infrastructure, manufacturing, media and entertainment, and wireless data.

Frank von Arx was born on April 20th 1958 in Switzerland. After completing his studies as Survey Engineer he gained the special Degree Patent as an Official Swiss Geometrician (Patentierter Ingenieur-Geometer). In 1982-1983, he worked as a Surveying Engineer in Honduras building the hydraulic arc dam "El Cajon". From 1983 to 1990 he worked for Kern, Switzerland as a sales engineer, software developer and software product manager. In 1990 he was founding C-Plan Ltd., the inventor and vender of the Open Geospatial data server Topobase™, and was acting as the CEO of C-Plan until the company was acquired by Autodesk in 2005. Since the acquisition in 2005 he acts for Autodesk world wide as the Director of the Topobase Solution.

## **8. Consiglio Nazionale delle Ricerche, Istituto di Matematica Applicata e Tecnologie Informatiche, Unità Organizzativa di Genova, Italy (CNR)**

CNR-IMATI-GE is the Department of the Institute for Applied Mathematics and Information Technologies (IMATI) in Genoa of the National Research Council (CNR) in Italy. Fundamental research is performed by the Shape Modelling Group on spatial data modelling, computational geometry, automated reasoning and semantic modelling. Their research activities relevant for the project are Semantic modelling of geographic data (ontology modelling, semantic analysis of ontology-driven metadata, geometric similarity among data), methods to represent and process the geometry of spatial data and the characterization and structural information analysis of geometric models.

Some research activities are performed within EU projects: of particular relevance is the coordination of the Network of Excellence AIM@SHAPE and the project INVISIP.

**Bianca Falcidieno** is a Researcher Director of the CNR and the chair of the Department of Genoa of the Institute of Applied Mathematics and Information Technology. Since many years she is responsible for the Geometric Modelling and Computer Graphics Research Group, now Shape Modelling Group, working on the field of Applied Mathematics and Computer Science, with application in Computer Graphics, Geographic information System, and Industrial Design. In her activity, she supervised many young researchers and PhD students in Italy and abroad in these topics. Editor in chief of the International Journal Shape Modelling (a World Scientific Journal), she is the author of more than 200 scientific refereed papers and books. Currently, Bianca Falcidieno is the coordinator of the Network of Excellence AIM@SHAPE and at the national level she is coordinating the project MACROGeo.

**Monica De Martino** is currently a researcher at IMATI of the Italian National Council of Research in Genoa. She graduated from the Department of Mathematics, University of Genoa. Since then she has been working at the IMATI where she has been involved in National and International Projects on spatial data processing and analysis and their specific application in Geographic Information System. Currently she is addressing her research in the area of Knowledge Management and Semantic Web with application to geographic domains. Her research interests are: Visual Data Mining, Geographic Metadata Analysis, Ontology and Semantic Similarity. She is currently focusing on the design and development of visual and semantic based framework for retrieving multidimensional media such as Geographical data.

## **9. European Umbrella Organisation for Geographic Information, Netherlands (EUROGI)**

The European Umbrella Organisation for Geographic Information (EUROGI) was established in 1994 as a foundation under Dutch law, after a recommendation from the European Commission, who felt the need to have a single entity to deal with geographic information matters. EUROGI an independent, non-governmental and not for profit organization which represents the European Geographic Information (GI) community, focusing principally on its usage and the user's perspective. The mission of EUROGI is to maximize the effective use of geographic information for the benefit of the citizen, good governance and commerce in Europe and to represent the views of the geographic information community. EUROGI achieves this by promoting, stimulating, encouraging and supporting the development and use of geographic information and related technologies. The membership structure has been based on unique national representatives assured by the National Geographic Information Associations and their networks, comprising

currently 20 countries of which 19 are European Union member states, through whom EUROGI reaches more than 6 500 organisations across Europe.

**João Geirinhas** is the Secretary General of EUROGI. He is an Environmental Engineer certified in Urban and Regional Planning and holds a post graduation degree in Geographic Information Systems (GIS). He offers a record of GI related activities, namely with Non Governmental Organizations, comprising management experience and expertise on cooperative processes, international relationships and organisational issues. He has worked on a variety of projects in urban planning and natural resources management, which gave him knowledge in demography, statistics, spatial databases, information processes, comprehensive management and technology assessment. In 1992 he joined the National Statistical Institute of Portugal (INE) and was elected to the Board of the Portuguese GIS Users Association (USIG), becoming its President from 1995-1999 and again since 2003. He has strong links with the New University of Lisbon (UNL), the Portuguese - American Development Foundation (FLAD) and was a key player in the launching of GIS PLANET.

**François Salgé** is an Executive Committee member of EUROGI and the Convener of its Working & Advisory Group (WAG) on Datasets. He is a well-known figure in Geographic Information Systems (GIS). During his years at the Institut Géographique National (IGN), the French national mapping agency, he led the development of the French GI reference data. He also contributed to shifting IGN from a map maker to an information provider. He was MEGRIN's first Executive Director and President of the European standards organisation, CEN's GI Technical Committee. He is at present Secretary General of CNIG, France's National Council for Geographic Information and an active member of AFIGÉO. Mr. Salgé is a key player in INSPIRE.

**Dr. Sandro Gizzi** is the Director of the Working and Advisory Group "Dataset" of EUROGI. From 1975 to 1990 Sandro Gizzi has been working with Telespazio, in their Remote Sensing Division, heading the Remote Sensing Application Unit and, later, the GIS Unit, being responsible for several large scale Remote Sensing and GIS projects in different application areas. From 1991 to 1998 he has worked with ESRI Italia, first as their Operational Director, then as their Managing Director, contributing to most of the major GIS projects in Italy. From 1998 to 2004, back in Telespazio, he has acted as their Senior Scientist in the GIS area, providing marketing and technical support to the Company divisions with regard to the identification of user needs and the ideation, design and implementation of innovative, large scale project based on the integration of telecommunication, and GIS technology, including Internet GIS portals, activities which he still continues with them as a freelance consultant. He has delivered many scientific and technical papers in national and international simposia and conferences, taught in short courses for several Italian and international organizations and has been responsible, as a contracted professor, for University of Rome and University of Venice GIS courses.

## **10. Fraunhofer Institute for Open Communication Systems (FOKUS)**

The Fraunhofer Institute is the largest public European Research, development and Innovation organization in the field of security and Information and Communications technologies. The Fraunhofer institute FOKUS based in Berlin with its more than 180 employees is researching and developing mobile communication systems in wireless and wired networks. FOKUS engineers the modules that enable the complete seamless integration of technology with end devices and the deployment of open flexible communication services and applications. FOKUS is actively engaged along the whole line – from generating future-proof solutions, technology assessment, method validation and standardization support to project management, quality control, and the development of prototypes and operational / security concepts. In December 2004 FOKUS opened the Fraunhofer FOKUS eGovernment Interoperability Laboratory with more than 20 industrial partners, including IBM, Microsoft, Oracle as well as several administration application vendors. The laboratory aims at becoming a competence center for testing the interoperability of platform technologies and applications and at setting up an eGovernment reference infrastructure. Fraunhofer FOKUS contribution in the Thematic Network on geographic information will offer the partners a view into its interoperability laboratory to test the inter-working of heterogeneous geographic information platforms for internet communities and portals, web-based information and knowledge management systems, content and community management applications. It is possible to test interoperability of the technologies and products provided by the network in model scenarios.

**Petra Hoepner** is a senior scientist and R&D project leader at Fraunhofer Institute FOKUS. In this function she is concerned with project management, co-ordination and technological development in various projects with a focus on eGovernment. She has successfully led several European and national projects at FOKUS, is the project manager for the EU @LIS project eGOIA that demonstrates eGovernment services in Brazil and Peru, was the technical manager of the EU-IST-HARP project (IST-1999-10923) and is member of the body of experts for „Standards und Architectures for eGovernment Applications (SAGA)“ of the German Federal Government Co-ordination and Advisory Agency for IT in the Federal Administration (KBSt), located within the Federal Ministry of the Interior. She is also involved in confidential industrial projects on identity management. Her research interests include risk, security and trust in distributed processing environments and service architectures, identity management, Intra- & Internet security, as well as security for eGovernment, telecommunication and electronic commerce applications and services. Petra Hoepner works since 1990 for FOKUS. Prior to coming to FOKUS, Ms. Hoepner worked between 1981-1990 as a system specialist at Nixdorf Microprocessor Engineering GmbH. She received her Diploma in Computer Science from Technical University of Berlin in 1980.

**Matthias Flügge** has received a German diploma degree of computer science from the Berlin University of Technology in 2001. Since then, he has been working at the Fraunhofer Institute for Open Communication Systems (FOKUS), currently at the Competence Center for Electronic Government (ELAN). He has managed several national and European projects which were concerned with architectures and service platforms for the support of virtual organisations. Matthias Flügge has published several scientific papers in national and international journals and conference proceedings and has contributed to European expert networks including COCONET (Context-aware Collaboration Environments) and the Knowledge Web Network of Excellence. Matthias Flügge has a teaching position at the Technical University of Berlin where he offers several courses concerning the application of Web services in eGovernment and eCommerce. Through his current work in the European research project SATINE Matthias Flügge is engaged in the application of Semantic Web technologies for ontology-based service interoperation and composition.

## **11. Fraunhofer Institute for Computer Graphics, Germany (FHG-IGD)**

Fraunhofer IGD focuses on the development of product prototypes (hard- and software) and the realization of concepts, models, and solutions for computer graphics and its adoption to specific application requirements. The work is rounded off by object-oriented basic research projects and the realization of single devices and computer graphics systems with pilot character (e.g. virtual and augmented reality, mobile computing, and security technologies). Three of the major subjects, Fraunhofer IGD is dealing with are industrial applications, animation and image communication as well as graphical information systems, with the focus on spatial and geographic information systems. The tasks of the Graphic Information Systems (GIS) Department are research, development and services in the field of Graphic Information Systems, especially on 3D GIS, Location-based Services and Geo- & Metadata-Services. The activities cover research as well as end-user and producer-relevant services. The department has broad experience in the execution of national and international projects. FHG-IGD acts as co-ordinator of the GMES project HUMBOLDT and is one of the main partners in technological and scientific work of the project.

**Daniel Holweg** has been heading the Graphic Information Systems department of Fraunhofer Institute for Computer Graphics (Fraunhofer-IGD) since 2003. His research activities lie in the domain of GIS based visualisations in mobile environments, open distributed environments and information management. Within this domain he is author of several scientific articles and organiser of workshops for related topics. He is working as a scientist at Fraunhofer Institute for Computer Graphics since 2001. Since 2003 he is Vicepresident of German Umbrella Organisation for Geoinformation (DDGI) and since 2004 he is member of the Executive Committee of European Umbrella Organisation for Geographic Information (EUROGI). Daniel Holweg was involved or even coordinates different national and international research and development projects, like INVISIP (IST-2000-29640), WIDE (IST 2001-34417) and in October 2006 started GMES project HUMBOLDT.

## **12. Association on Geographical Information Systems and on Geographical Information, Italy (GISIG)**

GISIG is a sectoral non-profit association on Geographical Information Systems (GIS) and on Geographical Information (GI). Its member organisations from more than 20 European Countries are universities and research institutions, GIS technology suppliers, local bodies and companies operating on territorial subjects. GISIG has a long record of experience in the areas of GIS, both on tools and on their applications (territorial planning, agriculture, technological networks and water resources, environment, regional development, ...), with an interdisciplinary approach. Since the last years the Association has also dealt with the organisation of several conferences in these areas. European projects co-ordinated by GISIG include, for instance, the IST project NATURE-GIS, selected as one of the INSPIRE demonstration projects. Furthermore, GISIG's representatives participated in many European GI meetings contributing to the development of the GI Community at the European level and to the European Geographical Information Infrastructure, including INSPIRE. A particular emphasis is working with users, who participate in GISIG's thematic networks, in the areas of environment, water management, integrated coastal management and nature conservation. GISIG is also Member in the EGIN-European GI Network, an informal network of the existing European networks in Geographical Information. Within eSDI-Net+ the interest of GISIG is mainly addressed at the assessment of common problems as well as at transferring the project results within the User Communities, also with the support of eSDI-Net+ Guidelines and through best practice exchange. GISIG will also support the network enlargement process.

**Giorgio Saio**, Coordinator and legal representative of the GISIG Association, Graduated in Electronic Engineering. He is in particular in charge for the networking activities and the promotion of new initiatives of the Association. He is also in charge for the GISIG activities within the projects co-ordinated or participated as partner by the Association, within various European Programmes (e.g. IST, EESD, GMES, Marie Curie, Leonardo da Vinci). As representative of the Association, he participates in various GI European and International meetings and he is in charge for the organisation and Chairman of sessions of European conferences and workshops organised by the Associations. Among other appointments, he was member of the Executive Committee of EUROGI (European Umbrella Organisation on Geographical Information) and of the Scientific Committee of the GEIE "Route des Hautes Technologies de l'Europe du Sud".

## **13. Hungarian Association for Geo-information (HUNAGI)**

The Hungarian Association for Geo-information is a Non-profit, interdisciplinary umbrella association which consists of 113 member institutions and organisations. HUNAGI runs 8 countrywide projects and has at the moment 46 students from 14 universities, colleges and 1 gymnasium. The mission goal of HUNAGI is to promote, stimulate, encourage and support the development and use of GI and its associated technologies and to strengthen the institutional links between the multidisciplinary GI communities in Hungary and in abroad. Objectives of HUNAGI is build up contacts with national GI associations. HUNAGI is active in facilitating the implementation of the National Spatial Data Infrastructure by networking, knowledge transfer and information dissemination Domestic level: National Information Society Strategy & Implementation (MITS) , Strategy for the implementation of the National Spatial Data Infrastructure. On a European level HUNAGI took part in EU Framework Programmes, European Spatial Data Infrastructure (INSPIRE), Public Sector Information, GI Network in Europe, i2010, GMES and GALILEO, UNECE WPLA, FAO SEUR Close collaboration with EUROGI, EuroCadastre, EuroGeographics, GISIG and European Institutions eg. DG JRC, InfSo, Envi, Eurostat, EEA, Research HUNAGI members are linked with EuroGeoSurvey, AGILE, EuroSDR, EFITA and others. Recently HUNAGI was appointed by the SDI stakeholders in Hungary to act as National Coordination Office for the United Nations SDI. HUNAGI is active in WAGs of EUROGI Member of the Board of Directors of GSDI (2004-2007), INSPIRE SDIC for DG JRC and Corresponding member of the National GEO Board since 2006.

**Gabor Remetey-Fülöpp**, graduated at the Budapest Technical University. He spent 16 years in CAD at VIZITERV and in digital processing of EO data at FÖMI Remote Sensing Center. Received scholarships in the Netherlands (RWS, ITC, DUT), India (SAC, NRSA) and at the European Commission. Retired as senior counsellor at the Department of Land Administration and Geoinformation of the Ministry of Agriculture and Rural Development in 2006. His challenging and intensive activities included application-oriented R+D in

RS, GIS and LIS with special emphasis on Cadastre; EU accession-related institution building and fostering international cooperation; NPOC representative to the European Space Agency's Earthnet, President of ISPRS Commission VII "Resources and Environmental Monitoring, ISPRS WG "Human Settlements and Impact Analysis" and "Spatial Data Infrastructure". Secretary General of the National GI Association (HUNAGI) since 1994. Other past and present positions include ExCom of EUROGI, Director, EUROGI's WAG on Int'l Affairs, Secretary, Board of Directors of GSDI Association, CEOS WGISS-GSDI liaison, Bureau of UNECE WPLA, Member of EC INSPIRE Expert Group (2001-2006), Permanent Committee on Cadastre in the EU and the Hungarian National GEO Board. He is recently appointed as national coordinator for the United Nations Spatial Data Infrastructure activities.

#### **14. Research Institute for Artificial Intelligence "Institutul De Cercetari Pentru Inteligenta Artificiala, Academia Romana", Romania (ICIA)**

The Research Institute for Artificial Intelligence has been established in 1994 to conduct basic research in artificial intelligence and to promote international scientific research. It has a core of permanent staff (22 persons, 10 of them being experienced researchers), affiliates (10, out of which 5 are reputed scientists from abroad) and a variable number of temporary (contract-based) collaborators, mainly MSc. or PhD. students. The main research projects of the Institute are in the areas of natural language processing, machine learning and knowledge acquisition, computer-aided instruction and structural-phenomenological modeling.

Based on a new expertise, at the beginning of 2003 the Institute completes his activities under coordination of Dr. Math. Angela Ionita, with a new research group covering the study of GI management. Focus is the discovery Geographic knowledge (Geographic knowledge discovery using diverse data types, User interfaces for geographic knowledge discovery, GeoData mining, Semantics of GeoData) and GeoData in Intelligence Communities (GeoData analysis, Development of facilities to promote sharing, flow and communication of information, Technological transfer, Education and training, Infrastructures for GI, Social impact of GI and GI Technology).

The activity of this research group based on the experience gained by participation in national and international projects such as: WELL - GIS (West - East Linked Laboratories on GIS); EU-PHARE, "Romania Workstation Software: Cadastral System Design and Implementation", PANEL - GI (PAN European Linkage for Geographic Information), ABDS for the CEEC (Administrative Boundary Data Services for Central and East European Countries), "Data Mining Technologies and Image Processing: Theory and Applications".

**Dr. Math. Angela Ionita** is the Scientific Director of the Research Institute for Artificial Intelligence of the Romanian Academy and Senior Researcher I. The research interests are in the fields of GI/GIS management, GeoData in Intelligence Communities, GeoData Semantics and Interoperability, Techniques and algorithms for geographic knowledge discovery, e-Education and training. Dr. Angela Ionita worked in different R&D projects at national and international level as Senior Programmer for RDBMS (Relational), Intergraph GIS Technology (MGE. Microstation, GeoMedia) and as Senior Analyst using SSADM, MERISE, RACINE methodological approaches. She is member of Romanian Interministerial Group for implementation of INSPIRE, coordinator of Web services sub-group. Angela Ionita is representative of Romanian Mirror Group in Technological Platform ARTEMIS. She coordinated the works developed by Romanian team in different international projects. Dr. Angela Ionita and her colleagues developed software for: "Geographical Databases Systems", "National Railways Infrastructure – Pilot Project", "Information center for public administration", "Pilot system of kiosks for the information of the citizens based on Geographic Information", "Pilot Project for eLearning", "Information Systems and Tools for Ecosanogenetical Studies", "Integrated Technological System for Distance Learning in GIS". She has been involved at national level in the team who formulated the technical recommendations for: "Strategic planning for the public administration institutions ", "National Register of Romanian Cadastre", "Pilot Project "County on Line", "Democracy on Line", "Public Information Management". At the National level, Dr. Angela Ionita has been the coordinator of different objectives from the National Plan for Research.

Dr. Angela Ionita has been involved as expert in different European projects. She is author of more than 70 articles published in international journals, volume proceedings, author of more than 60 Technical Reports and author of 2 books, coauthor of 3 books and editor coordinator for 2 books and she translated and adapted 1 book (from English to Romanian). Dr. Angela Ionita has been involved in teaching activity as Associate

Professor for DBMS, Programming Languages and Software Engineering, Databases Management Systems and Project Management and GI Management in Public Administration.

### **15. Intergraph CR spol. s r.o., Czech Republic (INGR)**

Intergraph is the world leader in delivering software and services for the management and visual representation of complex information. Our commitment to the customers and markets we serve, history of innovation, and proven solutions span 35 years. Governments and businesses in over 100 countries around the world rely on our technology and services to support better and faster operational decisions. Intergraph has offices in 60 countries, enabling it to support globe-spanning multinational corporations, as well as local business and government customers. Headquartered in Huntsville, Alabama, Intergraph employs 3,700 professionals across 60 countries and is traded on the NASDAQ market under the symbol INGR. Intergraph Czech Republic is responsible for both direct and indirect sales in the Czech Republic, Slovakia, Hungary, Romania, Bulgaria, Croatia, Slovenia, Bosnia and Hercegovina, Albania, and Yugoslavia. Intergraph CR together with partners has implemented several nationwide geospatial projects in Slovakia, Romania and Hungary financed by EU and the World Bank. With more than 20 employees Intergraph CR is the national leader on the field of open web services and interoperable geospatial solution. Main application fields includes forestry application (data warehouses, decision support applications), National mapping agency – web services and business module for basic topographic data distribution and delivery, cadastre solutions, and reference projects for geospatial resource management in utilities (gas, energy, and water companies).

### **16. Kuovola Region Federation of Municipalities, Finland (KRF)**

The Kouvola Region Federation of Municipalities is the only voluntary Federation of Municipalities in Finland to carry out versatile regional cooperation. The Federation was established in 1994 on the basis of voluntary decisions of the 7 municipalities in the Kouvola region. Municipalities in the Kouvola Region have allocated the Federation of Municipalities following operations: business development, land use planning, waste management, vocational training and coordination of municipal cooperation. Its Department of land use planning's responsible for master planning on the whole Kouvola region. Duties also include tasks relating to traffic infrastructure and urban structure, social housing including financing, spatial modelling and spatial probability, development of GIS systems on the region and system for optimising the geographical locations of services.

*Mr. Hannu Koverola* is the Planning Chief, Kouvola Region he has developed over 20 years of experience of leading positions in land use tasks. From 1976 – 1979 he worked as Civil Engineer (Real Estate) for the Town and Coverment office in Kokkola. From 1982-1989 he was Manager of Business at Soil and Water Ltd. and Consultant and Entrepreneur. Following that activity, in the years 1990-1996 he was Chief of Town Planning at the Town of Kuusankoski. Currently he is working as Planning Chief at the Kouvola Region Federation of Municipalities with special responsibility for land-use planning, housing, traffic, and provision of local information.

### **17. Linköpings Universitet, Department of Computer and Information Science, Sweden (LIU-IDA)**

At Department of Computer and Information Science (IDA) Linköpings Universitet (LiU) we have research on several activities concerning Information technologies like Geographical Information Systems. Some application areas are within Transportation, Location based services, Environment and Health and introduction of IT/GIS for monitoring disease patterns and analyse them with respect to geographic, demographic and socioeconomic factors as well as different environmental impact as metals, radiation and chemicals. The research also involves communication and transfer of information between individual users, as well as organisations and the development of supporting infrastructures. Within GIS we are members of Association of Geographical Information system Laboratories in Europe – AGILE and the network of Excellence – GMOSS with the focus on developing IT support for response to humanitarian crises. In projects concerning Ambulance care and rescue services we have the focus on mobile IT/GIS that is sustainable also in case of major catastrophes. The division for Human Centered Systems (HCS) is a

multidisciplinary research unit within the Department of Computer and Information Science. The research and education is primarily focusing on human cognitive abilities and human interaction with information systems. Major research areas are multimedia, language technology, knowledge-based systems, information handling, visualization, interaction design, service design, geographical information systems, health informatics, and cognitive systems engineering. The section consists of five research groups where the GIS group is one.

**Åke Sivertun** has a Ph D. (Human Geography) University of Umeå, Sweden, December 1993., Ph Lic. (Thematic Reserach) University of Linköping, Sweden, May 1990, B.A. (Social Science) University of Örebro, Sweden, 1983. He is Ass professor in GeoInformatics, IDA, LiU since 1998, Project co-ordinator Distance GIS PBL-based distance education on the web, and Project co-ordinator National PhD and tutor Network in GIS, Knowledge and Competence foundation, KKS, Sweden, from 2000, and from the Swedish Emergency Management Agency (SEMA) and Swedish Rescue Service Agency (SRSA) about GIS in Emergency management. Swedish member in the IGU commission on GISc 2004-2008.

## 18. Regione Piemonte, Italy (PIEMONTE)

Regione Piemonte is one of the largest regional authority in Italy (8 Provinces, 48 Mountain Communities, 1206 Municipalities), very active in the field of Geographic and Environmental Data harmonisation and quality; it will support the Thematic Network by involving two complementary and strategic area (the Environmental Protection and the Territorial information System Departments) and by contributing with the following competencies:

- A regional telecommunications network called “RUPARPiemonte” (Regional Unified Network for the Public Administration) that provides interconnection and value added services to the local administrations and the ongoing implementation of the RUPAR2 programme, a plan to extend the RUPAR to provide the whole regional territory with broadband connections and new on line value added services for the local public administration and private companies.
- Expertise in software development for the management, application and consultation of Spatial Data in GIS Environment for natural and environmental resource management and in developing Geographic Information System (GIS).
- Local Spatial Data Infrastructure know how, having realised the SITAD project (Sistema Informativo Territoriale Ambientale Diffuso), developed by the GIS department to facilitate the co-ordination of public sector organizations to collect, manage, distribute and re-use spatial-data.
- Research expertise developed in other similar Community initiatives (INSPIRE, 6th Framework Programme)

**Mrs. Lucia Brizzolara:** working since 1980 in Regione Piemonte and Executive since 1989, she is Responsible of the Environmental Information System and Environmental Impact Assessment Section of the Department for Environmental Protection. She is involved in the fields of environmental education and scientific dissemination, by providing active collaboration and dissemination with Education Institutes, Public Authorities and Associations. She has supervised the production of administrative, technical and scientific documentation related to training courses for environmental professionals and the production of numerous large territory-environmental databases and geographical information systems. Besides she is responsible for designing and implementing the “The knowledges system on the Environmental professions” that directly follows the “TREAT” European project.

**Mr. Luigi Garretti,** working since 1978 in Regione Piemonte and Executive since 1989, is Responsible of the Territorial Information System Department: he dealt with the town and city planning tools approval procedure on municipal basis and with the plans storage structuring.

He is currently carrying out the role of technical coordination in the development of the geographic information system SITAD (Environment Territorial Information System of the Piedmont PA) and in the setting up of shared GIS systems and applications (where particular attention is devoted to meta-dating process of geographic information, as well as to its dissemination both at local, national and European level

## 19. SADL Katholieke Universiteit Leuven R&D, Belgium (SADL)

The Spatial Applications Division Leuven (SADL) is a R&D division of the Katholieke Universiteit Leuven (K.U.Leuven) in Belgium. It is operating under the K.U.Leuven Research & Development Office. The purpose of K.U.Leuven R&D is to promote the introduction of academic know how in civil society. SADL was set up at K.U.Leuven to manage and further develop the applied research, vocational training and consultancy activities in the field of Geographic Information Systems (GIS), Earth Observation and more recently Spatial Data Infrastructures (SDI). Currently the division has 18 staff members from different disciplines which all have expertise in GI and/or EO technology.

**Mr. Danny Vandebroucke** obtained a MSc-degree in Geography from the Katholieke Universiteit Leuven, 1983. He worked as a researcher at the Institute for Land and Water Management of the same university between 1986 and 1993 in the field of Geographic Information applied to soil science and land evaluation. He (co-)authored several publications and lectured several GI and GIS courses since then. He is co-founder and member of the Management Board and the Executive Committee of SADL/K.U.Leuven R&D. He was involved since 1993 in several GI projects at the local, national, and European level. He was reviewer of the 5th FP STATLAS project in which emerging standards and protocols were used (XML, GML, GESMES). He initiated and is currently leading the study "Spatial Data Infrastructures in Europe, State of Play" within the framework of the INSPIRE initiative. Since 1998, he also acts as an international GIS expert for the Food and Agriculture Organisation of the United Nations. His specific fields of expertise relate to the implementation of the latest GI technology in organisations including issues like database design, standardisation, spatial analysis, and economical and organisational issues. Since May 2005, he is elected member of the AGILE Council. He is also member and co-chair of the INSPIRE Drafting Team on Monitoring and Reporting.

## 20. The South East European Research Centre, Greece (SEERC)

The South East European Research Centre (SEERC) is a multidisciplinary, international, non-profit research centre and think tank founded jointly by CITY Liberal Studies (Thessaloniki, Greece) and the University of Sheffield (UK). SEERC's mission is to support the sustainable, long-term political, economic, and social development of South Eastern Europe (SEE) by conducting pure and applied research and policy analysis in and for the region. SEERC is organised around four Research Tracks: i) Information Technology Development and IT policy in the region ii) Social and Political Issues pertaining to EU Accession iii) Economic and Business Activity in the region iv) Regional Cultural Context. SEERC actively collaborates with major Research, Government Institutions and with businesses across the whole region. Utilizing its strong network in the Balkan region and Europe, SEERC will ensure proficient spread of project activities and will be deft to exploit opportunities for dissemination and cooperation with main GIS stakeholders. SEERC has significant experience in organizing regional and international events e.g. the International Workshop on e-Government and its Spatial dimension in Sofia in June 2006.

SEERC has access to geographical data providers through its extensive network in Greece and the other South Eastern European countries. SEERC will contribute to the work of e-SDI-Net+ through the work of its dedicated Research group on GIS.

**Dimitris Ballas** is a Lecturer in Geographical Information Systems (GIS) at the University of Sheffield. He has a BSc in Economics (University of Macedonia, Thessaloniki, Greece), a Master of Arts (with distinction) in Geographical Information Systems (University of Leeds, UK) and a PhD in Human Geography (University of Leeds, UK). He is currently working on a 2-year research fellowship project (funded by the UK Economic and Social Research Council) investigating the geographical distribution of happiness and well-being under different government policy scenarios. He has also recently been involved in large research projects funded by the Irish Government, the Joseph Rowntree Foundation, the Welsh Assembly Government, Leeds City Council, BT, the UK government Office for the Deputy Prime Minister (ODPM) and the UK government Department for Transport (DfT). He is the lead author of the book "Geography matters: simulating the impacts of national social policies" and a co-author of the book "Post-Suburban Europe: Planning and Politics at the Margins of Europe's Capital Cities". He has over a dozen papers in peer-reviewed international academic journals and edited book chapters and over 40 conference papers.

**Dr. Drandis** is a Lecturer in Computer Science and Course Director of the MSc in Software Engineering and Telecommunications in CITY College, Thessaloniki. Dr Drandis's interests are in the areas of Software Engineering, Service-Oriented Computing, Formal methods, and Artificial Intelligence. His PhD investigated a framework for the formal specification and design of neural networks. He is currently interested in investigating software development methodologies, service-oriented technologies, object-oriented technologies, and agile formal methods. He is also a Research Associate in the Technological Institution of Thessaloniki, where he has taught Information Systems, Neural Networks, Software Quality and Reliability, and Programming Methodology. As a guest lecturer, he has taught Artificial Intelligence in the Department of Applied Informatics at the University of Macedonia.

## **21. The University “Jaume I” (King James I), Spain (UJI)**

The university was established in 1991 and has become a medium-sized (15,000 students) research university serving the northern province, Castellón, of the community of Valencia. The combination of generous FEDER contributions, providing for cutting-edge infrastructure, and top-level political support (the current rector of UJI is a Computer Science professor), has made UJI one of the more innovative campuses in Spain. The university's location in the heart of the Valencia tourism region, as well the nation's largest ceramic tile production region (300+ factories), provides a wide array of research project opportunities for the use and application of geographical information.

Within the Information Systems department, the Centre for Interactive Visualization collaborates with the Computer Vision, Distributed Computing and Systems Integration groups on topics similar to that proposed here. Among the group's specialities are 3-D modelling of terrain, data compression, Web Service Composition, web mapping, Spatial Data Infrastructures (including metadata search and retrieval systems), and XML data encoding of spatial data. The group programs mostly in Java, and also specializes in Open Software integration alongside commercial software options. The group is an active participant in the Open GIS Consortium standards organization, and recently has created on-line conformance test engines for OGC services (WMS, WFS). Principal investigator Gould is actively involved in high-level geographic information initiatives across Europe and internationally.

**Dr. Michael Gould** (PhD, State University New York-Buffalo) is tenured associate professor (senior lecturer) in the Department of Information Systems at UJI, where he teaches Informatics, GIS, and Information Systems Projects. He has been technical project manager for several publicly-funded RTD projects including ESMI (INFO2000), GeoIndex (Esprit, Software Engineering), GIGA (Alfa, DG-I), ACE-GIS (IST-2001-37724) and Spain Spatial Data Infrastructure (Spanish Ministry of Science and Technology). Additionally, Gould has served as external consultant for several GIS-related companies and is permanent external consultant to OpenGIS Consortium (and OGC Europe Ltd.). (<http://inspire.jrc.it>), and the related national standards groups in Spain.

**Dr. Joaquín Huerta** is associate professor in the same department, where he teaches CAD/CAM, GIS, and Internet Technologies. In addition to academic activities Dr Huerta is founding board member of an Internet service provider and, thus, possesses considerable business experience as well as experience in systems integration.

**Dr. Carlos Granell** has an engineering degree in Computer Science from UJI and a PhD from the same university, having recently defended his dissertation research in web service composition. He is a full-time research associate and was a major contributor to the ACE-GIS (IST) project, and now the AWARE (GMES) project.

## **22. University of Rome “La Sapienza”, Italy (URS)**

The Department CAVEA / LABSITA (Laboratorio di Sistemi Informativi Territoriali e Ambientali) was founded about 10 years ago and is part of CAVEA, which is a department of the First Faculty of Architecture “Ludovico Quaroni” at the University of Rome La Sapienza. The Laboratory performs research studies, applications and education on advanced techniques of GI (GIS, SDI, Data Modelling, Remote Sensing, Image Processing, IT, etc.) applied to the analysis, planning, monitoring and management of environment, territory, natural and cultural heritage and agricultural resources. Masters thesis about GIS are currently carried out in the Laboratory. LABSITA is a founding member of AGILE, member of the network

GISIG and the EU project LEONARDO. The department has organised jointly with AMFM Italia the first Italian workshop on interoperability and SDI and has organised jointly with AM FM Italia, OGC and ESA the first Italian “OGC interoperability day”. Following its involvement in the INSPIRE EC initiative LABSITA has produced the green paper "Proposals for actions oriented to the realization of SDI for the Local Authorities" addressed to Italian public and private context. LABSITA is a founding member of SDIC MORE for helping to define implementation rules for Monitoring and Reporting the implementation of the INSPIRE Directive.

**Prof. Mauro Salvemini** received a Laurea in Ingegneria Civile (Civil Engineering) from the Università degli Studi di Roma (1972). He is currently researching and teaching at the Università di Roma "La Sapienza". He is also in charge of the LABSITA (Laboratory of environmental and land information systems). He is Chairman of the Council of AGILE (Association of Geographic Information Laboratories in Europe). He is Chairman of AM-FM (Automatic Mapping and Facilities Management) and on the board of directors GISIG (GIS International Group). He is the Italian representative in the EUROGI ([www.eurogi.org](http://www.eurogi.org)) Executive-Committee. He has carried out several scientific and technical researches in the field of urban and regional planning, environmental planning and analysis and quantitative techniques applied to the socio-economic and physical data of human settlements and environment.

### **23. Università TELMA, Italy (TELMA)**

TEL.M.A., an On-Line University, was established in 2004 and accredited and recognised by the Italian legislation system. The economics and law faculty is involved in both research and development as well as didactical activity with particular reference to the “Technology Information Society”. The Academic year 2005- 2006 offers the following degree courses: Bachelor Degree in “Economics and management of audiovisual”, Master Degree “Law and E-commerce”, Master Degree “Geographic Information Systems of Public Administrations

**Prof. Donato Limone** is full professor of IT Law at the University TEL.M.A. (Rome), Director of the post-graduate course in Geographic Information Systems in Public Administrations at the University TEL.M.A. (Rome), Director of the post-graduate course in IT Law at the University of Lecce; Director of the post-graduate course in IT Law at the University LUMSA (Rome). He is Coordinator of the Committee that drafted Italian rules of law for electronic documents and electronic signature, Member of the Committee in charge of the Italian Electronic ID Card legal and technical rules, Member of several ministerial, inter-ministerial and local Public Administration committees on IT applications in the Public Administration.

## **9 Contribution to programme objectives**

The proposed project will contribute to “achieving interoperability between national digital collections and services (e.g. through common standards) and facilitating access and use of the material in a multilingual context” (which are core objectives of the programme). The network will create better conditions for accessing, using, reusing and exploiting digital GI. It will help GI stakeholders realise the full potential of digital GI: content providers will be able to increase the use and reuse of their material; content users will be able to find and use digital geographical data, irrespective of location and language.

The proposed network, involving the major kinds of stakeholders and ensuring a very wide European coverage, will support the European running policy and initiatives addressed to “achieve interoperability between national digital collections and services (e.g. through common standards) and facilitate access and use of the material in a multilingual context” (which are core objectives of the programme).

That is one of the positive impacts of establishing a Thematic Network as communication and exchange platform between different stakeholders involved in SDIs’ creation, bringing together the SDI key players and target users nowadays clustered by application fragments that allow only a limited perspective hampering a wider and more effective use of GI. Moreover the liveliness of the Network that is open and able to include new partners along the time ensures a good capacity of developing the ability to deal with the newly arising needs and challenges.

Further than a greater technical efficiency this co-operation platform will allow also to address multicultural and multilingual aspects in accessing, exploiting, using and re-using digital GI content in Europe, thus

contributing to break the major barriers that presently prevent to implement such process, also establishing close connections with major stakeholders, in particular local and regional authorities. For such reason these bodies are already directly and indirectly represented in the Network, on one side as owners and/or producers of a great part of the “core” GI in Europe, on the other side as able to represent the major link to policy and citizens at all levels.

A great help in facilitating the access to GI content, use and exploitation can in fact come by creating the proposed long-lasting, collaborative, experienced network that is able to aggregate a critical mass of regional SDIs as well as of SDIC's and European GI stakeholders. It is an enrichment to be pursued with semantically well defined metadata and web services able to actually implement a collaboration policy.

A major output will be the improvement of trans-regional data services connectivity and interoperability through the promotion of technical harmonisation of GI data content across Europe, as it can be achieved by organising thematic data in a coherent manner. At this aim the metadata will be identified able to allow discovery and search using terms which can be understood in different languages and by different user communities.

The data harmonisation process for all the groups of stakeholders will be enabled by using state-of-the-art technologies and developing new methodologies and strategies. Technical interoperability is in fact required as the common ground on which to combine and to synthesise digital geographical data from a wide range of sources, with the long-term goal to provide truly operational services of the designated quality across large geographical areas, continuously performant, available and reliable.

A viable technical approach will not only stimulate the creation and collection of GI data by providers but also their use and re-use not only by owners but mainly by European individuals and non specialised organisations, both public and private.

In fact, as already underlined, with the growth of Internet and Web-based technologies, users expect to simply discover and access to cheap or free data in simple standard formats that can be used in desktop applications. This approach even if -maybe- too confident, is very important for quickly stimulating an increase in the awareness of the value of GI and its applications and efficaciously answer to a demand and use of GI and related systems that is increasing every year.

Additionally the analysis and identification of good practices available in Europe will enable the sharing of common experiences, problems, solutions and know-how, thus enabling content stakeholders to better realise the full potential of GI digital content.

Finally the European long-lasting collaborative network which will be established will foster the development of GI joint actions, such as geographic data aggregation, through the definition of the eSDI-Net+ cross-border co-operation plan – sustainability plan. This matches with the objective of creating the conditions for the emergence of quality trans-European content-based services and is in line with the need of data harmonisation and development of interoperable services as foreseen by the INSPIRE Directive and other EC policies. We refer to the following Chapter “Community added value and contribution to EC policies” for major details on these aspects.

## ***10 Community added value and contribution to EC policies***

The proposed network, given its geographical coverage, further increased by having in the partnership players representing different actors in more Countries, and the different and complementary typology of stakeholders involved, has the right potential to gather multiple views of experts, knowledge and potential and permits the sharing of standardised integrated approaches and implementation of best practices as well as the concept and design of more efficient operational procedures.

There is substantial added value in European collaboration within the Network as none of the possible players has the critical mass in human or financial terms to undertake the work alone; on the contrary thanks to a networking co-operation process, they complement one another. European collaboration increases access to pooled resources and technology transfer and emulates the ‘global’ marketplace. The Network adds a wider dimension to the work because of better perceived and real problems, within a collaboration and technology transfer between new and old EU countries. The eSDI-Net+ results will be of mutual benefit to old and new EU countries collaborators, trading in both directions.

The communication bi-directional flow to be established between the European and local levels within the Network will contribute to maximise the benefits of current EC policies, mainly INSPIRE, GMES and GALILEO.

The usefulness to carry out the proposed project at a European level is self-explaining given the objectives of the eContent+ Programme. In fact, only through an integrated wide European approach it is possible to reach the necessary critical mass of key stakeholders, both producers and owners of 'core' Geographical Information on one side and user communities on the other side.

The existence of multi-cultural and multi-thematic Interest Groups within the Network will allow consensus on standards, methods and best practices and will enhance the possibility to face those language, knowledge and fragmentation barriers that presently affect the accessibility and usability of Geographical Information and the establishment of SDI's (see also Chapter 1 "Rationale").

The harmonisation of spatial data, as foreseen by the INSPIRE Directive, involves organising thematic data (such as administrative units, transport networks, buildings and land parcels, land cover...) in a coherent model. At the data level coherence ensures that different data sets can be used together. At the data set level metadata must be defined to allow discovery and searching using terms which can be understood in different languages and by different user communities. Only a wide European network can contribute to reach these goals, also at a trans-boundary level.

Additionally, as already described, the project environment will include GI Administrators and Stakeholders, associated projects (particularly GMES projects) and Local Authorities accessed through the GI associations which are eSDI-Net+ partners. Linking these diverse communities will create a significant added value through the exchange of experiences on solutions to common problems and the dissemination of common approaches.

Moreover, we remind the specific Work Package addressed to "Sustainability planning" which is precisely devoted to achieve the project Networking Objective by preparing a future co-operation plan on transnational projects and activities linked to the quality of GI (such as trans-regional data services connectivity and interoperability).

Improving the interoperability of data and services, hence optimising the data and information flows, is one of the main objectives of the INSPIRE Directive, on which also GMES Services rely.

The proposed Network is designed intended to become a powerful tool to contribute to Europe's ability to face new challenges and threats through the open access to information which is of strategic importance for the prosperous development of nations and regions and to provide a strong impact the favours awareness, knowledge and usage of INSPIRE principles. Being conceived as a "Network of Networks", eSDI-Net+ will progressively evolve to a fully integrated network where the benefits of sharing stand-alone data and information from heterogeneous sources, selecting, aggregating and translating them, could be widely understood and appreciated within stakeholders and user communities, together with the opportunity of adopting common standards and specifications. This will also impact on the capability of adopting the current environmental EC policies having a strong territorial impact where a good quality GI plays a fundamental role.

The eSDI-Net+ Project will catalyse the collaboration of many GI market players and foster the development of a Single Market and the achievement of economies of scale. eSDI-Net+ will permit and move forwards the development of digital content in the GI area, one of the most important areas of public interest in Europe. This development will not be possible or will occur at a slower pace, if left to market forces alone.

## ***11 Contribution to economic development and social objectives***

The new efforts in developing services for managing and exploiting geographical information are presently of increasing importance, as demonstrated by EC policies currently in act and aimed at changing the way how data are organised and shared among public authorities and with European citizens.

By participating to such process, eSDI-Net+ could contribute to foster European integration and to enable more coherence in Community policies, thereby promoting sustainable development at all levels.

Policy-makers and authorities at the European, national and local levels will first and foremost benefit from such process, but improved accessibility to public geographical information will also lead to all kinds of practical uses for the general public.

As already underlined in fact, in most national infrastructures government suppliers are key stakeholders and how they act in the development and operation of the data access components of the infrastructure (the functionality of the data exchange tools, the amount and quality of the content accessible, operating policies, infrastructure business model, etc.) directly impact on the consumer or end-user, the citizens in one word.

The availability of high-quality geo-related information through user-friendly access is in fact of public relevance and can have a positive effect on several domains (tourism, public services, etc.) and consequently affect offered services as well as people's behaviour and habits.

It can be therefore argued that new standards for the involvement of the public can be introduced and diffused through the Network, aiding both the subsidiary principle and the democratic involvement of European citizens. Moreover, Network effects that come from more and more data sources being added and processing services being offered can be leveraged to create a unique services area, in the end increasing competitiveness and business opportunities in Europe, also thanks to cross-border public-sector interoperability of data.

Also the research community is very active in the field and is playing a crucial role to define the most appropriate scientific and methodological framework. Through the improvement of data availability and accessibility and the offer of interoperable services, a broader community of researchers from many fields will have a whole new set of services and procedures at their disposal and access to information has always led to new insights in science. This effect will multiply within Europe; research in general will be able to benefit from the improved availability of spatial data and related new tools and methods for their usage in a larger real-world application environment.

When it comes finally to ethical requirements, this proposal implies essentially the accessibility and use of digital data, together with the access to, and dissemination of, best practices and technical solutions. This also involves the creation of awareness about national policies and international regulations which are, by their nature, of public domain. They do not include any attributes that relate to a specific person and thus they are not sensitive in the ethic sense.

## 12 Appendices

### 12.1 Financing Plan

#### Co-ordinator INI-GraphicsNet Stiftung

The own contribution of the INI-GraphicsNet Stiftung consists of the infrastructure of the world-wide INI-GraphicsNet which will be made available for the project and of the overhead costs, which will not be funded by the project.

Source of funding	Amount in Euro
Contribution from own resources	400.000
Contribution by other organisation (to be specified below)	---
Direct revenues expected from the project (to be specified below)	---
Contribution requested from the Commission	729.000
<b>Total</b>	1.129.000

#### Other applicants

eSDI-Net+ is a sustainability driven project: each of the partners has its own interest to achieve the planned results and keep the network alliance alive also after project end. To this respect, it should be outlined that all partners are financially committed to the project, bringing in their human resources and infrastructure covered by their own resources.

#### 2. AGH University, Poland (AGH)

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

#### 3. AM/FM GIS Italia, Italy (AMFM)

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**4. Association for Geospatial Information in South-East Europe, Bulgaria (AGISEE)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**5. Association of Geographic Information Laboratories for Europe, Netherlands (AGILE)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**6. Association USIG (Users of Geographic Information), Portugal (USIG)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**7. Autodesk, Switzerland (AUTD)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**8. Consiglio Nazionale delle Ricerche, Istituto di Matematica Applicata e Tecnologie Informatiche, Unità Organizzativa di Genova, Italy (CNR)**

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**9. European Umbrella Organisation for Geographic Information, Netherlands (EUROGI)**

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	15.200
<b>Total</b>	15.200

**10. Fraunhofer Institute for Open Communication Systems (FOKUS)**

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**11. Fraunhofer Institute for Computer Graphics, Germany (FHG-IGD)**

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	15.200
<b>Total</b>	15.200

**12. Association on Geographical Information Systems and on Geographical Information, Italy (GISIG)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	15.200
<b>Total</b>	15.200

**13. Hungarian Association for Geo-information (HUNAGI)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**14. Research Institute for Artificial Intelligence "Institutul De Cercetari Pentru Inteligenta Artificiala, Academia Romana" (ICIA), Romania**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**15. Intergraph CR spol. s r.o. (INGR), Czech Republic**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**16. Kuovola Region Federation of Municipalities, Finland (KRF)**

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**17. Linköpings Universitet, Department of Computer and Information Science, Sweden (LIU-IDA)**

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**18. Regione Piemonte, Italy (PIEMONTE)**

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	15.200
<b>Total</b>	15.200

**19. SADL Katholieke Universiteit Leuven R&D, Belgium (SADL)**

Source of funding	Amount in Euro
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**20. The South East European Research Centre, Greece (SEERC)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**21. The University “Jaume I” (King James I), Spain (UJI)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**22. University of Rome “La Sapienza”, Italy (URS)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

**23. Università TELMA, Italy (TELMA)**

<b>Source of funding</b>	<b>Amount in Euro</b>
Contribution from own resources	
Contribution by other organisation (to be specified below)	
Direct revenues expected from the project (to be specified below)	
Contribution requested from the Commission	11.400
<b>Total</b>	11.400

## 12.2 Subcontracting

The project co-ordinator envisages allocation of the following specific tasks to subcontractors:

**Involvement of experts:** Senior experts involved in the project activities, such as contribution on the assessment of best practices and GI content related advisory, will be reimbursed for their costs. The involvement of experienced experts is a necessary condition to ensure that eSDI-Net+ is able to adjust to upcoming developments during the project period

**Project office:** Several project office tasks will be subcontracted to third parties, since it is not the core competence of the project co-ordinator and the partners. Such activities will comprise the hosting of the project website, printing of dissemination material and other project office related tasks.

The subcontracts will be awarded to the bid offering best price-quality ratio, under conditions of transparency and equal treatment.

## 12.3 Background and reference documents

### *Background of eSDI-Net+ Establishment*

The establishment of the eSDI-Net+ can be seen as a continuous development, which has its roots in the past and bases on past activities regarding SDI and the development of a European SDI, especially on the implementation of INSPIRE and GMES and a necessary follow-up of the GINIE project.

GINIE was a research project funded by the Information Society Technology Programme of the EU for the period November 2001- January 2004. Its partners were EUROGI, the European Umbrella Organisation for Geographic Information, the Open GIS Consortium Europe representing the Geographic Information (GI) industry, the Joint Research Centre of the European Commission, and the University of Sheffield (Coordinator). The aim of the project was to develop a deeper understanding of the key issues and actors affecting the wider use of GI in Europe, and articulate a strategy to promote such wider use that is consistent with major policy and technological developments at the European and international level. Close attention has been paid to the role of GI in supporting European policies with a strong spatial impact (agriculture, regional policy, transport, environment), e-government, the re-use of Public Sector Information, and the initiative to develop an Infrastructure for Spatial Information in Europe (INSPIRE).

To address the issues identified above, GINIE's final report expressed the case for "continued need to mobilize and sustain the commitment of the whole GI community including stakeholders from government, industry, research, and the European Commission". Whatever the solution that will emerge out of the INSPIRE proposals, strong leadership and a balanced representation of all these stakeholders are a condition sine qua non for instilling and implementing any strategy in Europe. The vision of the GINIE Consortium is that geographic information with all its aspects should become a fully integrated component of the European knowledge-based society. In order to achieve this vision the GINIE Consortium has formulated a European GI Strategy built on the extensive consultation with major stakeholders. It aims to maximize the availability and effective use of GI in Europe for good governance, economic and social development, and informed public participation.

Proposed by the GINIE partners, a strategic consortium (EGIN – European GI Network) representing government, industry and research, and built on the enhanced collaboration among the many pan-European GI related organisations already in place has been informally set up. EUROGI serves as its secretariat. This EGIN has been seen as a way to create greater synergy, and maximise the resources available to achieve the objectives above. The dedication and expertise of all the individuals and organisations that have participated in the GINIE project are one of the true legacies of the project, and the platform from which a better and wider Europe built on shared knowledge and understanding can prosper.

It is now time to consolidate and enlarge the European GI network EGIN to incorporate those stakeholders of local, national and thematic SDI to further develop the existence of networked SDI's within a European SDI (INSPIRE compatible), exchange best practices and contribute to raise the effective use of geographic information for the benefit of the citizens, good governance and commerce in Europe.