



UNGIWG

United Nations **Geospatial Information** Working Group

**UNSDI GLOBAL PARTNERS MEETING
-UGPM Dialogue-**

convened by the

**United Nations Geospatial Information
Working Group
-UNGIWG-**

hosted by the

**European Space Agency
-ESA-**

at

ESRIN, Frascati, Italy

1, 2 March 2007

M E E T I N G R E P O R T



Participants of the UNGIWG-UGPM on 1 and 2 March 2007

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1 Executive Summary¹

The United Nations Spatial Data Infrastructure Global Partners Meeting (UGPM), convened by the United Nations Geospatial Information Working Group (UNGIWG) as agreed by the 7th UNGIWG Plenary Session in Santiago de Chile in early November 2006, took place at the European Space Agency (ESA) Centre for Earth Observation (ESRIN) in Frascati, Italy on 1 and 2 March 2007.

The objectives of the meeting were to brief representatives from Member States on the UNSDI development process and its current status and to engage in a structured dialogue on the institutional, technical and coordination issues facing the development and implementation of a proposed UNSDI in coordination and cooperation with similar developments at national, regional and global level. This gathering built upon the UNSDI discussions held internally within UNGIWG and was meant to explore how a UNSDI would be situated in the context of non-UN SDI initiatives.

82 Participants attended the meeting representing UN Member States, United Nations Agencies, Programmes and Missions, global, regional and national spatial data infrastructure initiatives, a variety of scientific establishments and the private sector.

Numerous and informative “tone setting” presentations related to the UNSDI context: applications context in the areas of humanitarian affairs, global food security, forest resources assessment, environment and transport/logistics; national and regional SDI initiatives; capacities and tools for geospatial information access and analysis; UNSDI vision, strategy and implementation plan; UNSDI coordination offices mandate and activities and possible UNSDI support mechanisms provided a clear understanding of the main potential stakeholders contributions and roles in the UNSDI development and implementation process.

Based on these presentations and participants’ own experiences, suitably composed breakout groups and a Panel Session, comprising selected representatives from UN agencies, Member States, Regional Organizations and potential Partner Programmes identified a series of key issues on:

- institutional and technical aspects related to UNSDI development and implementation process and;
- “the joys and responsibilities of partnering and coordination”.

Following lively and fruitful exchanges of views, experiences and expertises, a set of recommendations for the UNSDI development process of UNGIWG have been outlined.

2 Introduction

Following the 7th Plenary Session of the United Nations Geospatial Information Working Group (UNGIWG) in Santiago de Chile in early November 2006, which reviewed a comprehensive draft discussion document on the concept of a

¹ The UGPM presentations meeting can be downloaded at the following address:
http://www.ungiwg.org/ugpm_presentations.htm

UN Spatial Data Infrastructure (UNSDI), it was decided to convene a dialogue meeting between UN Agencies represented in UNGIWG and SDI authorities from Member States from government, global and regional SDI umbrella organizations, senior representatives from academia and the private sector. This UNGIWG meeting was held on 1 and 2 March 2007, hosted by the European Space Agency (ESA) at its ESRIN facilities in Frascati, Italy. The objectives of the meeting were to brief representatives from Member States on the UNSDI development process and to engage in a structured dialogue on the institutional and technical issues facing the development and implementation of a UNSDI in coordination and cooperation with similar developments at national and regional level. This gathering built upon the UNSDI discussions held internally within UNGIWG and was meant to explore how a UNSDI would be situated in the context of non-UN SDI initiatives.

2.1 Welcome and Opening Address²

Dr. Volker Liebig, Head, ESA-ESRIN, and Director, Earth Observation Programme of ESA, welcomed all of the participants at the Italian Centre of the European Space Agency. Then, highlighting the valuable roles that earth observation play and their operational application in the global climate change “era”, Dr. Liebig reminded the many application projects that ESA is implementing in cooperation and partnership with the United Nations and emphasized the general importance of coordination and intensification of efforts in harmonizing data access and management.

H.E. Mrs. Romy Schmidt, Minister of National Goods and President of the Council of Ministers for Territorial Information of the Government of Chile, expressed the importance for them to participate in this meeting as Chile is beginning a process oriented to strengthen and spread their Spatial Data Infrastructure. In the context of the Millennium Development Goals (MDGs), she highlighted the very important roles that spatial data and geo-information play in the contribution to the well-being of humanity on many fronts; the necessity to speak about SDI at all scales and stressed the importance of human resources development, adherence to international standards, proper documentation (metadata) in the establishment of a SDI and finally reiterated that the Government of Chile is absolutely committed with these main elements and open to any kind of collaboration and cooperation in this respect.

2.2 Opening Statement by UNGIWG Co-Chairs

The UNGIWG Co-Chairs, Jeff Tschirley, on behalf of FAO, and David Kaatrud, on behalf of WFP, first introduced themselves and thanked Dr. Volker Liebig and H.E. Mrs. Romy Schmidt for their Statements. The Co-Chairs highlighted four main topics:

- The history and vision of UNSDI: Since its inception, UNGIWG has been laying the foundations for a UNSDI. The accomplishments of its six Task Groups in particular indicated that expansion and refocusing of current TG activities as well as the UNGIWG organization could deliver the components for such a system.

² The full texts of the Statements are included in Annex I of this document

- The UNSDI vision: UNGIWG now has to go beyond technical issues and start to tackle the institutional and sustainable support issues toward a more holistic view of the UNSDI, actively integrating institutional aspects and to channel the explosive growth of the application of geospatial technologies and practices in a range of UN activities from: peace keeping, humanitarian affairs, environment, economic development, and so forth. Moreover, taking into account the significant SDI developments all over the world, it is necessary for UNGIWG to look externally and actively dialogue with Member States in this context. Regarding the global context, UNSDI has to facilitate tapping into the massive pool of existing geospatial data and information and respond to the requirements of key global governance programmes such as the Climate, Biodiversity and Desertification Conventions, the Millennium Development Goals (MDGs) and other global initiatives. Furthermore, as a way to work in a more integrated fashion in the UNGIWG community and to promote UN system coherence, UNSDI has the potential of contributing significantly to the current ongoing UN reform process “Delivering as One”.
- Human resources: UNSDI is not just about technology and data ... The first users are decision makers, for instance: humanitarian officers in Darfur and Afghanistan; development planners and political leaders in Santiago; New York; Paris, Abidjan, New Delhi ...). The challenge faced is to build up the human resources so that they can use these tools and data to ensure that UNSDI can effectively support informed decision making.
- Objective of the meeting: The business model of today is collaboration, including both cooperation and coordination. We cannot work individually, either as organizations or as countries. The programme of this meeting has been formulated to encourage a dialogue and not just as a UN initiative; it’s about how we can better assist countries in the area of humanitarian affairs, environmental management and protection and development assistance and the challenges we face in meeting those needs. UNSDI and Member States need to work together on issues and priorities. This meeting is a first step in this direction.
- The UNGIWG Secretariat will take the results of the meeting and discuss these internally with the wider UNGIWG membership to further refine its UNSDI implementation strategy.

2.3 Keynote address: “(UN) SDI, Time for a Paradigm Shift?”

Prof. Harlan J. Onsrud, Executive Director of the GSDI Association congratulated the organizers in having had the foresight to bring together potential partners from the private, NGO, scientific and government sectors representatives that help make progress on this emerging UNSDI vision.

Asked to respond to and reflect on some of the opportunities and challenges in pursuing a UNSDI vision, he placed emphasis on the major role that institutional, organizational, people, work culture and policy issues play in the future development of UNSDI and that in pursuing a more coordinated approach, the challenge in providing operational and information system in institutional context is not simply a matter of technology and data. Prof. Onsrud suggested that in pursuing its vision,

UNSDI will need to think about incentives for people to participate, specifying that many effective incentives need not necessarily be monetary-based.

Finally, through a series of ten provocative thoughts, Prof. Onsrud raised the questions of the ultimate goal of the UNSDI vision; the architectural priority of the UNSDI; the best core global dataset; the highest priority web service that almost all UN agencies would want, use, and support; the identification of the ultimate user of a UNSDI; the intellectual property protection; the rules of engagement; the innovative way to fund geo-information capabilities and the potential paradigm shift.

“I hope we come to truly believe that the more we are joining together in helping to build the information infrastructure and that the more we communicate with each other, the more each of us will help solve our own most pressing problems. Applying a million minds to a problem in our new network world, I think is really possible. And by applying million of minds to our most pressing global problem we can actually achieve the MDGs. Working cooperatively and benefiting from each other is the way forward.”, Prof Harlan J. Onsrud.

3 Applications context of the UNSDI development process

During Session 1, the UNGIWG Co-Chairs gave the floor to important geospatial information producers and users dealing with a number of “global issues” in the humanitarian, food security, economic development and environment sphere against the background of the MDGs.

The main purpose of this Session was to outline the status and challenges faced by SDI developments in various application fields and the benefits it can bring to both UN agencies, Member States and Regional Organizations.

	Humanitarian	Food security	Economic development	Environment
UNHCR				
UN-OCHA				
<i>FIVIMS/GIEWS-FAO</i>				
<i>Forestry Dept - FAO</i>				
DEWA-UNEP				
UNJLC				
ESA				

Table 1: Main application fields covered by the presenters³
(see also Table 2 below)

³ Short description of each presenter in Annex II

	Issues	Expectations of a UNSDI
Data & Services	<ul style="list-style-type: none"> ▪ Inconsistent data in terms of content and format ▪ Existence of “invisible” data: not computerized or hidden in local computers ▪ Data access issues (restrictive access) ▪ Confidentiality and sensitivity of certain data and information ▪ Difficulties in implementing data/systems integration 	<p>More efficient search of, and access to data in emergencies: shorter response time, most relevant information is shared and reduction of gaps and duplications</p>
Standards	<ul style="list-style-type: none"> ▪ Need for standardization ▪ Poor application of standards at country level ▪ Limited use of existing standards for data sharing (and lack thereof) 	<ul style="list-style-type: none"> ▪ Active support to implementation of international standards ▪ Certification of spatial data/SDI that adhere to standards ▪ Access to standards and best practices for data collection, analysis and sharing ▪ Standards at international and national levels
Metadata	<ul style="list-style-type: none"> ▪ Lack of extensive and reliable metadata Catalogues 	<ul style="list-style-type: none"> ▪ Standardized Metadata population and the development of catalogue services ▪ Facilitate metadata creation, discover, retrieval and visualization.
Capacity building	<ul style="list-style-type: none"> ▪ Gap between national and sub-national data 	<ul style="list-style-type: none"> ▪ Development of national capacity ▪ Repository of common technical knowledge ▪ Strengthening of GIS/Remote Sensing units within respective agencies
Organizational	<ul style="list-style-type: none"> ▪ Limited human and financial resources for tools development and maintenance ▪ Lack of streamlining of spatial analysis in decision making (outside the responsible units in agencies) ▪ Unproductive competitive practices 	<ul style="list-style-type: none"> ▪ Focus more on governance and sustainability than mere technology ▪ Build partnerships

Table 2: Main issues raised by the presenters on geospatial information management and expectations of a UNSDI

4 UNSDI Vision, Strategy and Implementation Plan

In the context of the current UN reform, the Millennium Development Goals and the UN Charter, Mr. Barry L. Henricksen, Senior UNGIWG consultant for the preparation of the UNSDI Compendium “**A UNSDI Vision, Implementation and Reference Architecture**” and the “**UNSDI Strategy Implementation Plan**”, outlined the various elements of the UNSDI vision, guiding principles and issues of importance to address for the establishment, successful operation and sustainability of the UNSDI.

For additional information on UNSDI vision and implementation strategy, the two following papers can be consulted on <http://www.ungiwg.org/unsdi.htm>:

- UNSDI Compendium: “A UNSDI Vision, Implementation and Reference Architecture”;
- Strategy for developing and implementing a United Nations Spatial Data Infrastructure in support of Humanitarian Response, Economic Development, Environmental Protection, Peace and Safety.

5 Identify commonalities for potential cooperation

Through Sessions 2, 3, 6 and 7 of the UGPM meeting (see Annex VI), Member States, global, regional and national SDI initiatives, UNSDI-related institutions and programmes were invited to present their respective activities in order to identify potential areas of cooperation for the UNSDI development process. These four sessions gave a clear picture of the current implementation status of major regional and national SDI initiatives, of the state of play of current and future capacities and tools for geospatial information management and potential links with UNSDI partner programmes and institutions. Particularly, the recently formally approved INSPIRE Directive of the European Commission for the 27 Member Countries of the European Union was highlighted as a potential model for the UNSDI development process.

		Policies & Organisation					Technical			Capacity building
		Mandate & Legal framework	Communication	Coordination & Partnership	Implementation	Awareness raising	Metadata	Standards	Architecture reference model	
Regional SDIs	Latin America and Caribbean									
	INSPIRE-Europe									
	ICIMOD SDI Asia									
	EUROGI									
National SDIs	Chile									
	Spain									
	Cuba									
Capacities and tools	HMA-ESA									
	UNGIWG-TG4									

		Policies & Organisation					Technical				Capacity building
		Mandate & Legal framework	Communication	Coordination & Partnership	Implementation	Awareness raising	Metadata	Standards	Architecture reference model	Data modelling	
	Scale										
	Global										
	Regional										
	National										
	Not scale-dependent										
	ESA-FAO GEOportal		Global			Global	Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Global
	DevInfo- UNDG/UNICEF						Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Global
	UNOSAT-UNITAR						Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Global
	IVER Information Technologies						Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Global
	GRID-ESA		Global			Global	Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Global
UNSDI- Coordination Offices (CO)	Netherlands	National									National
	Czech Republic	National									National
	Hungary	National									National
UNSDI- related institutions	GSDI		Global			Global					Global
	GEO		Global			Global					Global
	OGC						Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Global
	CGIAR	Global					Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Global
	ITC										Global
	ESRI		Global				Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Global
	CIESIN	Global									Global
	Open Grid Forum							Global			Global
	ISCGM		Global			Global					Global
	UNOOSA						Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Global
NASRDA	Regional				Regional	Not scale-dependent	Not scale-dependent	Not scale-dependent	Not scale-dependent	Regional	

Table 3: UGPM Presenters SDI-related areas of competences and potential areas of cooperation with the UNSDI development process

6 Panel discussion on “The Joys and Responsibilities of Partnering and Coordination”

In this Session a Panel of high-level experts representing various aspects of the UN mandate, global and national SDI authority and academic communities were asked:

- to deliberate on the opportunities and associated responsibilities and discipline of effective partnerships and good coordination;
- to define the challenges and requirements of a “UNSDI culture” in support of and for the benefit of the “geospatial commons”, including and beyond technology and databases.

Chaired by Prof. Mike Jackson, Director of the Centre for Geospatial Science, University of Nottingham, U.K, six Panel members participated in this Session:

- Prof. Michael Gould, Chair of AGILE Management Council from the Department of Information Systems, University of Jaume I, Castellón, Spain;
- Dr. Ganiy Ishola Agbaje, Deputy Director, Space Applications Department, National Space Research and Development Agency (NASRDA), Abuja, Nigeria;
- Dr. Cristian Aqueveque Iglesias, Executive Secretary, SNIT, Ministry of National Goods, Santiago, Chile;
- Mr. David B. Kaatrud, UNGIWG-Co-Chair (WFP); Director, Coordination and Response Division, United Nations Office for the Coordination of Human Affairs (UNOCHA), New York, USA;
- Prof. Martien Molenaar, Rector, International Institute for Geo-information Science and Earth Observation (ITC), Enschede, The Netherlands;
- Dr. Jarmo Ratia, President of the Global Spatial Data Infrastructure (GSDI) Association and Director-General of the National Land Survey of Finland, Helsinki.

The Chair listed key statements heard during the Meeting's plenary and invited discussions to consider them:

1. The business model of today is collaboration and coordination;
2. To build a UNSDI one has to go well beyond technical issues;
3. United Nations "Delivering as One";
4. To-date much activity has almost been extra-curricular – now a substantial critical mass is needed to move forward; and
5. There is a need for an inclusive approach which means that a focus on culture; non-monetary incentives, as well as technical aspects will be critical to success.

He then asked:

- How do we harness the benefits of partnerships?
- How do we achieve Prof. Onsrud's paradigm shift in the way we communicate?
- What are the characteristics of this new paradigm?
- In the emphasis on partnerships the "obvious" route to take is to build on what has been done by the early developers of geographic information technology and interoperability, including open source solutions. But are these advanced solutions necessarily the most appropriate for all countries and will they be optimal for all now and in the future?

Invited by the Chair to present their views, the Panel members and many participants in the audience highlighted various essential aspects of partnerships within the UNSDI context and identified a series of recommendations and requirements. These recommendations are presented below under five topics.

Incentives

- A key issue is to establish committed and consistent collaboration, the business model of today; there is a crucial need to find, in addition to required financial support, non-monetary based incentives in the UN context, in a committed partnership context as well as in the donor context. In addition to technology and institutional organization this aspect has to do above all with appropriate communication at various levels.

Technology evolution

- The UN needs considerable help in facing constant technological changes and keeping adopted standards fluid. In developing appropriate technology, this should be actively linked up with the activities of international standards organizations like ISO and OGC as well as with academia;
- Need for a very open and adaptive architectural framework not fixed on a static technical solution or current standards but open to incorporating social, cultural, political and technological changes as they occur.

Multi-culturally inclusive

- There are different institutional and technical cultures to which the UNSDI development process has to relate, including wider cultural aspects concerning the general public, i.e. the global commons. Collaboration has to be inclusive and assured of sustainability.

Nature and areas of partnerships

- Need for long term and sustainable collaboration beyond technologies, based on common and mutual understanding, complementary competences or expertises;
- Effective and long-term partnerships rely on the obligation of each partner to be well and clearly understood from the start, not only on financial terms but on the committed inputs that are expected from all partners including other stakeholders that are also part of those partnerships;
- Need for corporate partnerships between established entities as well as individual approaches, including more formal approaches like MoUs;
- Need to consider technical collaboration serving a higher purpose, in a higher development framework (for example UNSDI to support the MDGs);
- The 'branding' and agencies recognition has to be accommodated;
- Need for an appropriate framework for partnership identification.

The mandate

- Need of an appropriate legal act at the global level, following the example of the recently approved INSPIRE Directive of the European Commission at regional level for the countries of the European Union, which could well serve as a 'blueprint' for UNSDI, and similar cases in Chile through the Presidential Decree regarding SNIT and Cuba where a central Government mandate exists.

Exchanges with the meeting participants pointed to the need for UNSDI to demonstrate with specific examples how it will help governments and other interested parties in improving their mandated tasks; to the need to strengthen the technical capabilities of young professionals; or to the need for a UNSDI to identify where partnerships can be useful, such as keeping in pace with technology changes. It was also noted that the UN can assist with advocacy for better governance, to channel investments for international or national infrastructures, with the identification and dissemination of best practices and with emphasis on and delivery of capacity building.

7 Review and formulation of institutional and technical issues for the UNSDI

Suitably composed breakout groups (UN agency representatives, national/regional SDI authorities and scientific representatives) reviewed, discussed and defined "institutional" and "technical" issues for UNSDI development process during its preparatory and implementation phases, including the relevant policy framework.

7.1 Institutional issues

A working group of about 25 participants discussed common and specific issues that could slow down the implementation of the UNSDI or limit its impacts. The following table presents the issues raised and the possible actions that need to be taken collectively

Issue	Identified Action
Funding for the creation and maintenance of UNSDI must be made available in a long term framework (beyond 3 years)	<ol style="list-style-type: none"> 1. Political/legal/institutional mandate 2. Identify drivers and champions at all levels: <ul style="list-style-type: none"> ▪ global ▪ regional ▪ national
Funding will be available only if policy/decision makers are interested and convinced in investing in SDI development	<ol style="list-style-type: none"> 3. Consider huge investments made at local level (avoid double funding) 4. Start delivering incremental products (start with practical ones focussing on governmental issues)
Voluntary contribution is not enough	<ol style="list-style-type: none"> 5. Organisational framework

Issue	Identified Action
UN is composed of Member States. UNSDI is not sustainable if they will not contribute	6. Clear UNSDI governance (including roles by and contributions from Member States)
Lack of coordination: <ul style="list-style-type: none"> ▪ between UN agencies ▪ between UN and Member States 	7. Make profit of existing mechanisms (e.g. UN interagency meetings)
Lack of SDI culture at various levels: <ul style="list-style-type: none"> ▪ Decision makers ▪ Mid managers ▪ Desk officers ▪ Users 	8. Communication Strategy: <ul style="list-style-type: none"> ▪ Internal & external ▪ Simple message ▪ Cost/Benefit evidence ▪ Fitting for purpose ▪ Addressing Priorities ▪ Increasing efficiency and performance ▪ Best practice & wrong examples
Need for indicators to measure UNSDI implementation and success	9. Need for indicators to measure UNSDI implementation and success

Table 4: Issues and Actions identified by the Institutional Breakout Group

The main recommendations presented by the Rapporteur to the Plenary were:

Recommendation 1: Establish an effective communication strategy:

- a. show how UNSDI will help in addressing quickly existing and emerging relevant thematic issues;
- b. show why the UNSDI is really user driven; and
- c. show how quality and efficiency of geospatial data and information access will increase (focus on better services).

Recommendation 2: Obtain the political/institutional/legal mandate

- a. a future 'Declaration' must include recommendations proposed by Member States.

Recommendation 3: Start as soon as possible with quick-win products to prove the effectiveness of the UNSDI and to keep high the interest of top decision/policy makers:

- a. identify key issues;
- b. assess feasibility;
- c. focus the development ; and
- d. delivery (perfect systems arriving late are not helpful in ensuring consensus).

7.2 Technical issues

An active group of about 25 participants from UN agencies, national, regional and global SDI initiatives, academia and the private sector, highly qualified on SDI-related technical aspects, discussed and identified a set of concrete and workable recommendations for enabling the UNSDI development.

Recommendation 1: Standards

Better define internationally applicable standards and perhaps constrain standards to reduce ambiguity and interpretation.

Recommendation 2: Roadmap

Create a roadmap over the next five or ten years regarding ‘what is a UNSDI’, what could it do, what UN agencies and identified and committed partners would like to do, what are all the various possible component projects.

Recommendation 3: Document the difference between SDI and UNSDI

Document the difference between a UN SDI and a generic SDI. The specificity, including strengths and weaknesses, of a UN SDI has to be identified and documented.

Among other things:

- the cross-border jurisdictional nature of the type of work that the UN does;
- the real-time use cases (different from INSPIRE which is more of a long term planning use case). For instance, there is a specific need for integrated geospatial data to support real-time disaster response and humanitarian response;
- the need for a scaleable architecture that is especially required here;
- the issue of “integrateability” i.e., the possibility to connect various pieces of various SDIs, especially difficult here because there is not a clean hierarchy (difficult to connect data sources, components worldwide). There is a need for a world wide harmonization and to work on the harmonization of the features.

Recommendation 4: Use cases

Documented appropriate use cases, functional (non technical) user requirements within the UN and collaborating organizations. This could be for instance the type of operations that need to actually take place in the field.

Recommendation 5: A “seed” SDI: “light” version vs a “Pro” version

To create a light version of the UNSDI as a UNSDI minimum requisite, minimum expectations recommendations regarding description but also initial implementation. That could be made available so that people would know “if I am not fulfilling these minimum expectations I probably don’t have what I can call an SDI”.

This idea matches with a GSDI recommendation made in November 2006 in Santiago during the 9th GSDI International Conference to create a definition of SDI 1.0 as a minimum subset of components.

Recommendation 6: Grid Services

There is a common assumption that everything should be based on web services. In some cases, even if improving a limiting reality for many developing countries, where bandwidth is still insufficient for proper use of web services, a recommendation to use Grid computing could be made. For instance, to minimize the payloads⁴, a very light web client available on the field will send simple queries, small packets to the

⁴ When data is sent over the Internet, each unit transmitted includes both header information and the actual data being sent. The header identifies the source and destination of the packet, while the actual data is referred to as the *payload*. Because header information, or overhead data, is only used in the transmission process, it is stripped from the packet when it reaches its destination. Therefore, the payload is the only data received by the destination system.

grid systems which would process the imagery and would send back perhaps small GML⁵.

Recommendation 7: UNSDI chapter in the GSDI Cookbook

Adding a UNSDI chapter in the GSDI Cookbook and contribute to its translation.

Recommendation 8: Identify working systems for demonstration purposes

Identify a “viable” reference implementation embedding a minimum set of demonstrable and persistent components for demonstration purposes.

Recommendation 9: Reach common consensus regarding Geospatial Data features

Use the World Database of Protected Areas (UNEP) as a possible test case and exercise in reaching common consensus regarding geospatial data features.

Recommendation 10: Publish success stories

Identify and publish perhaps not an entire UNSDI success story but pieces which are functioning, address real-world problems and show cross-sectoral capacities.

8 Closure of the meeting

The UNGIWG Co-Chairs were very pleased that in addition to many members of the UNGIWG family so many national, regional and global institutional representatives attended the meeting and provided substantial inputs during this two-day dialogue meeting. There is evidence here that if progress is to be made, there is a need to actively continue this kind of relationship. Then, the Co-Chairs addressed three key issues tackled during this meeting: the question of UNSDI mandate, a communication strategy and partnerships.

8.1 UNSDI mandate

The Co-Chairs commented on this important issue, considering that it could take considerable time to get the UNSDI on the political agenda of the United Nations and to target a General Assembly (GA) Resolution adoption for UNSDI. Another kind of mandate, while actively pursuing the track of a GA Resolution, could come simply from an organization or a group of organizations which at high enough managerial level would make a commitment to regular investment in pursuing the kind of objectives discussed during this meeting, based on the UNSDI strategy implementation document. This can be a way to develop a basis for a GA mandate and to give a more immediate reality to the UNSDI concept.

8.2 Communication strategy

An effective forward looking communication package is considered of paramount importance and could be formulated and implemented at a lower cost if based on successful best practices examples carried out in member countries and regional entities. An important message has to be passed: the United Nations is not only the individual member countries, it's a collective membership. Synergy is all about bringing the pieces together in getting more than the sum of the parts, being

⁵ Short for *Geography Markup Language*, an XML-based language for encoding geographic information in order to be stored and transported over the Internet

the UN. We certainly work in a different set of conditions today than ten years ago and we need to communicate we are current with a new business model highlighting partnerships and decentralisation.

8.3 Partnerships

There is a real opportunity to benefit from the best practices available among potential partners for the UNSDI, such as INSPIRE, GSDI, European GI umbrella organizations, EUROGI and AGILE, and the OGC, ISO and ISCGM. For instance, the private sector has developed a variety of Data Models. This opportunity has to be included in a UNSDI context.

8.4 Vote of thanks

Finally, the Co-Chairs thanked the European Space Agency for hosting and co-organizing this UNGIWG initiative, all the participants for coming to Frascati for this important two-day meeting and in particular the breakout group and Panel Chairs and Rapporteurs, Suha Ulgen as second Day Chair and finally Valeria Salvatori and Jelle U. Hielkema without whom this event would not have been possible.

ANNEXES

- I. Introductory statements
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- III. Case Study: NIMAC-Liberia
- IV. Acronyms
- V. List of participants
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Annex I. Introductory statements

**Statement by Dr. Volker Liebig, Head, ESA-ESRIN,
Director,
Earth Observation Programme, ESA**

I am very pleased to welcome all of you here at ESRIN, the Italian Centre of the European Space Agency. I welcome you both in my function as head of ESRIN and as Director of the ESA Earth Observation Programmes.

Earth observation is the order of the day and this notion is no coincidence. Only a few weeks ago, the UN IPCC published the first of three parts of the 4th UN Climate Assessment Report; whereas the models and predictions of global change themselves do not substantially differ from the last report of 2001, the certainty of the predictions has grown strong. The recently published STERN report, an evaluation of economic consequences, calls the climate change the “greatest and widest ranging market failure ever seen”.

Another important observation concerns the shift from pure science to what can be called operational science and applications. The fields for using Earth observation data and products are vast, ranging from disaster relief to resource management. Such, the use of Outer Space, beside its exploration the main reason of human space activities as mentioned by the UN Outer Space Treaty, has become one of the most valuable assets the space age has brought.

Cooperation between the UN and ESA looks back on some history already. The many application projects we are running in cooperation or partnership with the United Nations, covering manifold topics from water management to epidemiology, clearly shows that Earth observation, here in ESA and in general, is not only about science and technology, but about managing our planet and society. The more data we get from our satellites and from airborne or in-situ resources, the more important are effective, networked data infrastructures. For bringing the benefit of Earth observation to the people, daily and globally, we shall further coordinate and intensify our efforts in harmonising data access and management.

*With pleasure I open therefore this meeting, hoping that the discussion you have here at ESRIN, in the almost “Arcadian” surrounding of the Roman hillside, will be productive and fruitful.
Thank you.*

**Statement by H.E. Mrs. Romy Schmidt, Minister of National Goods; President of
the Council of Ministers for Territorial Information
Government of Chile**

“Ladies and Gentlemen,

A very good morning,

In first place, I would like to express my gratefulness to Mr. Jelle Hielkema because of his special invitation to participate of this meeting. It is very important for us to be standing here today, since in Chile we are beginning a process oriented to strengthen and spread our Spatial Data Infrastructure, that we denominate National System of Coordination of Territorial Information (SNIT). This initiative is absolutely supported by the President of the Republic, Ms. Michelle Bachelet.

One of the principal reasons that summon us today is the restlessness because our countries can collaborate and cooperate actively so that the United Nations counts on a Spatial Data Infrastructure supplying the information necessary to face in an efficient form a set of fundamental issues related with the well-being of the humanity in all its fronts: the respect to the human rights, the protection of the environment, the fight against diseases and the reduction of the poverty.

As you well know it, these fundamental issues were well represented in the resolution of the General Assembly of the United Nations held on 18 September 2000, in the eight objectives of development of Millennium, that include from the reduction to the middle the more extreme poverty, to the halting of the propagation of the HIV/AIDS, and the attainment of universal primary education for year 2015. The objectives of development of millennium are measurable. Year after year we are evaluating advances, if we approached the goals, if we must correct the way, if the solutions are adapted to the necessities. At any moment, the governments of the countries members of this organization are making decisions, assigning resources, establishing priorities, constructing roads, schools and hospitals, forming professional able to face these challenges, to send them where they are required.

In this context, spatial data and geo-information play a very important role. We must know the territory very well and what happens in it, so that the school covers instruction requirements; so that the hospital is accessible to the patients who need it; so that the social programs take care of poorest indeed; so that the progress does not deteriorate environment, among others. The vision from the territory allows to integrate of better form the multiple dimensions and facets of a problematic in particular.

I we want that spatial data and geo-information really serve the United Nations and to all our governments, we have to speak about spatial data infrastructures (SDI), in their different levels and scales: local, national, regional and global. In this particular occasion we will talk about spatial data infrastructure data for the United Nations (UNSDI).

In order to make guessed right decisions, to journey across the correct way, we need all the elements that comprise of a SDI: human resources in first place, expecting they are professionals enabled and with public vocation, able to transform spatial data into information and knowledge to the service of the decisions; in second place, political will from governments to maintain information of quality and accessible to the entire world, reason why we need that the State, through its authorities, supports the implementation of SDI at national level; and, in third place, technologies that allow to store, to process and to model information, that nowadays it is generated in great volumes. All the previous without forgetting the necessity to create standards to be able to integrate information and to communicate between us with greater facility. In this point I want to reiterate you that the Government of Chile is absolutely committed with these elements. Our country is crossing a successful implementation process of “electronic government” promoting transparency and democratization of the public information.

Please, let me stop in human resources issue I previously mentioned. For the success of the United Nations Spatial Data Infrastructure, intellectual capital of our countries is essential, and I believe that it is in this point where the best possibilities of cooperation and collaboration are opened to us, constituted as the pillars of this encounter. To interchange experiences, to spread portfolio of successes, to enable us mutually, is going to allow us to approach with greater speed the goals of world-wide well-being that we have prevailed.

Also I want to emphasize the necessity of documentation for our information, mainly considering the wide territorial coverage of the actions of the United Nations. It is urgent to maintain metadata catalogues that allow us to present the world what information we have, how it has been constructed and how it is acceded to it, with the intention of facilitating its flow in this organization and improving the response times for solving the problems they summon us.

In Chile we are aware about all these requirements and our conception of SDI meets as much political aspects as technicians, who direct and regulate its operation. We have clarity that the main target of our SDI is to satisfy the necessities of our users: the Chilean citizens, the institutions of the Chilean State and the entire world. Nowadays we have in Chile our SNIT, “National System of Coordination of Territorial Information”, created by Supreme Decree, as I will be able to tell you in a pair of hours more, which is fruit of a maintained work that we have been making in the last years, coming to materialize initiatives and to solve problems that already affected to us from the beginning of the 90', when GIS began to be used in our country and particularly in the institutions of government.

*In order to finalize, I want to reiterate our gratefulness by the invitation to show our vision and experience on these matters, and we hope to be a real contribution in the work to be developed in these days; we are certain this interchange of knowledge will enrich of great way our work and the challenges that we have ahead, in search of the well-being of each one of the people in our countries.
Thanks and very good morning.”*

Annex II. Meeting Presenters descriptions

Spatial Data Infrastructures

Regional initiatives

IDEDES-Latin America and Caribbean <http://redgeomat.rediris.es/idedes/>

IDEDES is a CYTED (Iberia-American Programme of Science and Technology for Development) project which includes 19 countries of Latin-America, Spain and Portugal. The main purpose of this project is to evaluate and strengthen SDI for sustainable development to Latin-America and the Caribbean which integrates institutions from 8 countries: Argentina, Brazil, Chile, Colombia, Cuba, México, Spain and Uruguay. For example, a SDI Readiness Index has been recently developed and SDI “Readiness” assessments carried out in the region of interest.

European Commission – INSPIRE Directive <http://www.ec-gis.org/inspire/> ; <http://eu-geoportal.jrc.it/>

The INSPIRE initiative, formally approved by the European Council and Parliament in February 2007, is aiming to fully establish by 2013 an interoperable European spatial information infrastructure for the 27 countries of the European Union that delivers to the users a wide variety of integrated spatial information services. These services should allow the users to identify and access spatial or geographical information from a wide range of sources, from the local level to the global level, in an interoperable way for a variety of uses. The target users of INSPIRE include policy-makers, planners and managers at European, national and local level and the citizens and their organizations. Possible services are the visualization of information layers, overlay of information from different sources, and spatial and temporal analysis of natural resources.

ICIMOD-MENRIS <http://menris.icimod.net/menris/overview.php>

The International Institute for Mountain Development (ICIMOD) in Kathmandu, Nepal is a multidisciplinary centre for research and training on integrated mountain development and the chief commodity that the Centre deals with is information and knowledge on mountain development. Under the overall framework of Information and Knowledge Management (IKM) Programme at ICIMOD, MENRIS Division is promoting the geo-information science, technology and application for sustainable mountain development. The MENRIS Division, which is also recognised as UNEP GRID-Kathmandu was established in 1990 with an aim to bridge the data and information gaps for integrated mountain development in the HKH region and the portal in its present form is a part of UNEP's Environment Knowledge Hub (eKH) initiative. In strong strategic partnerships with key international agencies, MENRIS together with national partners is making significant contributions towards capacity building; developing mountain thematic database and delivering useful mountain-specific applications and decision support systems. The portal aims to serve as a Mountain Knowledge Hub (MKH) in the HKH region.

National Initiatives

Chile <http://www.snit.cl/>

The National Territorial Information System (SNIT, its acronym in Spanish), is a permanent inter-ministerial multi-purpose geographic information management system, coordinated by the Ministry of National Goods. This capacity aims at a better management of public territorial information in the country, integrated by institutions of State, producers and users of such information, basing its actions on principles of collaboration among institutions; decentralization and deconcentration by means of active participation of regions; transparency in front of citizens and efficient and effective use of the resources involved on management of territorial information.

Spain <http://www.idee.es>

The Spatial Data Infrastructure of Spain (Infraestructura de Datos Espaciales de España, IDEE) is an initiative to integrate data, metadata and geographical information produced in Spain into Internet, which provides to locate, identify and access to such information by its potential users.

The current national website for the IDEE, provides access to the main node for distribution and screening of data and geographical services in Spain, should be launched with the nodes and websites of official geographical information under the theme of nature, and other equivalent websites that have been established in the Autonomous Communities. These nodes will in turn be complimented by other institutional, private or enterprise infrastructures to develop the authentic National Spatial Data Infrastructure of Spain.

Cuba <http://www.iderc.co.cu/>

The Spatial Data Infrastructure of the Republic of Cuba (IDERC) encompasses policies, technologies, standards and human resources necessary for the effective collection, management, access, delivery and use, of spatial data at national level. This information is required for economic, political, and social, decision making, and for sustainable development. IDERC will allow sharing geographic information in a collaborative organizational environment.

Capacities & Tools for Geospatial Information Access, Management and Analysis

HMA-ESA

In September 2005, the ESA launched the Heterogeneous Missions Accessibility - Interoperability (HMA-I) Project. HMA-I has defined the necessary interfaces and a generic, service-oriented architecture to ensure interoperability within the GMES space component comprising a constellation of satellites together with its Ground Segment and the interfaces to the other components of GMES. This project, in which FAO and the EC-JRC are cooperating, has led to a first prototype capacity which was presented during an ESA workshop immediately preceding the UGPM meeting. Besides ESA missions like Envisat and ERS-2, national missions like Cosmo from ASI (Italy), Pleiades from CNES (France), RADARSAT-2 from CSA (Canada) and TerraSAR-x from DLR (Germany) will be providing the Earth observation data necessary to allow an operational rollout of the GMES services starting from 2008. HMA has entered a new phase, HMA-Testbed (T) in March 2007.

UNGIWG-Task Group 4

<http://www.ungiwg.org/interoperable.htm> ; www.geonetwork-opensource.org ;
www.fao.org/geonetwork

The UNGIWG Interoperability Services Task Group working on improving access to and interactive use of spatial data to enhance data and information sharing and support decision-making through international ISO and OGC standards and specifications. The FAO-WFP-UNEP-UNOCHA GeoNetwork capacity, now at beta-version 2.1, is the principal spatial information management capacity and currently widely accepted as a defacto metadata standard for geospatial information management in the UN system and well beyond.

ESA-FAO GEOportal www.geoportal.org

The GEOportal is an ESA initiative, in cooperation with FAO, for the development of a comprehensive portal for geospatial data to serve the requirements of the nine identified Societal Benefit Areas (SBAs) of the Group on Earth Observations (GEO). Currently ESA and FAO are working closely together on the development of a prototype of the portal to be demonstrated at the GEO-IV Ministerial Summit in Cape Town from 23-25 November 2007.

DevInfo 5.0-UNICEF/UNDG <http://www.devinfo.org>

DevInfo 5.0, a powerful new version of DevInfo, has been released. This new version operates both as a desktop application and on the web. It delivers significant enhancements for easy access to information on human development. The system has been developed under UN partnership and is distributed royalty-free to all end users. Now national statistics offices, UN agencies, donors, NGOs and civil society can prepare reports and presentations using this common database platform. The system has been endorsed by the UN Development Group and is being used in many countries to help track the Millennium Development Goals and other national priorities. DevInfo 5.0 has evolved from a decade of innovations in database systems that support informed decision making and that promote the use of data to advocate for human development. The system organizes data by indicators, time periods and geographic areas with extensive metadata based on international standards. This new version builds on the experience and insights of thousands of DevInfo users around the world.

The new version of DevInfo includes significant advancements in handling metadata. It conforms to ISO standardized information sharing models for metadata storage and dissemination. These metadata standards help achieve efficiency by facilitating data exchange and harmonizing international and national data sets. They decentralize data maintenance, lower the reporting burden on data producers and reduce duplication of effort. They foster use of more timely and better quality data. They shift the process of data distribution from "pushing" data to data users to providing options for data users to "pull" data from data producers as and when new data are published. They allow for data exchange among applications on a broad spectrum of platform.

DevInfo 5.0 is compliant with international ISO metadata standards for indicators, data sources and digital maps, SDMX and ISO 19115.

UNOSAT-UNITAR <http://unosat.web.cern.ch/unosat/>

UNOSAT is the United Nations Institute for Training and Research (UNITAR) Operational Satellite Applications Programme, implemented in co-operation with the

UN Office for Project Services (UNOPS) to provide satellite imagery and Geographic Information System value-added services to UN agencies that wish to access the International Charter "Space and Major Disasters". The United Nations can access the Charter through UNOOSA, which is a cooperating body to the Charter.

gvSIG Project; IVER Information Technologies; Valencia, Spain

<http://www.gvsig.gva.es/>

gvSIG is an open source tool developed for processing and managing geographic information. It is characterized by a user-friendly interface, with a quick access to the most usual raster and vector formats. In the same view it includes local as well as remote data through a WMS, WCS or WFS source.

It is aimed at users of geographic information, whether professionals or civil servants (city councils, councils, regional councils or ministries) from any part of the world (at the moment its interface is in Spanish, Valencian, English, Basque, Gallego, Czech, Chinese, French, German, Italian and Portuguese), in addition to being freeware.

Given its freeware nature it is highly interesting for the international community of developers and, in particular for university settings due to their R&D and educational perspectives. In fact, special emphasis has been placed on the expansion of the project so that potential developers can easily expand the functions of the application, as well as develop completely new applications from the libraries used in gvSIG (as long as they comply with the GPL license).

Grid Computing-ESA <http://eogrid.esrin.esa.int/news/moreinfo.asp>

The ESA Grid (European Space Agency (ESA) Grid on-Demand Services and Infrastructure (GODIS) for Earth Observation Applications) integrates high-speed connectivity, distributed processing resources and large volume of data to provide science and industrial partners with improved access to end products. This portal offers access to, and support for, science-oriented Earth Observation Grid services and applications, including access to a number of global geophysical ENVISAT products.

UNSDI Coordination Offices (CO)

The Netherlands <http://www.unsdi.nl/>
Czech Republic <http://www.unsdi.cz/>
Hungary <http://www.unsdi.hu/>

A Coordination Office for Spain, UNSDI-SCO, is under active development, coordinated by the University Jaume I in Castellòn in the Valencia area and in principle agreed on during a meeting of the relevant Commission of the National Geographic Institute (IGN), held in Seville on 22 and 23 March.

Scope

The general purpose of the UNSDI-NCO programmes is aiming at bridging the gap between users and suppliers of geo-information and act as a coordinating 'agent' between national-level SDI institutions and programmes and the UNSDI. The various programmes are addressing different needs, ranging from small and medium-size Enterprises (SMEs), Non-governmental Organizations (NGOs), Regional Organizations, UN Organizations to National Governments. In addition support is

given to large enterprises and multi-nationals in implementing their Corporate Governance goals.

Application areas

Primary application areas are water resources management, forestry, transport/logistics, food security, disaster relief, humanitarian aid, agriculture, fisheries, biodiversity, migratory pest control and climate change goals in the context of sustainable development. For The Netherlands the application focus is on integrated water resources management (IWRM), forest resources management and transport/logistics.

UNSDI aims to disclose and exchange geospatial data and information between the different UN bodies and between the different UN bodies and their Member States.

The role and function of UNSDI-NCO's in UNSDI as outlined below is actively taking into account the "Delivering as One" recommendations from the Secretary-General's High-level Panel on UN System-wide Coherence. NCO's could be part of the "One UN" Country Programme under the UN Resident Coordinator.

NCO's role in UNSDI:

- provide the National UNSDI portal/node,
- fulfilling national government's policies with respect to issues relying on the use of geo-information,
- coordination and execution of geo-information disclosure activities for large enterprises, companies or multi-nationals in order to fulfil their Corporate -Governance goals,
- capacity building at national and regional level.

UNSDI related institutions at global, regional and national level

GSDI <http://www.gsdi.org/>

The Global Spatial Data Infrastructure (GSDI) Association is an inclusive organization of some 36 organizations, agencies, firms, and individuals from around the world associated with geospatial data and information. The purpose of the organization is to promote international cooperation and advocacy in support of local, national and international spatial data infrastructure developments that will allow nations to better address social, economic, and environmental issues of pressing importance.

EUROGI <http://www.eurogi.org/default.asp>

EUROGI is the umbrella organisation representing the European Geographic Information community, comprising organizations from 19 European countries and a regional remote sensing organization. It is an independent, non-governmental and non-profit organisation. EUROGI's mission is:

- to maximise the availability and effective use of geographic information (GI) throughout Europe;
- to increase awareness by all potential beneficiaries of the value of GI;
- to influence best practice in the creation and use of GI by facilitating understanding and encouraging collaboration between national GI Associations;

- to provide professional and balanced advice to those who commission and need European GI, particularly to those in the public sector.

To achieve these aims EUROGI needs to be truly representative of the whole industry from creators, developers and those who add value, and of all the end-users of GI.

In response to this last need, EUROGI has recently opened its doors to include not only national GI Associations but also members from industry, academic institutions, public sector bodies, not-for-profit organisations, and interested individuals.

GEO <http://www.earthobservations.org/index.html>

The Group on Earth Observations (GEO) was established by a series of three ministerial-level summits, starting in 2005. GEO currently includes 69 member countries, the European Commission, and 46 participating organizations working together to establish a Global Earth Observation System of Systems (GEOSS). The GEO vision for GEOSS is to realize a future wherein decisions and actions for the benefit of humankind are informed through, among others, coordinated, comprehensive and sustained Earth observations and derived information, focusing on nine Societal Benefit Areas (SBAs).

GEOSS will build on and add value to existing Earth-observation systems by coordinating their efforts, addressing critical gaps, supporting their interoperability, sharing information, reaching a common understanding of user requirements, and improving delivery of information to users.

OGC <http://www.opengeospatial.org/>

The Open Geospatial Consortium, Inc (OGC) is an international consortium of 340 companies, government agencies and universities participating in a consensus process to develop publicly available interface specifications. OpenGIS® Specifications support interoperable solutions that "geo-enable" the Web, wireless and location-based services, and mainstream IT. The specifications empower technology developers to make complex spatial information and services accessible and useful with all kinds of applications.

CGIAR-CSI <http://csi.cgiar.org/index.asp> ; www.cgiar.org

The Consultative Group on International Agricultural Research (CGIAR), which formally became a UNGIWG Member in March 2007, is a strategic alliance of countries, international and regional organizations, and private foundations supporting 15 international agricultural research centres that work with national agricultural research systems and civil society organizations, including the private sector. The alliance mobilizes agricultural science to reduce poverty, foster human well being, promote agricultural growth and protect the environment. The CGIAR generates global public goods that are available to all.

The CGIAR Consortium for Spatial Information (CGIAR-CSI) is an initiative of the many geospatial scientists within the Consultative Group for International Agriculture Research (CGIAR), actively using GeoNetwork and linking the research efforts of CGIAR scientists, national and international partners, and others working to apply and advance geospatial science for international sustainable agricultural development, natural resources management, biodiversity conservation, and poverty alleviation in developing countries.

The CGIAR-CSI works to facilitate collaboration and capacity building for data sharing, data and information dissemination, and geospatial data analysis amongst the fifteen CGIAR Centers and their many regional activities; with geospatial laboratories, scientists and researchers throughout the developing countries; and within the broader global research and development communities.

ITC <http://www.itc.nl/>

At the International Institute for Geo-Information Science and Earth Observation (ITC) in The Netherlands, knowledge of and formal training in geo-information management is continually being developed and extended. By means of education, research and project services, ITC contributes to capacity building in countries that are economically and/or technologically less advanced. The key words characterising ITC activities are geo-information management, worldwide and innovative. ITC has an active worldwide network of alumni occupying frequently key managerial and technical positions in government.

ESRI <http://www.esri.com/>

ESRI, the principal global GIS private sector company, designs and develops a wide range of geographic information system (GIS) tools, technologies and solutions.

CIESIN <http://www.ciesin.columbia.edu/>

The Centre for International Earth Science Information Network (CIESIN) is a centre within the Earth Institute at Columbia University in New York, USA. CIESIN works at the intersection of the social, natural, and information sciences, and specializes in on-line data and information management, spatial data integration and training, and interdisciplinary research related to human interactions in the environment. One of ITC's major strengths is its extensive and active alumni network around the world which is well-connected to high and medium level government positions.

Open Grid Forum <http://www.ogf.org/>

The Open Grid Forum (OGF) is a community of users, developers, and vendors leading the global standardization effort for grid computing. The OGF community consists of thousands of individuals in industry and research, representing over 400 organizations in more than 50 countries. Together we work to accelerate adoption of grid computing worldwide because we believe grids will lead to new discoveries, new opportunities, and better business practices.

The work of OGF is carried out through community-initiated working groups, which develop standards and specifications in cooperation with other leading standards organizations, software vendors, and users. OGF is funded through its Organizational Members, including technology companies and academic and government research institutions. OGF hosts several events each year to further develop grid-related specifications and use cases and to share best practices.

ISCGM <http://www.iscgm.org/cgi-bin/fswiki/wiki.cgi>

The International Steering Committee for Global Mapping (ISCGM) was established in 1996 in Tsukuba Japan. The primary purpose of this Committee is to examine measures that concerned national, regional and international organizations can take to foster the development of Global Map in order to facilitate the implementation of global agreements and conventions for environmental protection as well as the

mitigation of natural disasters and to encourage economic growth within the context of sustainable development.

The Committee consists of heads of National Mapping Organizations with liaison representatives of regional and international organizations, academia, etc. So far 156 countries have participated in the development of Global Map as of April 2007.

UNOOSA <http://www.unoosa.org/oosa/index.html>

The United Nations Office for Outer Space Affairs (UNOOSA) is the United Nations office responsible for promoting international cooperation in the peaceful uses of outer space. The Office serves as the secretariat for the General Assembly's only Committee dealing exclusively with international cooperation in the peaceful uses of outer space: the Committee on the Peaceful Uses of Outer Space (UNCOPUOS). It also implements the United Nations Programme on Space Applications. Additionally, the Office has been mandated by the General Assembly (A/RES/61/110) to implement the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (SPIDER) and is also a Cooperating Body of the international Charter "Space and Major Disasters", a mechanism through which any UN agency can access and take advantage of the Charter.

Nigeria - NASRDA <http://www.nasrda.org/>

Nigeria is a nation endowed with an abundance of human and natural resources. The present administration has recognised that if properly harnessed, these resources will enable Nigeria to take her rightful place as a major African and world leader. Central to the realisation of Nigeria's potentials are the programmes of the Federal Ministry of Science and Technology under the guidance of Honourable Minister Professor Turner T. Isoun. The National Space Research and Development Agency (NASRDA), tasked with implementing the National Space Policy, is a product of that broader vision of Nigeria's technological potential, a vision that opens the door to a Nigeria greater by far than the one we know today. Among other programmes, NASRDA operates Nigeria's first earth observation satellite, Nigeriasat-1, launched in 2005.

Annex III. Case Study: NIMAC-Liberia – Margaret Hall

A look at the SDI Capacity Development potential in post-crisis Liberia

**National Information Management Centre
(NIMAC)**

<http://www.nimacliberia.org/>

A project of the Government of Liberia and UNDP

The National Information Management Centre (NIMAC) promotes capacity building, common data and technology standards and the free flow of information in Liberia. It achieves this through focused client service, product provision, training and support to information policy development. The main objectives of the Project are:

1. to strengthen information management capacity in the government of Liberia;
2. to provide information management services to the Government and to the wider humanitarian/development communities, supporting relief, recovery and reconstruction efforts through the provision of information products and services;
3. to support the monitoring and tracking of progress of the LRDC, MDGs, iPRSP, and other development frameworks within Liberia.

Annex IV. List of acronyms

AGILE: Association Geographic Information Laboratories Europe
CGIAR: Consultative Group on International Agricultural Research
CGIAR-CSI: CGIAR Consortium for Spatial Information
CIESIN: Centre for International Earth Science Information Network
CYTED: Ciencia Y Tecnologia para El Desarrollo (Cuba)
DEWA: Division of Early Warning and Assessment
ESA: European Space Agency
ESA-ESRIN: ESA Centre for Earth Observation
ESRI: Environmental Systems Research Institute
EUROGI: European Umbrella Organisation for Geographic Information
FAO: Food and Agriculture Organization of the UN
FIVIMS: Food Insecurity and Vulnerability Information and Mapping Systems
GEO: Group on Earth Observations
GIEWS: Global Information and Early Warning System on Food and Agriculture
GIS: Geographical Information System
GMES: Global Monitoring for Environment and Security
GSDI: Global Spatial Data Infrastructure
HMA: Heterogeneous Missions Accessibility
ICIMOD: International Centre for Integrated Mountain Development
IDEE: Infraestructura de Datos Espaciales de España
IDEDES: Infraestructuras de Datos Espaciales (SDI in Spanish)
IDERC: The Spatial Data Infrastructure of the Republic of Cuba
INSPIRE: Infrastructure for Spatial Information in Europe
ISCGM: International Steering Committee for Global Mapping
ITC: International Institute for Geo Information Sciences and Earth Observation
LRDC: Liberia Reconstruction and Development Committee
MDGs: Millennium Development Goals
MENRIS: Mountain Environment and Natural Resources' Information Systems
MoU: Memorandum of Understanding
NASRDA: National Space Research and Development Agency
NGO: Non Governmental Organization
NIMAC: National Information Management Centre
OGC: Open Geospatial Consortium
OGF: Open Grid Forum
SDI: Spatial Data Infrastructure
SNIT: Sistema Nacional de Información Territorial (Chile)
UGPM: UNSDI Global Partners Meeting
UN: United Nations
UNDG: United Nations Development Group
UNDP: United Nations Development Programme
UNEP: United Nations Environment Programme
UNGIWG: United Nations Geospatial Information Working Group
UNHCR: United Nations High Commission for Refugees
UNITAR: United Nations Institute for Training and Research
UNJLC: United Nations Joint Logistics Centre
UNOCHA: United Nations Office for Coordination of Humanitarian Affairs
UNOOSA: United Nations Office for Outer Space Affairs

UNOSAT: UNITAR Operational Satellite Applications Programme

UNSDI: United Nations Spatial Data Infrastructure

UNSDI-CO: UNSDI National Coordination Offices

Annex V. List of UGPM participants

List of Participants, 1-2 March 2007			
FULL NAME	WORK TITLE	ORGANIZATION	COUNTRY
H.E. Mrs. Romy Schmidt Crnosija	Minister of National Goods President of Ministers Council of Territorial Information	Ministry of National Goods Government of Chile	Santiago, Chile
Mr. Julio Urzua Negrete	Chief of Staff of Minister of National Goods	Ministry of National Goods	Santiago, Chile
Dr. Volker Liebig	Head, ESRIN Director Earth Observation	European Space Agency (ESA)	Frascati, Italy
Ms. Simonetta Cheli	Head, International Affairs Office	ESA-ESRIN	Frascati, Italy
Mr. David B. Kaatrud	UNGIWG-Co-Chair (WFP) Director, Coordination and Response Division	United Nations Office for the Coordination of Human Affairs (UN-OCHA)	New York, USA
Mr. Jeffrey B. Tschirley	UNGIWG Co-Chair (FAO) Chief, Environment, Climate Change and Bioenergy Service; NRC Division	Food and Agriculture Organization (FAO) of the United Nations	Rome, Italy
Mr. Suha Ulgen	Incoming UNGIWG Co-Chair Technical Coordinator, Field Information Services Unit	United Nations Office for the Coordination of Human Affairs (UN-OCHA)	New York, USA

List of Participants, 1-2 March 2007			
FULL NAME	WORK TITLE	ORGANIZATION	COUNTRY
Dr. Ganiy Ishola Agbaje	Deputy Director, Space Applications Department	National Space Research and Development Agency (NASRDA)	Abuja, Nigeria
Ms. Birgit Aigner	Marketing and Communications Expert	Aigner Marketing & Communications	Mainburg, Germany
Mr. Franck Albinet	UNGIWG Secretariat UNHCR Staff member (outposted)	World Food Programme (WFP)	Rome, Italy
Mr. Alessandro Annoni	Head, Spatial Data Infrastructures Unit	Joint Research Centre (JRC) European Commission	Ispra, Italy
Mr. Olivier Arino	Exploitation and Services Division	ESA-ESRIN	Frascati, Italy
Dr. Cristian Aqueveque Iglesias	Executive Secretary, SNIT	Ministry of National Goods	Santiago, Chile
Dr. Werner Balogh	Programme Officer	United Nations Office for Outer Space Affairs (OOSA)	Vienna, Austria
Dr. Salvador Bayarri Romar	Coordinator, Opensource Software Development-gvSIG	IVER Information Technologies	Valencia, Spain
Mr. Hammad Benchekroun	Head, Data Management Division	Royal Centre for Remote sensing (CRTS)	Rabat, Morocco
Ms. Frederique Berenbach	IT Consultant	Sapienza Consulting	Bramley, United Kingdom

List of Participants, 1-2 March 2007			
FULL NAME	WORK TITLE	ORGANIZATION	COUNTRY
Prof. Piero Boccardo	Director, Information Technology for Humanitarian Assistance and Cooperation Actions (ITHACA)	University of Torino	Turin, Italy
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Ms. Paola De Salvo	Geospatial Analyst	World Food Programme (WFP)	Rome, Italy
Ms. Chia Chartaya	Web Consultant	Sapienza Consulting	Bramley, U.K.
Ms. Francesca Casale	IT Consultant	Sapienza Consulting	Bramley, U.K.
Dr. Karel Charvat	Head, UNSDI Czech Coordination Office (CCO) President, EFITA	Czech Centre for Science and Society (CCSS)	Prague, Czech Republic
Dr.Ir. Joep Cromptoets	Assistant Professor, Centre for Geo-Information	Wageningen University and Research Centre (WUR)	Wageningen The Netherlands
Dra. Tatiana Delgado Fernandez	Executive Secretary, National SDI Commission Coordinator, CYTED Project IDEDES	Oficina Central Grupo Empresarial GEOCUBA	Havana, Cuba
Mr. Olivier John Cottray	GIS Management Officer	United Nations Joint Logistics Centre (UNJLC)	Rome, Italy
Dr. Ing. Luigi Fusco	Senior Adviser for Earth Observation Applications	ESA-ESRIN	Frascati, Italy
Mr. Emanuele Gennai	Global Account Manager	Environment Systems Research Institute (ESRI)	Geneva, Switzerland

List of Participants, 1-2 March 2007			
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Mr. Fabio Grita	GIEWS Workstation Coordinator – Global Information and Early Warning Service (ESCG)	Food and Agriculture Organization (FAO) of the United Nations	Rome, Italy
Ms. Margaret Hall	Manager	United Nations Development Programme (UNDP)	Monrovia, Liberia
Mr. Barry L. Henricksen	Senior UNGIWG Consultant	UNGIWG Secretariat	Melbourne, Australia
Mr. Jelle U. Hielkema	FAO-UNGIWG Consultant	UNGIWG Secretariat	Rome, Italy
Mr. Christopher Higgins	Leader, Product and Services Development	University of Edinburgh	Edinburgh, U.K.
Mr. Petr Horak	Project Manager	WIRELESSINFO	Litovel, Czech Republic
Prof. Michael Jackson	Director, Centre for Geospatial Science.	University of Nottingham	Nottingham, U.K.

List of Participants, 1-2 March 2007			
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Mr. Henri Josserand	Chief; Global Information and Early Warning Service (GIEWS)	Food and Agriculture Organization (FAO) of the United Nations	Rome, Italy
Mr. José Angel Alonso Jimenez	IT Consultant	IGN	Madrid, Spain
Ms. Abby Knickerbocker	Manager, Information Management and Technology Unit	United Nations High Commissioner for Human Rights (OHCHR)	Geneva, Switzerland
Prof. Bas C. Kok	President-elect, GSDI	Cadastre of the Netherlands	Apeldoorn The Netherlands
Dr. Patrick E. Van Laake	Assistant Professor	International Institute for Geo-Information Science and Earth Observation (ITC)	Enschede, The Netherlands
Ms. Kate Lance	FAO-UNGIWG Consultant	UNGIWG Secretariat	Enschede, The Netherlands
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List of Participants, 1-2 March 2007			
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Dr. Walter H. Mayer	Director	PROGIS Software AG	Villach, Austria
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Prof. Dr. Ir. Martien Molenaar	Rector	International Institute for Geo-Information Science and Earth Observation (ITC)	Enschede The Netherlands
Dr. Lévai Pal representing Dr. Szabolcs Mihaly	Senior Councillor; Head of FOMI INSPIRE Team Director-General	Institute of Geodesy, Cartography and Remote Sensing (FOMI)	Budapest, Hungary
Ms. Patrizia Monteduro	GeoNetwork Technician	Food and Agriculture Organization (FAO) of the United Nations	Rome, Italy
Mr. Nathan Morrow	Independent Evaluator	WFP/OEDE Consultant	Viterbo, Italy
Mr. Thierry Nègre	Counsellor (Food Security)	European Commission Delegation to The Holy See and UN Organizations	Rome, Italy

List of Participants, 1-2 March 2007			
FULL NAME	WORK TITLE	ORGANIZATION	COUNTRY
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Mr. Kris S. Oswald	DevInfo Global Architect President, CSF	United Nations Children Fund (UNICEF)	New York, USA
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Dr. Jason Pickering	GIS Specialist	World Health Organization (WHO)	Geneva, Switzerland
Mrs. Enrica Porcari	Chief Information Officer	Consultative Group on International Agricultural Research (CGIAR)	Rome, Italy
Mr. Nicolas Pron	DevInfo Global Administrator Senior Programme Officer	United Nations Children Fund (UNICEF)	New York, USA
Dr. Jarmo Ratia	President, Global Spatial Data Infrastructure (GSDI) Association Director-General, National Land Survey of Finland	National Land Survey of Finland	Helsinki, Finland
Dr. Gabor Remetey-Fülöpp	Head, UNSDI Hungarian Coordination Office (HUCO) Secretary-General, Hungarian Geospatial Association (HUNAGI)	UNSDI Hungarian Coordination Office (HUCO)	Budapest, Hungary

List of Participants, 1-2 March 2007			
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Prof. Ing. Mauro Salvemini	President EUROGI Chair AM-FM - LABSITA	La Sapienza University	Rome, Italy
Mr. Giorgio Sartori	Senior Adviser ,Emergency Information Management	World Food Programme (WFP)	Rome, Italy
Mr. Olivier Senegas	Head, Procurement, Projects and Supplier relations	UNOSAT-UNITAR	Geneva, Switzerland
Mr. Basanta Shresta	Head, MENRIS Department	International Centre for Integrated Mountain Development (ICIMOD)	Kathmandu, Nepal
Mr. Mark Smulders	Coordinator, Food Insecurity and Vulnerability Information Mapping Systems (FIVIMS)	Food and Agriculture Organization (FAO) of the United Nations	Rome, Italy
Dr. Kristin Stock	Research Associate Centre for Geospatial Science	Social Changeonline / University of Nottingham	Sydney, Australia Nottingham, U.K.
Mr. Luc StPierre	Senior Geographic Information Systems Officer, Field Information and Coordination Support Section	United Nations High Commissioner for Refugees (UNHCR)	Geneva, Switzerland
Dr. Carmelle J. Terborgh	Global Account Manager	ESRI	Vienna, Va; USA

List of Participants, 1-2 March 2007			
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Mr. Jeroen Ticheler	Technical Officer (Information Systems) GeoNetwork Project Manager - NRC	Food and Agriculture Organization (FAO) of the United Nations	Rome, Italy
Dr. Fabio Giulio Tonolo	Information Technology for Humanitarian Assistance and Cooperation Actions (ITHACA)	University of Torino	Turin, Italy
Ms. Caline Travade	GIS Officer	International Fund for Agricultural Development (IFAD)	Rome, Italy
Ms. Heli Ursin	Head, International Affairs	National Land Survey of Finland	Helsinki, Finland
Mr. Danny Vandebroucke	Research Associate, Spatial Applications Division Leuven (SADL)	Catholic University Leuven	Leuven, Belgium
Mr. Rob van de Velde	Director	GEONOVUM	Amersfoort The Netherlands
Drs. Jan Cees Venema	Head, UNSDI Netherlands Coordination Office (NCO)	UNSDI Netherlands Coordination Office (NCO)	Amsterdam, The Netherlands
Ms. Joanna Walsh	OSGeo Liaison	Terradue S.r.l	Rome, Italy
Mr. Michael Wilson	Interoperability Expert, Division of Early Warning and Assessment (DEWA)	United Nations Environment Programme (UNEP)	Nairobi, Kenya
Mr. Gregory Yetman	Geographic Information Specialist - Center for International Earth Science Information Network (CIESIN)	Columbia University	Palisades, NY, USA

Annex VI. Programme of UNGIWG-UGPM meeting

Thursday, 1 March		<i>Day Chair: Mr. Jeffrey B. Tschirley; Chief, Environment, Climate Change and Bioenergy Service; FAO</i>
8.15	Registration - Reception Bld 14	
9.00	Welcome	<p><i>Dr. Volker Liebig, Head, ESA-ESRIN Director, Earth Observation Programme, ESA</i></p> <p><i>Statement by H.E. Mrs. Romy Schmidt, Minister of National Goods, Government of Chile</i></p>
9.10	<p>Opening Statements by UNGIWG Co-Chairs</p> <p><i>Mr. Jeffrey B. Tschirley, FAO-NRC Mr. David B. Kaatrud, WFP/UN-OCHA</i></p> <p><i>'Housekeeping' announcements Mr. Jelle U. Hielkema UNGIWG Secretariat</i></p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ to set the 'tone' for the meeting from the UNGIWG perspective, following on from the UNGIWG-7 Plenary in Santiago de Chile; ▪ to define the 'limits' of where the UNSDI developments process currently is and where it is aiming to be heading during 2007-09; ▪ to underline the need for a mutual process between UNGIWG, Member States and Regional Organizations. <p>Expected outcome:</p> <ul style="list-style-type: none"> ▪ clear understanding by the global UNSDI partners about the UNGIWG-UNSDI scope and objectives and the respective roles of the UN agencies involved, Member States and Regional Organizations in the UNSDI development process.

<p>9.40</p>	<p>Keynote Address “(UN) SDI, Time for a Paradigm Shift?”</p> <p><i>Prof. Harlan Onsrud</i> <i>Ex-President, Global Spatial Data Infrastructure (GSDI) Assoc.</i> <i>Executive Director, GSDI Association</i> <i>Department of Spatial Information Science and Engineering</i> <i>University of Maine, Orono, USA</i></p>	<p>The Keynote Speaker will be requested to address the ‘opportunities and challenges’ of the UNSDI development process in the context of its potential for the UN System as well as ongoing national and regional SDI developments and as a high-potential public-private ‘enterprise undertaking’ where technological borders transcend international as well as organizational borders, both ‘horizontally’ and ‘vertically’, in a neutral and mutually beneficial way: a paradigm shift!</p>
<p>10.15</p>	<p>Coffee break</p>	
<p>10.35</p>	<p>Session 1: The Application Context for Geospatial Information Management and Interoperability Services</p> <p>-Humanitarian Emergencies.....UN-OCHA/UNHCR Messrs. Luc StPierre-Suha Ulgen</p> <p>-Global Food Security Information and Analysis.....FAO-ESAF/ESTG Messrs. Mark Smulders-Henri-Josserand</p> <p>-Global Forest Resources Assessment.....FAO-FO-FRA Mr. Orjan Jonsson</p> <p>-Global Environment Monitoring and Management.....UNEP-DEWA Mr. Mick Wilson</p> <p>-Global Logistics and Transport.....UNJLC-WFP Mr. Olivier Cottray</p> <p>-ESA Activities in Support of Geospatial Information in the United Nations..... ESA Mr. Olivier Arino</p> <p>(5-10 min application context ‘tone setting’ presentations)</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ to, based on detailed prior instructions to presenters, outline the overall applications context of the UNSDI development process for a number of ‘global issues’ in the humanitarian, food security, economic development and environment sphere against the background of the MDGs; ▪ to highlight the current lack of reliable and continuous access to relevant data and information, both within and, more importantly, across disciplines; ▪ to highlight examples where existing or emerging SDI capacities have made a difference. <p>Expected outcome:</p> <ul style="list-style-type: none"> ▪ an understanding of the status of and challenges faced by SDI developments in various application fields and the benefits it can bring to both UN agencies, Member States and Regional Organizations.

<p>11.45</p>	<p>Session 2: Regional and national reporting on SDI development status</p> <p>Regional SDI Development Status Reports -Latin America and Caribbean (Cuba)- Dra.Tatiana Delgado -Europe (INSPIRE-EC-JRC SDI Unit)- Mr. Alessandro Annoni</p> <p>(10 min presentations)</p> <p>-Invited Statements by national and regional SDIs authorities/institutions (5 min presentations) - Chile-H.E. Ms Romy Schmidt; Cuba-Dra.Tatiana Delgado; Nigeria-Dr. Ganiy Agbaje; Spain-Mr. José Alonso Jimenez</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ selected countries and institutions present regional SDI development status reports for the Latin America and Caribbean and European Regions; ▪ national and regional SDI representatives make brief statement about national/regional organization specific aspects of the regional reports. <p>Expected outcome:</p> <ul style="list-style-type: none"> ▪ a clear picture of where national and regional SDI developments currently stand, their future plans, also taking into account the UNSDI development process and technical and institutional problems faced.
<p>13.15</p>	<p>Summary of the morning session by the Day Chair</p>	<p>Mr. Jeff Tschirley</p>
<p>13.30</p>	<p>Lunch</p>	<p>Buffet lunch served in Bld 14</p>
<p>14.30</p>	<p>Session 3: Capacities and Tools for Geospatial Information Access, Management and Analysis</p> <p>-The Heterogeneous Missions Accessibility (HMA) Capacity.....ESA Dr. Pier Giorgio Marchetti</p> <p>-Interoperability capacities and developments.....UNGIWG TG4 Mr. Jeroen Ticheler</p> <p>-The ESA-FAO GEO Portal.....ESA Ms. Frederique Berenbach</p> <p>-DevInfo: Standards for Digital Maps Used for Monitoring Human Development..... UNDG (UNICEF) Messrs. Nicolas Pron-Kris Oswalt</p> <p>-UNOSAT Operational Satellite Applications Programme</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ overview of current operational and near future capacities for provision of access to data and information, interoperability services and integrated data analysis; ▪ overview of current and near future data availability and quality realities and measures underway in cooperation, among others with Member Countries and Regional Organizations to overcome problems and shortcomings; ▪ demonstrations of current capacities. <p>Expected outcomes:</p> <ul style="list-style-type: none"> ▪ a clear understanding what currently available technologies offer and what near future and mid-term developments will add; ▪ an understanding what the data availability and quality ‘bottlenecks’ are and how the UN system and Member Countries can work together to alleviate and overcome these real-life problems.

	<p>.....UNITAR Mr. Olivier Senegas -Integrated Data Analysis Capacities in Open Source.....SDI, Spain Dr. Salvador Bayarri -Emerging Technologies to support E-collaboration in Geo-applications: From GRID to Living LabsESA Dr. Luigi Fusco (5-10 min presentations)</p>	
<p>15.30</p>	<p>Session 4: UNSDI Vision, Strategy and Implementation Plan</p> <p><i>Mr. Barry L. Henricksen, Senior UNGIWG Consultant</i></p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ inform the global partners about the “UNSDI Vision, Implementation Strategy and Reference Architecture” with a view to engaging them in a structured discussion on the establishment of the two-way process between the UNGIWG Members, SDI developments in Member States and Regional Organizations, required for the successful development and implementation of the UNSDI; ▪ outline the various elements of the UNSDI Implementation Plan, using the development matrix developed prior to the meeting. <p>Expected outcome:</p> <ul style="list-style-type: none"> ▪ a clear understanding by the global partners of the envisioned UNSDI development process and its implementation plans and modalities;

15.45	<p>Session 5: Breakout Groups**</p> <p>-Review and formulation of institutional issues for UNSDI <i>Co-Chairs: Dra. Tatiana Delgado Fernandez; Executive Secretary, National SDI Commission; Havana, Cuba</i> <i>Mr. Alessandro Annoni; Head, EC-JRC SDI Unit Ispra, Italy</i></p> <p><i>Rapporteur: Dr. Gabor Remetey-Fülöpp; Secretary-General, HUNAGI; Secretary GSDI Association, Budapest, Hungary</i></p> <p>-Review and formulation of technical issues for UNSDI <i>Chair: Prof. Michael Gould; Jaume I University, Castellòn, Spain</i></p> <p><i>Rapporteur: Drs. Jan Cees Venema; Head, UNSDI- Netherlands Coordination Office (NCO); Amsterdam, The Netherlands</i></p> <p><i>(coffee and tea will be served during the breakout sessions)</i></p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ suitably composed breakout groups (UN agency representatives and national/regional SDI authorities) review, discuss and define ‘institutional’ and ‘technical ‘ issues confronting the UNSDI development process during its preparatory and implementation phases, including the relevant policy frameworks; ▪ formulation of recommendations for presentation to UN Agency Management and national and regional SDI decision makers to facilitate and support the UNSDI implementation as a two-way process between the UN System and Member Countries; ▪ definition of designated UNGIWG Secretariat and national/regional-level contact points for coordinated follow-up action and associated timelines. <p>Expected outcomes:</p> <ul style="list-style-type: none"> ▪ a clear understanding of institutional and technical issues facing the UNSDI development and implementation process; ▪ a set of concrete and workable recommendations for coordinated presentation to UN and national/regional-level Higher Management for enabling the UNSDI development and implementation as a mutually beneficial process; ▪ agreed timelines for coordinated action between the UNGIW Secretariat and defined national and regional-level contact points.
	17.30	<p>Reporting of breakout groups</p>
18.15	<p>Reception offered by ESA at ESRIN</p>	<p>Bld 14</p>
20.00	<p>Dinner in Frascati; Ristorante “Cacciani”</p>	

Friday, 2 March		<i>Day Chair: Mr. Suha Ulgen, Technical Coordinator, UN-OCHA</i>
9.00	<p>Session 6: Activities and experiences of national UNSDI Coordination Offices</p> <p>-Netherlands.....Drs. Jan Cees Venema, Head, NCO -Czech Republic.....Dr. Karel Charvat, Head, CCO -Hungary.....Dr. Gabor Remetey, Head, HUCO -The INSPIRE-UNSDI Connection.....Mr. Alessandro Annoni, EC-JRC</p> <p>(10 min presentations)</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ reporting on establishment, activities and plans by the three UNSDI Coordinating Offices in The Netherlands, Czech Republic and Hungary; ▪ highlighting of issues and obstacles faced in these ‘guinea pig’ national UNSDI processes; ▪ presentation of the UNSDI National Coordinating Office (NCO) concept; ▪ coordination and cooperation at European level for supporting UNSDI development in the context of INSPIRE. <p>Expected outcomes:</p> <ul style="list-style-type: none"> ▪ a clear idea of what is involved in starting up UNSDI development activities at national level and issues and problems faced; ▪ a clear idea of the potential UNSDI development process support in the context of INSPIRE; ▪ agreement on the definition and scope of the NCO concept though the institutional and technical breakout groups..
9.40	<p>Session 7: UNSDI Partner Programmes, Institutions and Support Mechanisms</p> <p>Invited Statements by technical and institutional partner programmes (5 min presentations)</p> <p>-Global Spatial Data Infrastructure (GSDI) Association Dr. Jarmo Ratia</p> <p>-Group on Earth Observations (GEO) Dr. Giovanni Rum -Open Geospatial Consortium (OGC) Prof. Mike Jackson -European Umbrella Organization for Geographic Information (EUROGI) Prof. Mauro Salvemini</p> <p>- Consortium for Geospatial Information (CSI); Consultative Group on International Agricultural Research (CGIAR); Ms. Enrica Porcari</p> <p>-International Institute for Geo-Information Science and Earth Observation (ITC) Prof. Martien Molenaar</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ invited presentations by UNSDI-related institutions and programmes outlining their potential links with and contributions to the UNSDI development process; ▪ definition of UNSDI coordination aspects with identified partner organizations and programmes; ▪ identification of possible cooperative and financial support mechanisms for UNSDI. <p>Expected outcomes:</p> <ul style="list-style-type: none"> ▪ a clear idea of ‘who’s doing what and what for’ in UNSDI related programmes and projects; ▪ an idea of possible development support mechanisms for UNSDI; ▪ an agreed coordination mechanism between UNGIWG-UNSDI and identified partner institutions and programmes.

	<ul style="list-style-type: none"> - Environmental Systems Research Institute (ESRI) Dr. Carmelle J. Terborgh - Centre for Earth Information Science (CIESIN) Mr. Greg Yetman - Open Grid Forum (OGF) Dr. Craig Lee - International Steering Committee for Global Mapping (ISCGM) Mr. Chris Higgins - UN Office for Outer Space Affairs (UNOOSA) Dr. Werner Balogh 	
11.45	Coffee break	
12.00	<p>Panel discussion on “The Joys and Responsibilities of Partnering and Coordination”</p> <p><i>Chair: Prof. Mike Jackson</i> <i>Director, Centre for Geospatial Science</i> <i>University of Nottingham, Nottingham, U.K.</i></p> <p><i>Rapporteur: Dr. Astrid Marschatz</i> <i>United Nations Development Group (UNDG)</i> <i>New York, USA</i></p>	<p>Participants: selected representatives from UN Agencies, Member States, Regional Organizations and potential Partner Programmes</p> <p>Objectives: - to deliberate on the opportunities and associated responsibilities and discipline of effective partnerships and good coordination; - to define the challenges and requirements of a ‘UNSDI Culture’ in support of and for the benefit of the ‘geospatial commons’, including and beyond technology and databases.</p> <p>Expected outcome: a clear idea of a possible ‘UNSDI Culture’ between the United Nations and its Member States for the benefit of both, including the ‘geospatial commons’, and the requirements for effective partnerships in this context.</p>
13.20	UGPM Group photograph	Bld 14

13.45	L u n c h	Buffet lunch served in Bld 14
14.45	Session 8 Country case study presentation and discussion; NIMAC-Liberia.....UNDP-Liberia	Ms. Margaret Hall; participants
15.10	Reporting of breakout groups	Group Chairs and Rapporteurs
16.30	Closing statement by FAO-UNGIWG Co-Chair	Mr. Jeff Tschirley

* All presenters will be provided with a UGPM presentation template and content instructions

** The breakout groups will be structured in the form of workshops with moderators and rapporteurs

