

Department of Public Information

CARTOGRAPHY AND GEOGRAPHIC INFORMATION SCIENCE

Report on the Meeting of the United Nations Geographic Information Working Group

United Nations, New York, 28-30 March 2000



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NOTES

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PREFACE

An inter-departmental, inter-agency meeting on cartography and geographic information science was organized by the Cartographic Section of the Library and Information Resources Division of the Department of Public Information. It was the culmination of several years of efforts to bring together colleagues within the United Nations system to address common issues affecting the work of the Organization in these fields. Since 1996, the Cartographic Section has been running an informal working group on geographic information comprised of interested staff members from various departments at Headquarters. In the past two years, discussions have been extended to other specialized agencies and programmes and uncovered a number of common interests, including the establishment of a common United Nations Geographic Database. Primarily it became clear that connectivity and data sharing must be among the key aspects of United Nations reform.

This effort received the full support of many United Nations departments, specialized agencies and programmes, as well as non-governmental organizations (NGOs) and industry, as evidenced by the supportive statements found in Annex I. In particular, the Geographic Database project has been recognized as a vital, capacity-building tool for the Organization with potential benefits for many developing nations.

With this in mind, the objectives of the meeting were: (1) to understand the needs of each agency and programme with respect to mapping projects, geographic information systems (GIS) initiatives and spatial data holdings; (2) to discuss the merits of developing a common United Nations Geographic Database; and (3) to establish policies and procedures for collaboration in handling geographic information. Over 70 experts attended the meeting. Participants represented a broad cross-section of the work of the Organization and were accompanied by a number of leading experts from NGOs, scientific organizations and industry.

The meeting was principally organized around presentations documenting on-going projects, explaining critical issues and tabling recommendations. These were followed by open discussions on problems and suggestions for the development of a common geographic database and the role of the United Nations Geographic Information Working Group. The meeting concluded with the adoption of a resolution to set in motion the work of the Working Group. The salient aspects of the deliberations are summarized in the following report.



OPENING REMARKS

Mr. Raymond Sommereyns (Director, Library and Information Resources Division, Department of Public Information) welcomed the participants at what promised to be an historic meeting.

Mr. Kensaku Hogen (Under-Secretary-General, Department of Public Information) said that, in recent years, the world had seen an unprecedented increase in phenomena such as natural disasters, internal conflict and cross-border disputes that made geospatial information essential to and posed particular challenges for the United Nations.

Rapid technological advances meant that the critical geographical information could be made available, at short notice and in readily digestible forms, to help deal with those situations at many levels, but the key was collaboration and cooperation between the many agencies and entities that were generating or compiling the data needed, to avoid duplication of effort and ensure the optimum use of resources.

The challenge before the meeting which, for the first time, gathered together experts from the United Nations, its specialized agencies and industry was to see where and how they could help each other. The proposed establishment of a common United Nations Geographic Database would provide a springboard for their actions and a first step toward ensuring a partnership between the United Nations, which could not work in isolation, civil society and the private sector.

Mr. Santiago Borrero (Vice-Chair, Global Spatial Data Infrastructure Steering Committee) welcomed the proposed establishment of the United Nations Geographic Database which would make it possible to collect spatial data from thousands of servers, National Mapping Agencies and other geographic information producers. The project was a priority in terms of United Nations technical, administrative and financial efficiency and of other global information initiatives and sustainable development goals.

The Global Spatial Data Infrastructure (GSDI) initiative encompassed the policies, organizational remits, data technologies, standards, delivery mechanisms and financial and human resources needed to ensure that organizations and other entities working at the global and regional scales were not impeded in their objectives. The proposed Geographic Database would undoubtedly benefit from GSDI in terms of the collection and integration of various digital datasets.

Along the same lines, the Global Mapping project, established in the context of Agenda 21, was designed to facilitate implementation of global agreements for environmental protection, mitigation of disasters and growth within sustainable development. It was a digital geographic data set at a scale of 1:1 million, composed of eight thematic data layers. The data was available at a minimal cost and without restriction on non-commercial use. As at the end of February 2000, 75 nations were participating in the on-going project. Further efforts were needed to incorporate other nations and regions, particularly Africa. A meeting of the International Steering Committee for Global Mapping (ISCGM) in March 2000 in Cape Town, South Africa, had agreed that practical collaboration would be developed with the embryonic Geographic Database to avoid duplication of effort and share information on user requirements.

The relationship between spatial data, information technologies, economic growth and development was widely recognized. However, in the developing world, limited information, including geographic data, was a major handicap to the efficiency of decision-makers and planners. Spatial data, geographic information science and Decision Support Systems were valuable instruments in increasing the role of civil society in its own well-being and democracy, but availability and accessibility of data were limited and the lack of reliable, updated information meant that decision-makers were often having to work in the dark. Hence the need for flows of information, particularly in developing countries where limited resources could be applied to generating geographic information that was not being developed by other agencies or entities. Hence the need for multilateral organizations to share the knowledge they had and to identify gaps in existing data.

Mr. Miklos Pinther (Chief, Cartographic Section, Library and Information Resources Division, Department of Public Information) said that the United Nations Economic and Social Council (ECOSOC) had recognized the value of surveying and mapping sciences as early as 1948 in its resolution of 19 February of that year on Coordination of Cartographic Services of Specialized Agencies and International Organizations. Since then, however, the effects and accuracy of spatial data had acquired even greater importance and relevance to the work of the United Nations, its agencies, non-governmental organizations, civil society and industry, and the idea of working in isolation was no longer feasible.

An informal Geographic Information Working Group, an inter-departmental, inter-agency group, had provided a basis for discussing common goals and problems and had prompted the idea of holding a meeting of experts to look together at the geospatial data that was available, where and how it was located, how it could be exchanged and what the partners could do to optimize their resources and help each other, formally to establish the Working Group under the United Nations Administrative Committee on Coordination (ACC), and to discuss the United Nations Geographic Database project.



GEOGRAPHIC DATABASE

UNITED NATIONS GEOGRAPHIC DATABASE PROJECT

Ms. Alice Chow (Geographic Information Systems Officer, Cartographic Section, Library and Information Resources Division, Department of Public Information (DPI)) explained that the Cartographic Section was responsible for providing cartographic and geographic services to the United Nations which required geospatial information for its daily operations, from Security Council briefings to peacekeeping operations on the ground.

There was a critical need for geographic information to be shared and coordinated. Data sets, where they existed, were often of varied quality or did not reflect the appropriate views and policies of the United Nations, in the case of agreed territorial boundaries for example. There was no common database and a lack of comparative analyses. Nor were there mandates, guidelines or standards for sharing existing information in cases where units or programmes did use digital map data. Similarly, the absence of formal arrangements with National Mapping Agencies of Member States meant that any information in their databases was difficult to obtain.

Thus, the United Nations Geographic Database project was designed to develop and maintain a global geographic database containing basic cartographic elements and toponymic information to serve as a geo-referenced base for overlaying and exchanging information within the United Nations system. It would reflect the views and policies of the Organization and revolutionize the way in which various components of the United Nations interacted in pursuit of common goals. The database would be multi-scale to cater to the need for data for field operations and other more general uses such as planning and report writing.

The layers of geographic data would include national boundaries, first and second order administrative units, drainage, elevation, transportation networks, settlements, and so forth. Attribute data associated with the layers would include the geographic names of settlements, administrative units and major physical features. The aim would be for users at United Nations offices around the world to extract data as needed and provide inputs and new information so that the database could be continuously updated, improved and

maintained. The database would also be supplemented with commercial data and information from National Mapping Agencies.

The project would be submitted to the United Nations Fund for International Partnerships (UNFIP) for funding. The first phase of the project would include efforts to: examine the needs of every organizational entity; compile information on available and accessible databases (metadata inventory); develop database designs and standards, such as those of Technical Committee 211 on Geographic Information/Geomatics of the International Organization for Standardization (ISO/TC 211); develop pilot applications and prototypes; develop hardware and network designs; and establish collaborative arrangements among United Nations agencies and programmes, National Mapping Agencies and industry partners. A needs assessment would be conducted with the assistance of the Geographic Information Working Group.

The most important lesson to take away from the meeting was, however, the importance of collaboration and maintenance in that the database needed to be an entity that could grow, evolve and provide a flexible response to user requirements.

DATA DISSEMINATION PROTOTYPE

Mr. José Aguilar-Manjarrez (Information Systems Officer, GILF Division, Food and Agriculture Organization of the United Nations (FAO)) said that FAO was involved in the collection, storage and manipulation of vast amounts of geographic data. The ability to plan and develop the world's resources by any organization would depend on access to reliable, accurate and timely data in the form of text, numbers, maps and imagery. That consideration had led FAO to establish the World Agricultural Information Centre (WAICENT). That had been followed by the setting up of a GIS Policy Group in 1997 which had concluded that an inventory of all FAO geo-referenced databases had to be compiled; major gaps in existing databases had to be identified; a GIS meta-database should be developed; and common GIS data standards had to be agreed.

WAICENT, the main gateway for disseminating FAO information resources, jointly with the Environment and Natural Resource Service (SDRN) had created FAOMAP, an online searching and browsing catalogue of key GIS maps. It was designed to provide GIS users with key base maps and a mechanism for users to share maps and avoid duplication of effort in terms of creating or recreating them and a catalogue of FAO spatial information. It was a "live" system in that FAO GIS users could add maps to the system through the web-based maintenance module and modify map details. It had an open-user interface which meant that information could be stored on CD-ROM as an alternative to access through the Internet.

The first version of FAOMAP had been developed at no cost to other FAO departments and would be provided to United Nations agencies, international organizations and NGOs free of charge. It could also provide invaluable experience during the first phase of the United Nations Geographic Database project.



PRESENTATIONS

UNITED NATIONS EXPERTS

FIELD OPERATIONS

Moderator:

Mr. Stan Carlson (Chief, Situation Centre, Department of Peacekeeping Operations (DPKO))

Presenters:

- **Ms. Helga Pieper-Hoeweling**
(Mine Action Service, DPKO)
- **Mr. Kyoung-Soo Eom**
(Engineering Officer, Logistics and Communications Service, Field Administration and Logistics Division, DPKO)
- **Ms. Immaculée Uwanyiligira**
(Computer Information Systems Officer, Situation Centre, DPKO)
- **Mr. Dennis King**
(Office of Emergency Programmes, United Nations Children’s Fund (UNICEF))
- **Mr. Jean-Yves Bouchardy**
(Head, GIS/Mapping Unit, Operations Support Division, Office of the United Nations High Commissioner for Refugees (UNHCR))

The participants agreed that common to all field operations was the need for basic, clear and coordinated geographic information that could be easily accessed and updated, and customized to the specific needs of the operation. They needed to be able to add their own layers (political boundaries, climate and so forth) and work with information whose scale was suitable to the operation. That information was crucial at every stage of a field operation – planning, budgeting, execution, liquidation, and most definitely invaluable to the people on the ground carrying out the mission, a fact that made communication between Headquarters and the field even more essential. An appreciation of terrain, the movements of refugees, location of water resources, and even harmonized geographical place names, for example, were indispensable.

That information was not always available, however, and operations had to manage with rudimentary tools such as paper maps, even when geographic information was available elsewhere, either with national governments or military entities but could not be accessed for military, strategic or financial reasons. Conditions in the field led to difficulties in collecting primary data and operation budgets often failed to make provision for information resources.

Several initiatives had been set up, such as the Information Management for Mine Action (IMSMA) which was standardizing data format to make data consolidation and evaluation possible and performed day-to-day local information management tasks. UNICEF had set up a pilot GIS project in Turkey following the earthquake in 1999 and hoped to apply its experience elsewhere in the field. UNHCR had established a Geographic Mapping Unit in 1999 and proposed to develop regional GIS coordinators to address geographic information needs at the field level. In addition, Office for the Coordination of Humanitarian Affairs (OCHA), World Food Programme (WFP), UNICEF, FAO and UNHCR had set up a working group called the Geographic Information Support Team (GIST) to improve GIS coordination during complex humanitarian emergencies. For example, during the Kosovo operation, commonly structured databases using a standard coding system (Position code or Pcode) had greatly enhanced co-ordination efforts among different agencies. A document, SHARE (Structured Humanitarian Assistance Reporting), regarding needs and standards was being finalized. It focused on developing standards for information collection and sharing, in particular with regard to geographic information.

In general, the feeling was that agencies were working in isolation, which meant that efforts were being duplicated, that they needed greater GIS resources and training and that they would benefit greatly from an overall United Nations Geographic Database that could be tailored to their specific needs, help coordination at Headquarters and in the field, improve response time in the event of emergencies and improve operational capacity. The establishment of GIST served as a good example of collaboration among agencies to reduce duplication of effort.

POLITICAL AND DEVELOPMENT ISSUES

Moderator:

Mr. Peter Gilruth (Senior Technical Advisor, Environmental Information Systems, Office to Combat Desertification and Drought, Division for Sustainable Energy and Environment, United Nations Development Programme (UNDP))

Presenters:

- **Mr. Adnan Abd-Elrazek**
(Political Affairs Officer, Division for Palestinian Rights, Department of Political Affairs (DPA))
- **Ms. Barbara Masciangelo**
(Treaty Section, Office of Legal Affairs (OLA))

- **Mr. Jay Moor**
(Coordinator, Global Urban Observatory, United Nations Centre for Human Settlements (Habitat))
- **Mr. Thorsten Arndt**
(Information Associate, Office to Combat Desertification and Drought, Division for Sustainable Energy and Environment, UNDP)
- **Mr. Jacob Gyamfi-Aidoo**
(Coordinator, Program on Environment Information Systems in Sub-Saharan Africa, World Bank)

The Division for Palestinian Rights had found that, although limited, its GIS experience had been salutary in preserving and updating records of the United Nations Conciliation Commission for Palestine (UNCCP) and putting them into electronic format. A geographic database had been established and contained various useful layers, such as villages/subdistricts, armistice lines and tax categories so that electronic records could be read and linked.

The Treaty Series of the United Nations, which was published under Article 102 of the Charter of the United Nations, comprised more than 35,000 bilateral and multilateral agreements, some with attachments, including maps, establishing, for example, legally recognized boundaries between countries. The advantage of a United Nations Geographic Database would be considerable and help coordinate the technical information and support systems that would ultimately enable the Treaty Series to be disseminated further and ensure quality of reproduction.

Development, which had long been dependent on the Governments of Members States had seen a change in entry points with the increasing involvement of local authorities and the growth of the “bottom-up” approach to development issues, as pointed out during the United Nations Conference on Human Settlements (Habitat II) in Istanbul in 1996. For that, information and an efficient data collection system were of the utmost importance, as was a capacity-building network at the various levels to be able to pass information on from one level to another, with access to databases containing information that could be useful to other United Nations agencies.

Information technology was widely available but delivery services needed to be strengthened and, above all, coordinated. The potential for GIS was enormous if inter-agency cooperation, enthusiasm, clarity in the respective roles of Governments and the United Nations and the sustainability of the system could be guaranteed. Efforts had to be made to devise common policies, aims and products, core data sets and data maintenance tools, effective communication and networking sets, and to clarify data custodians. As important as it was to see where information was available, in what form and how it could be standardized and shared, it was no less urgent that efforts be made to see where data was sketchy or non-existent and to undertake a needs assessment exercise system-wide.

So, from a paper-based organization, the United Nations had to move effectively into the technological age and make the most of the experience of its agencies, civil society and the private sector.

ENVIRONMENT AND HEALTH

Moderator:

Mr. Tony Burton (System Analyst, Vaccine Assessment and Monitoring, Department of Vaccines and Other Biologicals, World Health Organization (WHO))

Presenters:

- **Mr. Ashbindu Singh**
(Regional Coordinator, Environmental Information and Assessment – North America, United Nations Environment Programme (UNEP))
- **Mr. Marek Baranowski**
(Director, Global Resource Information Database (GRID)-Warsaw, UNEP)
- **Mr. Philippe Rekacewicz**
(Geographer/Cartographer, GRID-Arendal, UNEP)
- **Mr. Subhrendu Gangopadhyay**
(Associate Expert, World Water Vision Unit, World Water Council, Division of Water Sciences, United Nations Educational, Scientific and Cultural Organization (UNESCO))
- **Mr. Steeve Ebener**
(Technical Officer, Global Programme on Evidence for Health Policy, Evidence and Information for Policy Cluster, WHO)
- **Mr. Jean-Pierre Meert and Ms. Kathy O’Neill**
(Programme Manager and Technical Officer, WHO/UNICEF Joint Programme on Data Management and Mapping – HealthMap, Department of Communicable Disease Surveillance and Response, WHO)

GIS data was vital to efforts to deal with environmental issues, to answer the basic questions of what was happening, where and why. The spread of advanced technology, remote sensing, and better forecasting techniques and models was being checked by a lack of funding at the governmental level, limited dialogue between technicians and decision-makers and a reluctance to share data.

There was a marked change in emphasis in data collection and demands, from single to interdisciplinary assessments, from single to multiple-risk assessments, from post-event to real-time event responses and from paper to digital products. The UNEP/GRID project had established a network of centres to enhance the availability of data sets and provide for the integration, analysis and visualization of data from multiple sources to provide a scientific basis for decision-making. Its data sets used different scales according to application. It could provide expert assistance to the United Nations Geographic Database project given its acquired knowledge and expertise, for example in ISO-compliant Metadata Standard and Clearinghouses and access to data using remote sensing. National

spatial databases (general, topographic and thematic) had been set up and projects such as CORINE Land Cover and Digital Map of the Baltic Sea Region (MapBSR), which were European databases, were providing an effective means of collecting, transferring and sharing information. A host of mapping-related projects were under way and could provide an invaluable source of data for the United Nations project.

It was again evident from what was being said at the meeting that agencies were working toward the same ends and required such similar data that overall coordination was essential. The same problems cropped up for all agencies - a lack of resources and time, maintenance of data, compatibility of format, to name but a few areas. Data producers and users should put their heads together to determine what was needed and how to meet those requirements. There was also a need to define which indicators did not exist, and work from there to bridge the gap.

The legal aspects of GIS, such as copyright, disclaimers and so forth were another key area to be investigated. WHO, for example, made every effort to ensure that its maps and protocols were legally sound and reflected the boundaries and policies recognized in WHO.

CARTOGRAPHY AND GEOGRAPHIC INFORMATION

Moderator:

Mr. Gabriel Gabella (Senior Economic Affairs Officer, Natural Resources and Small Islands Branch, Division for Sustainable Development, Department of Economic and Social Affairs (DESA))

Presenters:

- **Mr. Jacob J. Burke**
(Economic Affairs Officer, Natural Resources and Small Islands Branch, Division for Sustainable Development, DESA)
- **Mr. Ergin Ataman**
(Manager, Geographic Information Systems Unit, Environment and Natural Resources Service, FAO)
- **Mr. David Lewtas**
(Chief, Cartographic Unit, Aeronautical Information and Charts Section, Air Navigation Bureau, International Civil Aviation Organization (ICAO))
- **Mr. Alain Retiere**
(Rehabilitation Advisor, Consulting, Advisory, R&D Unit, RESS Division – Geneva, United Nations Office for Project Services (UNOPS))
- **Mr. Gregory Prakas**
(Chief Cartographer, Printing and Graphics Division, General Services Department, World Bank)

DESA was concerned with finding geographic standards that were as flexible and as broad as possible, to cater to as many users as possible. Through its programme of

technical cooperation, it was able to try out products available. Projects in Africa, where a common data set had been established, used GIS data mainly to determine boundaries, as in the Okavango project.

In FAO, GIS was used mainly for site suitability analyses and for the development and management of natural resources. Therefore, most of the FAO GIS datasets represented physical parameters such as soils, vegetation cover, land-use, water resources, climate and so forth. FAO had about 2,000 GIS maps in various stages of completion and about 4,000 paper maps. In order to inventory these maps, a “Map Catalogue Database” (MCDB) had been developed based on MS-ACCESS software. The first version of the MCDB containing only GIS maps (not paper maps) would be ready for distribution by August 2000.

An inventory of all the maps in the United Nations system was important to avoid compiling similar maps and developing similar data sets, and would improve database compatibility between various agencies. A central map catalogue and some basic United Nations map standards would help to resolve such problems. FAO would welcome an inter-agency agreement for a shared geographic database, an inventory of all major maps available within the United Nations system and an electronic catalogue for searching them, and standardization of GIS maps and formats within the United Nations system. MCDB software described above could be used to create this United Nations map inventory/catalogue and could be made available to other United Nations agencies for evaluation.

For standardization of subnational codes, FAO had prepared a draft document for evaluation by other United Nations agencies, as well as a list of core GIS datasets and a description of MCDB. FAO was also involved in a major initiative to develop new maps and improve existing global data sets in cooperation with other international partners. Some of the data sets would probably be needed by other United Nations agencies as well. FAO was keen to cooperate with other United Nations agencies in the development and improvement of the data sets and would welcome any suggestions for future collaboration among United Nations agencies.

The main activity of ICAO was promoting safety in international civil aviation. That included the development of technical standards for 17 types of aeronautical charts covering all phases of flight and aircraft ground movement. States were responsible for the production and distribution of these operational charts while ICAO published information on their availability.

As with the other agencies, ICAO relied heavily on geographic data in its day-to-day work and, in particular, to support the planning of air navigation facilities worldwide. Regional planning charts were produced (hard copy, ArcView shape and Portable Document Format (PDF) file output) showing air routes and facilities such as aerodromes and navigation aids. An airport characteristics databank and other aeronautical databases were also maintained. To facilitate accurate satellite-based navigation, aeronautical charting was based on the World Geodetic Datum of 1984 (WGS-84) and a defined

quality system. A multi-scale database including elevation data and with international boundaries reflecting the United Nations perspective would be most suited to its work.

The aim of UNOPS, as its name suggested, was programme management. It had no programme of its own and no funding for activities since it was funded by fees for services rendered. Its clients included UNDP, UNHCR, the International Labour Organization (ILO) and other international organizations, whereas its partners included consultants, NGOs, the banking and construction industries, for example. It was trying to make its products and services more viable and negotiate partnerships with the private sector and local research institutes in the area of geographic information, a highly rated service to be provided through its role of focal point, and of relevance to all of its varied clients and partners. It could provide the United Nations system with valuable corporate experience in outsourcing remote sensing and GIS services.

The World Bank produced thematic maps and metadata for its work. 4,000 of its digital maps were available on its map viewer, but could be accessed only by World Bank staff via the Intranet. It had hoped to put the viewer online, but the name “Mapviewer” had already been registered on the Internet, which raised the issue of copyright and trademarks, another area that the United Nations and its partners should consider during the meeting and prior to the establishment of a United Nations Geographic Database.

Ideally, a United Nations Geographic Database would provide viable online global coverage with basic vector layers (ensuring that the quality was higher than that of products available commercially); broad topographic and basic hydrographic data; main road networks (by category, with a minimum of three classes), human settlements and basic socio-economic data sets, particularly at the subnational level; and a digital library with images and raster maps.

The question of the hierarchy of data needed to be looked into, for example with geodetic data at the top and thematic data lower down, as did the sequence in which data sets were to be compiled.

INTERNATIONAL OBSERVERS AND INDUSTRY EXPERTS

OVERVIEW OF GLOBAL AND REGIONAL GEOGRAPHIC DATABASE INITIATIVES

Moderator:

Mr. Henry Tom (Director, International Market Development, Global Spatial Solutions, Oracle Corporation, <http://www.oracle.com>)

Presenters:

- **Mr. Henry Tom**
- **Mr. Robert Chen**

(Deputy Director, Center for International Earth Science Information Network (CIESIN), <http://www.ciesin.org>)

- **Mr. Mark Reichardt**
(Secretariat, GSDI Steering Committee, <http://www.gsdi.org>)
- **Mr. Timothy Trainor**
(Chair, Commission on Regional and National Atlases, International Cartographic Association (ICA), <http://www.icaci.org>)
- **Mr. Claude Luzet**
(Executive Director, Multipurpose European Ground Related Information Network (MEGRIN), <http://www.megrin.org>)
- **Mr. Chris Duhring**
(Solutions Architect, Professional Services, Silicon Graphics Inc. (SGI), <http://www.sgi.com>)

GLOBAL AND REGIONAL GEOGRAPHIC DATABASES

by Henry Tom, Oracle Corporation

Spatial Data Infrastructures (SDIs) were characterized by the growing user community and market for spatial and location-based data, the transition from maps to spatial databases, the need for a coordinated approach for access to spatial data and technology at the local, national, regional and global levels, integration between those levels and the establishment of location-related protocols.

The sources of geographic databases had grown enormously at the different levels, including the Global Mapping project, MEGRIN and the Digital Earth initiative, to mention but a few. The United Nations geographic database sources included UNEP/GRID, the United Nations Group of Experts on Geographical Names (UNGEGN), the Commission on Sustainable Development, agency-based projects such as FAO-AFRICOVER and many more. Multinational banks, such as the World Bank, the Inter-American Development Bank and so forth were a further source of geographic databases.

ISO/TC 211 was working on the development of a family of data content standards, many of which would be issued in 2000. The most important spatial standard anticipated from ISO in coming months involved metadata. It would greatly enhance the potential for discovering, accessing and acquiring spatial data throughout the global community. Nations and organizations had to be encouraged to adopt the standard as rapidly as possible to improve the ability of the United Nations and other organizations to conduct global searches of spatial information assets.

The Open GIS Consortium (OGC) was a non-profit organization that aimed to address the lack of interoperability among systems that processed geo-referenced data and between the systems and mainstream computing systems. It drew its membership from business, government and academic institutions and was working with ISO/TC 211 on geographic and geometric data standards through its Coordination Group (TOCG).

Given the variety and level of data sources available, the three key words were coordination, cooperation and collaboration. The United Nations Geographic Database could play a leadership role in providing a gateway to geographic information on a global basis.

ACCESSING AND INTEGRATING MULTIDISCIPLINARY GLOBAL CHANGE DATA

by Robert Chen, CIESIN

CIESIN specialized in global and regional network development, science data management, decision support and training and education and technical consultation services. It provided a host of data and services such as data set guides, with information on most data sets accessible through CIESIN's Gateway, an effective search engine, an open process site for the Intergovernmental Panel on Climate Change (IPCC), and interactive mapping and protocols. Metadata for key data sets was catalogued by CIESIN and all metadata was made freely available online.

The challenges posed by integrated global socioeconomic data were considerable, not least in the areas of spatial consistency, integration and the temporal aspects of data and gridding.

GLOBAL SPATIAL DATA INFRASTRUCTURE

by Mark Reichardt, GSDI

The basic aim of GSDI was to encourage the growth of spatial data infrastructures which could support collaboration on regional and global issues of importance. Its focus areas included awareness and outreach in so far as it emphasized the importance of spatial data infrastructures for decision-making, encouraged exchanges of information on proven practices, including on the basis of case studies. It had compiled an SDI Implementation Guide to promote the spread of globally compatible SDIs through the identification of international standards and widely accepted proven practices. The Implementation Guide provided a wealth of information on SDIs including discussion of metadata and standards, visualization, geodata development and cataloguing. The GSDI promoted the establishment of regional SDI committees, tried to expand connectivity to the World Wide Web, and otherwise provided a reference environment for the United Nations, the private sector, NGOs and other entities, for compatible SDIs.

The building blocks for a United Nations Geographic Database were in place. The task ahead was to identify assets, create metadata for geospatial information holdings such as cost, control, liability, advertise the data and services available, ensure consistency through proven practices and standards and establish partnerships - the motto being to share, not recreate, to interoperate, not redesign.

INTERNATIONAL CARTOGRAPHIC ASSOCIATION

by Timothy Trainor, ICA

The International Cartographic Association was a voluntary international professional association with approximately 80 member nations. ICA, through its Commissions, whose work included education and training, maps and the internet and mapping from satellite imagery, could provide valuable input to the Geographic Database project. Representatives of ICA would be willing to attend United Nations workshops and seminars around the world and the Association would welcome suggestions from the United Nations on topics for ICA to consider in its work. Collaboration with ICA would provide an excellent opportunity for the United Nations to publicize its project requirements, provide information and influence and encourage the work of ICA Commissions.

MULTIPURPOSE EUROPEAN GROUND RELATED INFORMATION NETWORK (MEGRIN) AND THE INTERNATIONAL STEERING COMMITTEE FOR GLOBAL MAPPING (ISCGM)

by Claude Luzet, MEGRIN

The background to the work of MEGRIN was the fact that all National Mapping Agencies had common concerns in technical, organizational and legal areas, that it benefited from a discussion and exchange platform, and that cross-border issues had increased, requiring dedicated and permanent resources and a business-like structure.

It had found that national databases were not interoperable and that technical differences abounded in terms of format, standard, semantics and language and policy differences on access rights, price policy and so forth – issues that called for harmonization mechanisms.

Its ongoing activities included work on the Geographical Data Description Directory (GDDD), a harmonized description of 360 digital maps; the LaClef/EuroMapFinder which should be fully operational by December 2000, fully multilingual, with an Extensible Markup Language (XML) protocol and a wide product range; the Seamless Administrative Boundaries of Europe (SABE) data set which comprised official national data from 26 countries with 100,000 polygons geometrically and semantically harmonized and maintained on a continuous basis. MEGRIN was also involved in the European Territorial Management Information Infrastructure project (ETeMII), mostly within work package 3 (WP3) dealing with “reference data”, and the Global Mapping Project, coordinating the creation of the European combined 1:1 million scale dataset, based on the MapBSR experience.

Its experience had shown that extensive geographic information projects needed multi-year planning, source data was not interoperable, data maintenance was critical and data sources and quality were generally difficult to assess. Many of the obstacles it faced in its

work were due to the fact that resources were lacking and awareness of the importance of geographic information had to be raised among decision-makers and politicians.

Above all, collaboration and maintenance were the key to success.

The United Nations Geographic Database should consider an action plan that focused on reference data which was centrally stored and could be used by all; cataloguing in terms of United Nations system data and GIS-related projects, and links to other metadata resources; coordination and agreements within the United Nations, with National Mapping Agencies and other data owners, and on distributed databases.

Efforts were needed to assess the various internal needs of the United Nations, define its common “reference data”, use existing global and/or regional initiatives and bridge the gaps in existing data.

DISTRIBUTED GEOGRAPHIC INFORMATION SYSTEMS TECHNOLOGY

by Chris Duhring, Silicon Graphics Inc.

An architectural approach to matching users’ needs to technology included spatial information and infrastructure technologies. Users needed to develop an objective architecture in defining common definitions and language, identify scenarios that exemplified the role of spatial imagery and information in the United Nations and answer a series of key questions such as the kind of spatial imagery used, workflow, projections for the future and current and planned applications. They would also have to identify a phased implementation plan which corresponded to budget and resource limitations and took account of the availability of technology.

The diversity of users which could be categorized as map consumers, information consumers and enterprise users; the global extent of the United Nations system; and the range of information and systems already in place also had to be considered.



OPEN DEBATES

REQUIREMENTS AND DESIGN OF THE UNITED NATIONS GEOGRAPHIC DATABASE

Moderator:

Mr. Mark Reichardt (Secretariat, GSDI Steering Committee)

The first step would be to draw up a short-term plan as part of a longer-term strategy to address the full implementation of a global United Nations Geographic Database.

Firstly, a basic data set needed to be defined - a minimal but accurate set of specific data types that were essential for most United Nations mission requirements for mapping, decision support, analysis and visualization. From there, other critical data could be applied and referenced to address social, environmental and economic issues relevant to United Nations missions. It was essential to determine priorities for the establishment of core data which could begin with administrative boundaries (primary and subnational, at a resolution that could support small to large-scale representation), transportation networks for assessing the movement of peoples, and hydrographic and geodetic information.

Secondly, existing geospatial assets within the United Nations community needed to be assessed and inventoried not just to ascertain where data was available but also, and just as importantly, to see where data was missing, unsuitable, incorrect or outdated. Key to that process would be the cataloguing of those assets via accepted metadata standards and tools. Metadata for United Nations holdings should be collected on a priority basis and clear methodologies for catalogue items had to be defined and agreed upon by all partners. Obviously, geospatial information with little supporting data or with little potential usefulness should be entered with minimal metadata simply to acknowledge that it existed, but other more essential or well-documented geospatial data should have more detailed metadata recorded. From there, a series of metadata templates should be established and made available on the Internet.

On a longer-term basis, United Nations policy, procedures and guidelines for geospatial operations should be considered with a view to ensuring a level of consistency and interoperability. Maintenance requirements should also be investigated.

Each United Nations organizational unit needed to develop clear guidance for coordination with external stakeholders to promote sound, basic data collection methodologies. Those guidelines should include accepted international standards and practices.

Policies would have to be drawn up to deal with the question of how administrative borders and other potentially disputed areas would be handled, and of the handling, licencing and confidentiality of sources.

The United Nations should work to ensure that funding sources for programmes sponsored by the Organization mandated the use of geospatial standards, metadata and proven practices in agreements with nations and other entities. Those agreements should set out clearly data-sharing responsibilities for geographic information produced under funded programmes, which should help improve the consistency, usefulness, maintenance and accessibility of data. There was also a need to help potential users producing and using data and indexing since the traditional concept of one-dimensional maps was outdated.

It was essential for the United Nations to work with existing data-producing or standardizing bodies and projects, such as the GSDI, regional Spatial Data Committees, the Open GIS Consortium and ISO/TC 211.

A follow-up session should be held later in 2000 to develop the elements of a strategic plan for progress on the Geographic Database, possibly in two parts: one to give a technical overview of and details on GSDI and other standards and clearinghouses, and the other to look at policy formation for internal and external operations.

PROBLEMS AND POSSIBLE SOLUTIONS IN DEVELOPING CLOSE COOPERATION WITH CARTOGRAPHIC AND GEOGRAPHIC SERVICES OF MEMBER STATES

Moderator:

Mr. Claude Luzet (Executive Director, MEGRIN)

One of the main problems was the level of demand, from peacekeeping operations, for example for products that could be produced or distributed rapidly and that could be updated regularly in response to conditions on the ground. Often when the only existing information was in the hands of the Member States themselves the response was too slow to meet operational requirements.

Resources for cartography, geographic information and digitalization were simply not available in many countries, particularly developing countries and countries with

economies in transition, or such areas were not given high priority in Member States' development strategies.

The unprecedented speed with which information technology had developed meant that training in information technology was essential at every level, on the ground and in Member States.

There was a lack of formal State-level agreements between the United Nations and Member States on the provision and sharing of geographic information. National cartographic agencies were often unable to share the information they had at their disposal without the express permission of the State.

The Geographic Database should be careful not to over-expend itself and launch too ambitious a project too soon but instead concentrate on a pilot area, gain experience there and then apply the lessons learned on a more global basis. It should canvas producers and users to determine requirements, see what technical and other problems needed to be solved and by whom, decide who or what was "the producer", "the user" and "the maintainer" and what software and other applications were or would be needed. From an industry point of view, the United Nations needed to be very clear about what it wanted and expected from the business sector. It also needed to look at the issue of copyright and other licencing restrictions and work out ways to overcome any obstacles they may pose.

The General Assembly should be urged to impress upon Member States the need to deposit cartographic information with the United Nations, to reach general agreements on ongoing supplies of information to the Geographic Database and specific agreements to cover high-scale multi-format data, for peacekeeping operations in particular. The United Nations and its specialized agencies should consider the feasibility of making the provision of data by Member States part of technical cooperation agreements.

Agreements of understanding with national civil and/or military agencies should be encouraged and the benefits to Member States of sharing information, ultimately as a cost-reduction exercise, should be highlighted.



INDUSTRY SHOWCASE

One of the key components to ensure the success of the United Nations Geographic Database project is private sector involvement. Hence, leading companies in the geo-industry were invited to participate in the Industry Showcase to demonstrate the latest technology in spatial data handling and to provide their professional inputs to the project.

OPENING REMARKS

Mr. Lance McKee (Vice President, Corporate Communications, Open GIS Consortium, <http://www.opengis.org>)

Open GIS Consortium (OGC) was a not-for-profit, international, industry consortium of commercial, government and academic organizations whose mission was to develop open geo-processing interface standards. Its vision was to complete the integration of spatial data and spatial processing in information systems worldwide. Internet computing was the way of the future. Interactive web-based access to information from many sources by many users should be the model adopted by the United Nations to enable open access to geographic information system-wide.

Painful realities were shared by many of the participants - limited ways to locate sources of data, lack of interoperability, institutional issues, lack of data coordination and so forth. Hence, the major challenge for OGC was to establish standard interfaces for interoperability based on users defined requirements.

OGC organized sponsor-funded interoperability initiatives including rapid prototyping, feasibility studies and pilot programmes. The Web Mapping Testbed (WMT) was the first of OGC's planned interoperability initiatives. WMT Phase I was completed in September 1999 and Phase II was ongoing. The results of WMT would no doubt have a significant positive influence on the growth of very useful low-cost web-based spatial applications accessible by the United Nations and by communities around the globe.

PRESENTATIONS

Moderator:

Ms. Alice Chow (GIS Officer, Cartographic Section, Library and Information Resources Division, DPI)

Presenters:

- **Mr. Beau Jarvis**
(Senior Account Manager, ERDAS Northern Region, <http://www.erdas.com>)
- **Ms. Carmelle J. Côté**
(International Relations/GIS Consultant, Environmental System Research Institute Inc., <http://www.esri.com>)
- **Mr. Ian Willcox**
(Business Development Manager, Laser-Scan Ltd., <http://www.laser-scan.com>)
- **Mr. Matthew Powers**
(Manager, Commercial Exploitation Solution, Imagery & Geospatial Solutions, Lockheed Martin, <http://www.lmco.com>)
- **Mr. Steven Fanjoy**
(Executive Director, Global Spatial Solutions, Oracle Corporation, <http://www.oracle.com>)
- **Ms. Tish Williams**
(Vice President, Strategic Business Development, Space Imaging, <http://www.spaceimaging.com>)

Presentations included three-dimensional terrain visualization, mobile solutions to field operations, web mapping technology, geographic analysis techniques, satellite imagery and aerial photography, and solutions to spatially enable an enterprise or body such as the United Nations.



GEOGRAPHIC INFORMATION WORKING GROUP

ESTABLISHMENT OF THE UNITED NATIONS GEOGRAPHIC INFORMATION WORKING GROUP

Mr. Miklos Pinther (Chief, Cartographic Section, Library and Information Resources Division, Department of Public Information) said that since 1996, the occasional meetings of an informal geographic information working group at Headquarters had proved to be helpful in addressing common problems and in keeping up with emerging technological changes. More recently, the Cartographic Section had received strong support from colleagues outside Headquarters in New York for forming a system-wide, formal working group. A proposal was submitted to the Assistant Secretary-General for Policy Coordination and Inter-agency Affairs to formalize the group in the more organized framework of the Administrative Committee on Coordination (ACC). At its 16th session, the Consultative Committee on Programme and Operational Questions (CCPOQ) of ACC considered and strongly endorsed this initiative and invited the Working Group to bring to its attention any matter requiring its support.

Participants recognized the now formally established United Nations Geographic Information Working Group (UNGIWG) and adopted the following resolution.

RESOLUTION

The United Nations Geographic Information Working Group,

Recalling that at its sixteenth session, held in Geneva from 29 February to 2 March 2000, the Consultative Committee on Programme and Operational Questions endorsed the proposal of the Secretary of the Administrative Committee on Coordination to bring the work of the informal Working Group more closely into the framework of the Consultative Committee and the Administrative Committee,

Noting that the meeting of the group of experts from various departments, agencies and programmes, held at United Nations Headquarters from 28 to 30 March 2000, constituted the first formal meeting of the Working Group,

Recalling and drawing inspiration from Economic and Social Council resolution 131 (VI) of 19 February 1948, entitled “Coordination of cartographic services of specialized agencies and international organizations”,

Recognizing the increasing complexity of the operational requirements and rapid technological advances that have occurred since then,

Reaffirming the need to increase awareness and share knowledge about and to create and ensure system support for all aspects of cartography, geographic information and spatial data infrastructures, and the need to adopt those aims,

Stressing the importance of a common United Nations geographic database as a crucial capacity-building effort to enhance normative, programme and operational capabilities and efficiencies,

Having as its principal objectives the urgent development of this database and its maintenance,

Welcoming the support of and stressing the need for close collaboration with the Steering Committee of the Global Spatial Data Infrastructure, the International Steering Committee for Global Mapping and Technical Committee 211 on Geographic Information/Geomatics of the International Organization for Standardization,

Acknowledging the work and initiatives of regional and national spatial data infrastructures,

Acknowledging the expressed support of non-governmental organizations, industry and research institutions,

- (1) **Decides to appoint the Chief of the Cartographic Section of the Department of Public Information as the Chair of the Working Group;**
- (2) **Invites each department, agency and programme of the United Nations system to appoint a focal point to the Working Group, and requests the Secretary of the Consultative Committee on Programme and Operational Questions to assist in this task;**
- (3) **Requests the Chair to establish, with the help of the focal points, a secretariat for the Working Group;**
- (4) **Also requests the Chair to invite the General Assembly to consider the initiation of formal collaboration with national mapping authorities;**
- (5) **Further requests the Chair to investigate possible collaboration with non-governmental organizations, industry and research institutions;**
- (6) **Requests the Chair to investigate possible funding sources to support the work of the Working Group;**
- (7) **Also requests the Chair to appoint, with the help of the focal points, a core group of task managers to formulate recommendations, including, *inter alia*, on the following:**
 - (a) **Compiling an inventory of existing cartographic products and geographic databases;**
 - (b) **Adopting and promoting cartographic and geographic information system standards;**
 - (c) **Assessing needs for the development of new databases;**
 - (d) **Promoting understanding of the benefits of geographic information and the sharing and dissemination of geographic information within the United Nations system;**
 - (e) **Considering mechanisms to improve the division of labour and efficiency for data collection, data sharing and data dissemination.**

PROPOSED FOLLOW-UP ACTIONS

In addition to the action items stated in the resolution, the Working Group considered the following proposals as action items for the next twelve months.

It was proposed that a meeting of the United Nations Geographic Information Working Group be held in November 2000;

At the invitation of the International Steering Committee for Global Mapping, the Working Group was requested to present a paper outlining the programme of mutual cooperation in the development of the United Nations Geographic Database at the Global Mapping Forum, to be held from 28 to 30 November 2000 in Hiroshima, Japan;

At the invitation of the Steering Committee of the Global Spatial Data Infrastructure and the Permanent Committee for Spatial Data Infrastructure for the Americas, the Working Group was requested to submit the paper to the fifth GSDI conference to be held from 22 to 24 May 2001 in Cartagena, Colombia;

At the invitation of the GSDI Steering Committee, the Working Group was requested to submit its requirements to the GSDI Global Survey and to include the United Nations Geographic Database in the GSDI clearinghouse network;

At the invitation of the GSDI Steering Committee, the Chair of the Working Group is to become a member of the GSDI Steering Committee.



CLOSURE OF THE MEETING

Mr. Raymond Sommereyns (Director, Library and Information Resources Division, Department of Public Information) congratulated the participants on the successful conclusion of a truly ground-breaking meeting on cartography and geographic information science. The United Nations, specialized agencies and programmes, international institutions and industry partners had all contributed enormously to clarifying the role of the Organization in the area of cartography and geographic science and preparing it for the task ahead.

Hopefully, the first meeting of the United Nations Geographic Information Working Group, which had yielded so much, would pave the way for the future and lead to a stronger United Nations.



ANNEXES

ANNEX I

PRESENTATIONS, PAPERS AND COMMUNICATIONS

This annex is divided into three parts. The first is a list of presentations and papers given by the meeting participants. The second is a list of papers and communications from colleagues who could not attend the meeting. Actual files of these presentations, papers and communications can be downloaded from the United Nations Cartographic Section website at <http://www.un.org/Depts/Cartographic/english/htmain.htm>. The final part contains the opening and concluding remarks, statement from the Consultative Committee on Programme and Operational Questions (CCPOQ) of the Administrative Committee on Coordination (ACC) and support statements from various international organizations.

PART I – LIST OF PRESENTATIONS AND PAPERS BY MEETING PARTICIPANTS

AGUILAR-MANJARREZ José, FAO, “Disseminating spatial data through the Web to the UN community”, presentation, 7 slides.

AGUILAR-MANJARREZ José, LI Yanyun and MORTEO Karl, FAO, “FAOMAP - FAO’s online searching and browsing catalogue of key Geographic Information Systems (GIS) maps”, paper, 17 pages.

ATAMAN Ergin, FAO, “FAO GIS Activities”, presentation, 21 slides.

ATAMAN Ergin, BUNTING Gillian and ZANETTI Marina, FAO, “FAO GIS Databases, Core-List”, paper, 4 pages.

ATAMAN Ergin and BUNTING Gillian, FAO, “Outline of a FAO Map Catalogue Database”, paper, 18 pages.

ATAMAN Ergin and ZANETTI Marina, FAO, “FAO Administrative Codes Proposal”, paper, 3 pages.

BARANOWSKI Marek, UNEP, “Some European Initiatives for GIS Database Creation and Mapping”, presentation, 9 slides.

BORRERO Santiago, GSDI, “United Nations Meeting on cartography and geographic information science”, presentation, 8 slides.

BOUCHARDY Jean-Yves, UNHCR, “Geographic Information Within UNHCR”, presentation, 35 slides.

BURTON Tony, WHO, “Mapping Applications and Activities: Department of Vaccines and Biologicals, World Health Organization”, presentation, 16 slides.

CHEN Robert and BALK Deborah, CIESIN, “Accessing and Integrating Multidisciplinary Global Change Data”, presentation, 19 slides.

CHOW Alice, DPI, “United Nations Geographic Database”, presentation, 30 slides.

CÔTÉ Carmelle J., ESRI, “United Nations Geographic Database”, presentation, 46 slides.

DUHRING Chris, SGI, “Matching User’s Needs to Technology – An Architectural Approach”, presentation, 11 slides.

EBENER Steeve, WHO, “The use of GIS in the Global Programme on Evidence for Health Policy (GPE)”, presentation, 12 slides.

EOM Kyoung-Soo, DPKO, “Geographic Information System for the UN Peacekeeping Operations”, presentation, 8 slides.

GABELLA Gabriel, DESA, “GIS Initiatives and Related Activities promoted by the Natural Resources and Small Islands Branch, Division for Sustainable Development, at DESA”, paper, 2 pages.

GANGOPADHYAY Subhrendu, UNESCO, “World Freshwater Assessment Programme”, presentation, 3 slides.

GANGOPADHYAY Subhrendu, UNESCO, “UN World Water Assessment Programme”, paper, 5 pages and 1 table.

GILRUTH Peter, UNDP, “Development of a Pilot System on the Use of Geographic Information in Project Monitoring for UNDP Country Offices”, presentation, 1 slide.

GYAMFI-AIDOO Jacob, World Bank, “The EIS Program - Program on Environmental Information Systems in Sub-Saharan Africa”, presentation, 12 slides.

LEWTAS David, ICAO, “Cartography at the International Civil Aviation Organization”, presentation, 14 slides.

LUZET Claude, MEGRIN, “A potential European contribution to the UN geo-DB”, presentation, 43 slides.

LUZET Claude, MEGRIN, “CERCO-MEGRIN: an update”, paper, 6 pages.

MASCIANGELO Barbara, OLA, “United Nations Treaty Series”, paper, 6 pages.

MCKEE Lance, OGC, “Enabling Open Access to Geographic Information in UN Programs”, presentation, 12 slides.

MOOR Jay, UNCHS (Habitat), “The Global Urban Observatory”, paper, 2 pages.

PINTHER Miklos and CHOW Alice, DPI, “United Nations Geographic Database”, paper, 6 pages.

POWERS Matthew, Lockheed Martin, “Imagery & Geospatial Solutions (IGS)”, presentation, 11 slides (not available on the website).

REICHARDT Mark, GSDI, “Global Spatial Data Infrastructure”, presentation, 18 slides.

RETIERE Alain, UNOPS, “UNOPS and GIS”, presentation, 24 slides.

SANDEV Robert, OLA, “Division for Ocean Affairs and Law of the Sea, Office of Legal Affairs, United Nations Headquarters”, paper, 3 pages.

SINGH Ashbindu, UNEP, “Geographic Databases within UNEP”, presentation, 10 slides.

TOM Henry, Oracle, “Geographic Databases: Regional & Global Initiatives”, presentation, 44 slides.

UWANYILIGIRA Immaculée, DPKO, “Situation Centre Needs”, paper, 1 page.

WILLIAMS Tish, Space Imaging, “United Nations Spectrum of Need”, presentation, 38 slides.

PART II – LIST OF PAPERS AND COMMUNICATIONS FROM OTHERS

MISSOTTEN Robert, Senior Programme Specialist, Division of Earth Sciences, UNESCO, r.missotten@unesco.org
Paper on “UNESCO’s scientific maps programme – Overview”, 4 pages.

RECALDE Pablo, Head, Vam Unit, Technical Support Service, Operations Department, World Food Programme (WFP), recalde@wfp.org
Paper and presentation on “An Overview of Vulnerability Analysis and Mapping (VAM)”, 5 pages and 19 slides.

SHRESTHA Surendra, Regional Coordinator/Director, Environment Assessment Programme for Asia and the Pacific, UNEP, surendra@ait.ac.th
Communication to describe the work of the Regional Resource Centre for the Asia and the Pacific Region of UNEP, to express support to the Geographic Database project and to offer to coordinate the activities for the project for the Asia and Pacific Region.

STEVENS David, GIS/LIS Expert, Illicit Crops Monitoring Programme, United Nations Office for Drug Control and Crime Prevention (UNDCP), David.Stevens@undcp.org
Communication to describe UNDCP’s Illicit Crops Monitoring Programme with focus on training and capacity-building, spatial data, base data, internet-based solutions and spatial data browsers, and to express full support to the Geographic Database project.

PART III – STATEMENTS

- Opening remarks by Mr. Kensaku Hogen, Under-Secretary-General, Department of Public Information
- Response by Mr. Santiago Borrero, Vice-Chair, Global Spatial Data Infrastructure Steering Committee
- Concluding remarks by Mr. Raymond Sommereyns, Director, Library and Information Resources Division, Department of Public Information
- Statement by Mr. Eckhard W. Hein, CCPOQ/ACC Secretary
- Statement by Mr. Minoru Akiyama, Secretary General, International Steering Committee for Global Mapping
- Statement by Mr. Timothy Trainor, Chair, Commission on National and Regional Atlases, International Cartographic Association

OPENING REMARKS

by

Mr. Kensaku Hogen

Under-Secretary-General for Communications and
Public Information

Meeting on Cartography and Geographic Information Science
United Nations Headquarters, New York
28 March 2000

Distinguished Guests,
Colleagues,
Ladies and Gentlemen,

I am delighted to welcome you to this inter-departmental, inter-agency meeting of experts on cartography and geographic information science. We are happy to see here today our colleagues from more than a dozen specialized agencies and programmes, joining those of us representing various departments at the Secretariat. We are also honored by the presence and participation of distinguished experts from various organizations and segments of the industry.

Surely, I need not tell you what revolutionary changes have taken place in the past decade in the field of cartography and geographic information sciences. And no doubt, you bring to this table a sharpened vision of what is to come in the next few years. Let me highlight some of the issues that led us to the organization of this meeting.

During the past thirty years, we have witnessed unprecedented upheavals in natural disasters. Thousands of people have been uprooted and have perished due to floods, hurricanes, forest fires and earthquakes. The humanitarian and economic costs of these natural disasters are at least three times greater than what they were during the first half of the 20th century.

The last thirty years also brought us armed conflicts at brutal, genocidal levels. Increasingly, they involved not only cross-border clashes, but also internal strife, which has affected younger and younger populations. By affecting children so dramatically, the very roots of many societies have been profoundly shaken.

These events pose dramatic challenges for the United Nations.

So, how does this relate to the task before us?

Geospatial information is fundamental to what happens, where, and why. Therefore, your field is key to the work of the Organization. Today, it is possible to rapidly disperse critical geographic information in readily digestible form. How can, therefore, your technological advancements benefit the decision-makers, and how can they lead to unification and equalization? You bring to us different experiences and

talents, pulled together by your common thread and common vision. Your gathering here is an indication that you have an increasingly clearer understanding of how to tackle problems in your field through collective action.

Geography is a major integrative force. The same geographic data is commonly needed by wide-ranging programmes, projects and operations. It is, however, expensive to collect, and moreover, it makes up most of the cost of GIS implementations. Hence, it is obvious that by promoting interaction, redundancy can be minimized and data use can be optimized.

But, what is the level of cooperation? How much of this information is accessible and shared readily?

These are the principal questions that have brought us here today. We have labeled this meeting a historic occasion, because this is the first time that a structured, inter-agency, task-oriented group is being formed.

The Cartographic Section has addressed another issue, namely the establishment of a common United Nations Geographic Database, a database that would be jointly created and maintained by the agencies and programmes. This project will be the glue that will hold you together. That will be your strength.

We need your collective wisdom during the next two days to analyze and plan these initiatives and to examine what the role of the United Nations should be. As United Nations Secretary-General Kofi Annan has mentioned on several occasions, we alone in the United Nations can do little. Now, and in the years to come, we must work in partnership with civil society, with the private sector, with non-governmental organizations, foundations and universities. We are, therefore, grateful for the participation and support of the distinguished observers and industry experts who are with us today.

I wish you success in your work and future collaboration.

RESPONSE

by

Mr. Santiago Borrero

GSDI Steering Committee Vice-Chair

United Nations Meeting on Cartography and Geographic information science

New York, 28 March 2000

Mr. Kensaku Hogen, Mr. Raymond Sommereyns, Mr. Miklos Pinther, distinguished participants:

1. Introduction

The scientific geographic community has been deeply concerned about the role of mapping in the information era, in particular, in computer and telecommunication technology.

An indicator can be found by reviewing the case of the Internet from the proceedings of the International Cartographic Association-ICA conferences. In Barcelona (1995) in spite of concern on issues such as users, standards and distribution aspects, no papers were submitted dealing with this subject; in Stockholm (1997) there was one, titled "Trends in Internet Map Use" concluding that "*international implications of the Internet for cartography are enormous and...A considerable amount of work still needs to be done to expand the network and improve methods of map distribution and map interaction*". In Ottawa, last year, the ICA conference devoted a whole session to the "Information Highway and Map Web applications".

It was 1993 when "Mapping the Next millennium" by Stephen Hall was published, a book full of ideas on how computer-driven cartography is revolutionizing science, and reinventing geography.

It is in this context that I found extremely appealing this Meeting and the proposed new UN Geographic Database. The possibility to collect spatial data from thousands of servers, the national mapping agencies and related geo information producers, combined with the one produced within the UN system, will impact the efficiency of the Organization and that of billions of users.

We are now living the announced "*Next*" millennium.

2. The Global Spatial Data Infrastructure – GSDI

I am here today representing the GSDI initiative. Established in 1996, the definition of GSDI is "*... the policies, organizational remits, data technologies, standards, delivery mechanisms, and financial and human resources necessary to ensure that those working at the global and regional scale are not impeded in meeting their objectives...*".

The GSDI is managed by a steering committee, comprising representatives from the regions of the world and a cross section of the GSDI stakeholder's community. Four working groups develop the work activities of the steering committee: operations, technical aspects, communication and awareness, legal and economic.

The contribution of GSDI is already relevant:

- GSDI is inducing the development of Decision Support Systems concerning complex situations
- In the context of the UNRCCs, GSDI contributes to the creation of permanent committees on GIS/SDI regional issues, (i.e. The Americas)
- GSDI is backing the formation of national spatial data infrastructures. As of now, at different levels of development, there are 45 initiatives
- Increasing awareness on the need "to sustain" SDI production for Agenda 21. Linking local, national, regional and global data

The GSDI steering committee has commissioned a major study into the business case to identify the economic, social, environmental and disaster management benefits that can be achieved through development of national, regional and global SDI.

Recently the 4th GSDI Conference took place in Cape Town – Theme: "Engaging Emerging Economies". The next conference, under the theme "GSDI, Sustainable Development and Decision-making" will take place in Cartagena, Colombia in May 2001.

On the occasion of this Meeting, the GSDI Chair, Mr. Derek Clarke sent a letter to the UN. I quote the following: *"It is hoped the UN system and the GSDI Steering Committee can establish a cooperative working arrangement to our mutual benefit. The UN is particularly requested to take cognizance of the ongoing work of the GSDI Steering Committee in spearheading the establishment of spatial data infrastructures at the national, regional and, ultimately, global levels. The UN's proposed geographic database will no doubt benefit from GSDI in terms of the collection and integration of various digital data sets."*

3. The International Steering Committee on Global Mapping - ISCGM

Along with Mr. Claude Luzet, I am also here representing the Global Map project. Established in 1996, in the context of Agenda 21, this project intends to facilitate implementation of global agreements for environmental protection, mitigation of disasters and growth within sustainable development.

Global Map is a digital geographic data set at a scale of 1:1 million. GM is composed of eight thematic data layers: transportation, boundaries, drainage, population centers, elevation, vegetation, land cover and land use. GM is a contribution of national mapping and related organizations. Global Map is planned as an on-going project. The data will be updated at regular intervals. The product will be available at minimal cost and without restriction on non-commercial use.

With support from the UN, participation in the project is relevant. 75 nations as of the end of February with 37 more considering. However, a major effort must be done to obtain the incorporation of other nations and regions, particularly Africa.*

Commemorating the successful completion of phase one, a Global Forum will be held in Hiroshima, Japan, November 28-30 2000. Next, in order to define the second phase, the 8th ISCGM Meeting will take place in Colombia, along with the GSDI 5th Conference.

The need for cooperation between the UN Geographic database and the Global Map project was identified during the 1999 ICA Conference in Ottawa. Most recently at the 7th ISCGM Meeting held this past March 16 in Cape Town, it was agreed that practical collaboration will be developed, avoiding duplication and sharing information on users requirements, at the same time each project runs towards their own objectives. From the letter sent to Mr. Miklos Pinther by the ISCGM Secretary, Mr. Minoru Akiyama, from Japan, I quote the following: *ISCGM “1.congratulates the UN Cartographic Section on their objective to develop a geographic database for the UN system; 2. Agrees that such a database is critical for effective decision-making in the UN; 6. Encourages the UN Cartographic Section to use the Global Map product as a primary source of fundamental geographic information in the UN database; 8. Offers to work closely with the UN Cartographic Section in development of the UN database”.*

4. Spatial data and decision-making: the view from the developing world

I am here also as Director General of the Geographic Institute of Colombia. I know the production line in many mapping agencies in the developing world and I like to briefly touch on the subject of the UN Geo Database from this perspective.

Today, the direct relation existing between spatial data, information technologies, economic growth, social well being and the knowledge society is obvious. However, when looking at this scenario from our reality, the situation may look different.

The 1999 World Development Report, for instance, documents how decision-makers everywhere takes decisions using limited information and how this situation deteriorates when looking at the developing world. The new IT and the amount of data now produced should change the capacity to improve the way decisions are made about the environment, natural resources, and land use. Even more spatial data combined with GIS and Decision Support Systems offer an opportunity for greater public participation, therefore, as Mr. Kensaku Hogen, UN Under-Secretary-General, Department of Public Information, has said “increasing the role of civil society”, and democracy.

However, too many mapping institutions are in the process of defining their own data sets in the digital format and too many are still digitizing the past, at a time when information exist, in other latitudes, updated and ready for deliver as part of modern data infrastructures.

Allow me to touch ground on this subject by presenting an example, provided by Colombia. If I combine the digital information available at my Institute, at different scales and for different applications, the result is the one shown in the figure. Now, let us concentrate on the blank areas, where there is no digital data. Precisely, this is the zone where the majority of illegal crops are being cultivated. It is also part of the Amazons and the Orinoco basins. Digital data covering this territory exists within other national and international organizations, yet is not accessible. Therefore, in spite of this reality and the fact that this is a problem of major international concern, the Colombian government has to make decisions, impacting land use and land tenure in these areas without access to more relevant and complete sources of information.

As part of this new reality of spatial data infrastructures, space cartographic missions and one meter resolution satellite data, my impression is that national mapping agencies in developing nations should be devoting the scarce resources allocated to the production of data that no other geo information developer is producing. This could be of great benefit to all parties.

This is why, concerning the need for SDI, it is considered highly relevant to obtain a more clear statement from the multilateral organizations, especially from the United Nations. Moreover, when thinking about such new statements as “making the benefits of IT accessible to all nations”, the UN direct involvement is essential.

5. Conclusions on the UN Geographic Database

I would like to conclude this presentation by saying that the UN Geographic Database project must be understood not only as a priority in terms of UN technical, administrative and financial efficiency but also concerning sound execution of other global information initiatives and humankind sustainable development goals.

The World Bank in its report “Knowledge for development”, considers that if information problems are not properly addressed “*the poorest countries and communities will fall behind more rapidly than ever before*”. Therefore this project is relevant also when trying to reduce the increasing gap between knowledge societies and developing nations. We must stop this new kind of isolation.

GSDI and Global Mapping as well as national mapping agencies are interested parties in this UN project, by linking in a two way system effectively local to national, regional and global spatial data.

Finally, I must recall to you that the UN system is the global forum to better understand and adequately formulate policy concerning spatial information and sustainable development. A major concern of all UN state members.

Thank you for your attention.

**Please note that appropriate bibliographic references have not been made in this address.*

CLOSING REMARKS

by

Mr. Raymond Sommereyns

Director

Library and Information Resources Division

United Nations Department of Public Information

Meeting on Cartography and Geographic Information Science

New York, 30 March 2000

Dear Colleagues

Guests

Ladies and Gentlemen

I would like to congratulate you on the successful conclusion of what must be recognized as a truly ground-breaking meeting on cartography and geographic information sciences. You have given us very useful explanation of your work at the different agencies, departments and programmes. You have demonstrated your achievements as well as your needs. You have generously shared your ideas for future collaboration, for the functioning of your new Working Group and for the establishment of a common United Nations Geographic Database. Allow me to pay tribute to the talent and effort you have each contributed toward paving the way of the future role of the Organization in your field.

I would first of all like to thank the colleagues from the different departments here at the Secretariat and the colleagues from the various programmes and specialized agencies, who took time out from their busy schedule not only to travel long distances to get here, but also to thoughtfully reflect upon their work and carefully prepare their contributions to the tasks before us. There is always value in constructive reflection, and we hope that this meeting provided new insights for you.

I would like to thank the representatives from several institutions, particularly, CIESIN, GSDI, ICA, ISCGM, MEGRIN, and the Open GIS Consortium for sharing their experiences and giving us guidance.

It goes without saying that the contribution of the industry is indispensable. We especially appreciate the early support of Mr. Jack Dangermond, President of ESRI, to the Geographic Database project and his generosity to the United Nations. We thank SGI for their valuable advice for the development of the project proposal, and Laser-Scan for their technical inputs. And we thank Lockheed Martin, ERDAS, and Space Imaging for their technical briefings and for pointing out that indeed, remote sensing will play, and is playing, a vital role in our work.

Special gratitude is due to Santiago Borrero of the Republic of Colombia and Henry Tom of Oracle Corporation for their leadership role in these meetings and for their pledge of continued support.

Lastly, I would like to thank the staff of the Cartographic Section of the Department of Public Information who individually and collectively spent countless hours to organize this meeting. Special thanks are due to Alice Chow, whose tireless energy and creativity by now must be evident to you all. And, of course, without the vision of Miklos Pinther, and his tenacity in the face of countless hurdles, this Working Group, this Project, this meeting, would not have happened.

We hope that this first meeting of the Geographic Information Working Group, and the vision you share, will be the torch light for your future work and that it will lead to a stronger Organization for the benefit of all.

STATEMENT ON INTER-AGENCY COLLABORATION IN CARTOGRAPHY AND GIS ACTIVITIES

The Consultative Committee on Programme and Operational Questions (CCPOQ) of the Administrative Committee on Coordination (ACC) considered the initiative of the Cartographic Section, Library and Information Resources Division, Department of Public Information, to establish a closer inter-agency dialogue among those involved cartographic and geographic information (GIS) activities.

The Committee welcomed the initiative and felt that it was an important and timely step. The increasing importance of such activities and their growing supportive role in many areas of work of the system was fully recognized. Equally, the capacity-building aspect of the planned database was emphasized. Its potential for fostering increased collaboration was well accepted.

In general, the intention to bring together the expertise of the system in a manner that facilitates a dialogue with other partners is seen as a crucial step in ensuring the continued validity and relevance of our work in the interest of our member countries.

CCPOQ, for this reason, strongly supported the envisaged closer linkage with the new Geographic Information Working Group. It invited the Working Group to bring to its attention any matter and issue requiring its support.

The Committee should promote complementarities and mobilize the UN system's analytical, normative and operational capacities for economic and social development. For this reason, there could be many occasions where the expected fruitful dialogue in the Working Group would lead to concrete results and recommendations, which are of considerable interest to the Committee. This would also include work at the field level within the framework of the Resident Coordinator System. Concrete collaborative action at the field level may well benefit from recommendations, which may emerge from the important tasks pursued by the Working Group.

We are confident that the meeting will pave the way for a well functioning and active Working Group. In the light of its decision, CCPOQ is well prepared to provide a suitable platform for taking-up relevant recommendations and issues emerging in the future from the Working Group.

Eckhard W. Hein
CCPOQ Secretary
24 March 2000

COMMUNICATION FROM THE INTERNATIONAL STEERING COMMITTEE FOR
GLOBAL MAPPING

To: Miklos Pinther
Cc: Santiago Borrero, Alice Chow, Claude Luzet, Peter Holland, Estes John,
Karen Kline, Yoshikazu Fukushima, Hiroshi Murakami
Subject: **ISCGM representatives for UN Meeting**
Date: 21 March 2000

Dear Mr. Pinther,

I just returned to my office after having the 7th ISCGM Meeting in Cape Town. The issue of collaboration with UN Geographic Database Project was discussed at the meeting. As a result, Mr. Santiago Borrero of IGAC Colombia and Mr. Claude Luzet of MEGRIN will attend your upcoming meeting representing ISCGM together with a letter from the Chairperson Prof. John E. Estes. The letter may include the following.

The International Steering Committee for Global Mapping (ISCGM):

1. Congratulates the United Nations Cartographic Section on their objective to develop a geographic database for the United Nations system;
2. Agrees that such a database is critical for effective decision-making in the United Nations;
3. Advises that the ISCGM is developing a global database with the support of national mapping agencies and the United Nations;
4. Encourages the United Nations Cartographic Section to maintain effective communication links with the ISCGM to avoid duplications and share information on user requirements;
5. Offers to act as a portal to national mapping agencies for their involvement in the database project;
6. Encourages the United Nations Cartographic Section to use the Global Map product as a primary source of fundamental geographic information in the database;
7. Offers to provide the Global Map product to the United Nations for unrestricted use on United Nations projects;
8. Offers to work closely with the United Nations Cartographic Section in development of database.

I wish your meeting be very successful.
Best regards,

Minoru Akiyama
Director, Geographic Department
Geographical Survey Institute, Japan
m-akiyama@gsi-mc.go.jp
Secretary General, ISCGM

INTERNATIONAL CARTOGRAPHIC ASSOCIATION
by
Mr. Timothy Trainor
Chair, ICA Commission on National and Regional Atlases
Presentation to the United Nations
Meeting on Cartography and Geographic Information Science
March 29, 2000

The International Cartographic Association (ICA) thanks the United Nations for their invitation to participate and observe during the meeting on cartography and geographic information science. The International Cartographic Association is a voluntary international professional association in which the members are nations. Currently, there are approximately 80 member nations.

The core work of the ICA takes place through its Commissions. Currently, there are 18 ICA Commissions that represent the diversity of issues of interest to the discipline. Examples of Commissions include: Education and Training; Map Production; Spatial Data Standards; Maps and the Internet; Mapping from Satellite Imagery; and a recently created Commission on Census Cartography.

The ICA, through its Commissions, can support the efforts of the UN by having representatives participate in workshops and seminars that are organized in venues around the world. The UN can contribute topics of interest to the Commission Chairs for their consideration in upcoming workshops and seminars. These venues also are an opportunity for the UN to advertise the project requirements, provide information on needs and status, and influence and encourage the work of the ICA Commissions.

Information about the ICA, member countries, Commissions, and upcoming events are available on the ICA web page at www.icaci.org where timely information is accessible to everyone.

The time schedule for the creation of a global geographic database to support UN mapping needs is ambitious and aggressive. The ICA supports the creation of this work and extends best wishes for its success.

ANNEX II

United Nations

**ECONOMIC
AND
SOCIAL COUNCIL**

Nations Unies

**CONSEIL
ECONOMIQUE
ET SOCIAL**

UNRESTRICTED

E/695

24 February 1948

ORIGINAL: ENGLISH

CO-ORDINATION OF CARTOGRAPHIC SERVICES OF SPECIALIZED
AGENCIES AND INTERNATIONAL ORGANIZATIONS

Resolution of 19 February 1948

WHEREAS accurate maps are a prerequisite to the proper development of the world resources which in many cases lie in relatively unexplored regions;

WHEREAS such maps facilitate international trade, promote safety of navigation, both in the air and in the sea, and provide information required for the study of measures of peaceful adjustment under Chapter VI of the Charter, and for the application of security measures contemplated in Chapter VII of the Charter;

WHEREAS the co-ordination of the cartographic services of the United Nations and Specialized Agencies, as well as those of the Member Nations, will result in significant economies in cost, time and personnel, and will contribute to the improvement of cartographic techniques and standards;

WHEREAS several Member Governments have already indicated their interest in a co-ordinated programme of international cartography;*

The Economic and Social Council therefore recommends:

1. That the Member Governments stimulate the accurate survey and mapping of their national territories;
2. That the Secretary-General take appropriate action, within the limits of budgetary availabilities;
 - (a) to further such efforts by promoting the exchange of technical information and other means, including the preparation of a study on modern cartographic methods and development of uniform international standards;
 - (b) to co-ordinate the plans and programmes of the United Nations and specialized agencies in the field of cartography, taking into account the work of the various governmental and non-governmental organizations and to report on the subject to a subsequent session of the Council;
 - (c) to develop close co-operation with cartographic services of interested Member Governments.

* Documents E/257, E/258 and E/483

United Nations
ECONOMIC
AND
SOCIAL COUNCIL

Nations Unies
CONSEIL
ECONOMIQUE
ET SOCIAL

UNRESTRICTED
E/695/Corr.1
17 March 1948
ORIGINAL: ENGLISH

CO-ORDINATION OF CARTOGRAPHIC SERVICES OF
SPECIALIZED AGENCIES AND INTERNATIONAL
ORGANIZATIONS
CORRIGENDUM

Page 1, paragraph 4, line 14

The word "governmental" should be replaced by "inter-governmental".

ANNEX III

AGENDA

Meeting Venue: Conference Room B

Industry Showcase: Dag Hammarskjöld Library Auditorium

Tuesday, 28 March 2000

9:30 – 10:00 *Registration*

10:00 – 11:00 Introductions by Mr. Raymond Sommereyns
Director, Library and Information Resources Division
Department of Public Information

Opening remarks by Mr. Kensaku Hogen
Under-Secretary-General, Department of Public Information

Response by Dr. Santiago Borrero
Vice-Chair, Global Spatial Data Infrastructure Steering Committee

Background and meeting objectives by Mr. Miklos Pinther
Chief, Cartographic Section, Library and Information Resources Division
Department of Public Information

Adoption of the agenda

11:00 – 12:00 Introduction of the United Nations Geographic Database Project by Ms. Alice Chow, GIS Officer, Cartographic Section, Library and Information Resources Division, Department of Public Information

Introduction of the Geographic Information Working Group under the Administrative Committee on Coordination / Consultative Committee on Programme and Operational Questions

Introduction of a Data Dissemination Prototype by Dr. José Aguilar-Manjarrez, Information Systems Officer, GILF Division, FAO

12:00 – 1:30 *Lunch*

1:30 – 5:00 **Industry Showcase at the Dag Hammarskjöld Library Auditorium**
Open to all United Nations staff, missions and NGOs

Opening remarks by Mr. Lance McKee
Vice President, Corporate Communications, Open GIS Consortium

Moderator: Ms. Alice Chow, Cartographic Section/LIRD/DPI

1:45 – 2:15 ERDAS, Inc.

2:15 – 2:45 Environmental Systems Research Institute, Inc.

2:45 – 3:15 Laser-Scan Ltd.

3:15 – 3:30 *Break*

3:30 – 4:00 Lockheed Martin

4:00 – 4:30 Oracle Corporation

4:30 – 5:00 Space Imaging

6:00 – 8:00 Reception at the Dag Hammarskjöld Library Penthouse
hosted by Mr. Kensaku Hogen
Under-Secretary-General, Department of Public Information

Wednesday, 29 March 2000

9:30 – 1:30 Presentations, and discussion of problems and data needs, by participating
United Nations offices, agencies and programmes

9:30 – 10:15 **Field Operations**

Moderator: Mr. Stan Carlson, Situation Centre/OUSG/DPKO

Presenters: Mine Action Service, DPKO

Field Administration and Logistics Division, DPKO

Situation Centre, DPKO

Office of Emergency Programmes, UNICEF

Operations Support Division, UNHCR

10:15 – 11:15 **Political and Development Issues**

Moderator: Dr. Peter Gilruth, UNSO/SEED/UNDP

Presenters: Division for Palestinian Rights, DPA

Treaty Section, OLA

Global Urban Observatory, UNCHS (Habitat)

Division for Sustainable Energy and Environment, UNDP

World Bank

11:15 – 11:45 *Break*

11:45 – 1:15 **Environment and Health**
Moderator: Mr. Tony Burton, VAM/V&B/WHO
Presenters: GRID-Sioux Falls, UNEP
GRID-Warsaw, UNEP
GRID-Arendal, UNEP
Division of Water Sciences, UNESCO
Department of Evidence and Information for Policy, WHO
HealthMap, WHO/UNICEF

1:15 – 1:30 Presentation by the Center for International Earth Science Information Network on “Accessing and Integrating Multidisciplinary Global Change Data”

1:30 – 3:00 *Lunch*

3:00 – 4:30 Continued presentations and discussion by participating United Nations offices, agencies and programmes

3:00 – 4:30 **Cartography and Geographic Information**
Moderator: Mr. Gabriel Gabella, NRSIB/DSD/DESA
Presenters: Natural Resources and Small Islands Branch, DESA
Environment and Natural Resources Service, FAO
Aeronautical Information and Charts Section, ICAO
RESS Division - Geneva, UNOPS
Printing and Graphics Division, World Bank

4:30 – 5:00 *Break*

5:00 – 5:50 Overview of global and regional geographic database efforts
Moderator: Mr. Henry Tom, Oracle Corporation

5:50 – 6:00 Presentation by Silicon Graphics, Inc. on “Distributed Geographic Information System (GIS) Technology”

Thursday, 30 March 2000

9:30 – 10:00 Presentation by Dr. Claude Luzet on “MEGRIN (Multipurpose European Ground Related Information Network) and ISCGM (International Steering Committee for Global Mapping)”

10:00 – 11:15 Requirements and design of the United Nations Geographic Database
Moderator: Mr. Mark Reichardt, GSDI

11:15 – 11:45 *Break*

- 11:45 – 1:00 Establishment of the United Nations Geographic Information Working Group (UNGIWG) under the Administrative Committee on Coordination (ACC) / Consultative Committee on Programme and Operational Questions (CCPOQ)
- Consideration of the mandates of the Working Group and recommendations for the future work of the Working Group
- Drafting of the resolution
- 1:00 – 2:30 *Lunch*
- 2:30 – 3:00 Drafting of the resolution
- Adoption of the resolution
- 3:00 – 4:00 Problems and possible solutions in developing close co-operation with cartographic/geographic services of Member States
Moderator: Dr. Claude Luzet, MEGRIN
- 4:00 – 4:15 Concluding remarks by Mr. Raymond Sommereyns
Director, Library and Information Resources Division
Department of Public Information

ANNEX IV

LIST OF PARTICIPANTS

UNITED NATIONS EXPERTS

ABD-ELRAZEK, Adnan	Political Affairs Officer, Division for Palestinian Rights, DPA, UN Secretariat abdelrazek@un.org
AGUILAR-MANJARREZ, José	Information Systems Officer, GILF Division, FAO Jose.AguilarManjarrez@fao.org
ARNDT, Thorsten	Information Associate, Office to Combat Desertification and Drought, Division for Sustainable Energy and Environment, UNDP Thorsten.Arndt@undp.org
ATAMAN, Ergin	Manager, Geographic Information Systems Unit, Environment and Natural Resources Service, FAO Ergin.Ataman@fao.org
BARANOWSKI, Marek	Director, GRID-Warsaw, UNEP marek@gridw.pl
BARTOSCH, Vladislava	Chief, Enterprise Systems Development Section, Information Technology Services Division, DM, UN Secretariat bartosch@un.org
BESSARABOV, Vladimir	Cartographer, Cartographic Section, Library and Information Resources Division, DPI, UN Secretariat bessarabov@un.org
BOEGLI, Ulrich	Chief Cartographer (retired), World Bank uboegli@aol.com
BOUCHARDY, Jean-Yves	Head, GIS/Mapping Unit, Operations Support Division, UNHCR bouchard@unhcr.ch

BRAY, Hélène	Associate Cartographer, Cartographic Section, Library and Information Resources Division, DPI, UN Secretariat bray@un.org
BROOKES, Brenda	Map Librarian, Dag Hammarskjöld Library, Library and Information Resources Division, DPI, UN Secretariat brookes@un.org
BURKE, Jacob	Economic Affairs Officer, Natural Resources and Small Islands Branch, Division for Sustainable Development, DESA, UN Secretariat burkej@un.org
BURTON, Tony	System Analyst, Vaccine Assessment and Monitoring, Department of Vaccines and Other Biologicals, WHO burtona@who.ch
CARLSON, Stan	Chief, Situation Centre, DPKO, UN Secretariat carlson@un.org
CHOW, Alice	Geographic Information Systems Officer, Cartographic Section, Library and Information Resources Division, DPI, UN Secretariat chowa@un.org
DEICHMANN, Uwe	Coordinator, Spatial Information and Analysis Unit, Development Research Group, Infrastructure and Environment, World Bank udeichmann@worldbank.org
DENGO, Manuel	Chief, Natural Resources and Small Islands Branch, Division for Sustainable Development, DESA, UN Secretariat dengo@un.org
DILLEY, Maxx	Geographer, Natural Disaster Facility, World Bank mdilley@worldbank.org
EBENER, Steeve	Technical Officer, Global Programme on Evidence for Health Policy, Evidence and Information for Policy Cluster, WHO ebeners@who.ch

EOM, Kyoung-Soo	Engineering Officer, Logistics and Communications Service, Field Administration and Logistics Division, DPKO, UN Secretariat eom@un.org
GABELLA, Gabriel	Senior Economic Affairs Officer, Natural Resources and Small Islands Branch, Division for Sustainable Development, DESA, UN Secretariat gabella@un.org
GANGOPADHYAY, Subhrendu	Associate Expert, World Water Vision Unit, World Water Council, Division of Water Sciences, UNESCO s.gangopadhyay@unesco.org
GILRUTH, Peter	Senior Technical Advisor, Environmental Information Systems, Office to Combat Desertification and Drought, Division for Sustainable Energy and Environment, UNDP Peter.Gilruth@undp.org
GYAMFI-AIDOO, Jacob	Coordinator, Program on Environment Information Systems in Sub-Saharan Africa, World Bank jgyamfiaidoo@worldbank.org
HAGGARTY Alta	Humanitarian Affairs Officer, Information Analysis Unit, Policy, Advocacy and Information Division, OCHA, UN Secretariat haggarty@un.org
HOKEN, Kensaku	Under-Secretary-General, DPI, UN Secretariat hogen@un.org
HORNSBY, Peter	Logistics Officer, DPKO, UN Secretariat hornsby@un.org
HOWARD, Carrie	Associate Humanitarian Affairs Officer, Information Analysis Unit, Policy, Advocacy and Information Division, OCHA, UN Secretariat howard@un.org
JORGENS, Maurice	Law of the Sea/Ocean Affairs Officer, Division for Ocean Affairs and the Law of the Sea, OLA, UN Secretariat jorgens@un.org

KANNINEN, Tapio	Chief, Policy Planning Unit, DPA, UN Secretariat kanninen@un.org
KING, Dennis	Office of Emergency Programmes, UNICEF dking@unicef.org
LAARIBI, Amor	Cartographer, Office of the Director, Statistics Division, DESA, UN Secretariat laaribi@un.org
LEWTAS, David	Chief, Cartographic Unit, Aeronautical Information and Charts Section, Air Navigation Bureau, ICAO dlewtas@icao.int
MASCIANGELO, Barbara	Treaty Section, OLA, UN Secretariat masciangelo@un.org
MCKAY, Robert	Cartographer, Cartographic Section, Library and Information Resources Division, DPI, UN Secretariat mckayr@un.org
MEERT, Jean-Pierre	Programme Manager, WHO/UNICEF Joint Programme on Data Management and Mapping - HealthMap, Department of Communicable Disease Surveillance and Response, WHO meertj@who.ch
MOOR, Jay	Coordinator, The Global Urban Observatory, UNCHS (Habitat) jay.moor@unchs.org
O'NEILL, Kathy	Technical Officer, WHO/UNICEF Joint Programme on Data Management and Mapping - HealthMap, Department of Communicable Disease Surveillance and Response, WHO oneillk@who.ch
PIEPER-HOEWELING, Helga	Information Management Officer, Mine Action Service, DPKO, UN Secretariat pieper-hoeweling@un.org
PINTHER, Miklos	Chief, Cartographic Section, Library and Information Resources Division, DPI, UN Secretariat pinther@un.org

PRAKAS, Gregory	Chief Cartographer, Printing and Graphics Division, General Services Department, World Bank gprakas@worldbank.org
PRÉVOST, Yves Andre	Senior Environment Specialist, Environment Group (AFTE1), Africa Region, World Bank yprevost@worldbank.org
REKACEWICZ, Philippe	Geographer/Cartographer, GRID-Arendal, UNEP reka@grida.no
RETIERE, Alain	Rehabilitation Advisor, Consulting, Advisory, R&D Unit, RESS Division - Geneva, UNOPS alainr@unops.org
SANDEV, Robert	Associate Cartographer, Division for Ocean Affairs and the Law of the Sea, OLA, UN Secretariat sandev@un.org
SINGH, Ashbindu	Regional Coordinator, Environmental Information and Assessment – North America, UNEP singh@edcmail.cr.usgs.gov
SOMMEREYNS, Raymond	Director, Library and Information Resources Division, DPI, UN Secretariat sommereynsr@un.org
STASIEWICZ, Krzysztof	Engineering Officer, Logistics and Communications Service, Field Administration and Logistics Division, DPKO, UN Secretariat stasiewicz@un.org
UWANYILIGIRA, Immaculée	Computer Information Systems Officer, Situation Centre, Office of Operations, DPKO, UN Secretariat uwanyiligira@un.org
WAGNER, Bernhard	Cartographer, Cartographic Section, Library and Information Resources Division, DPI, UN Secretariat wagnerb@un.org

Abbreviations

DESA	Department of Economic and Social Affairs
DM	Department of Management
DPA	Department of Political Affairs
DPI	Department of Public Information
DPKO	Department of Peace-keeping Operations
FAO	Food and Agriculture Organization of the United Nations
GRID	Global Resource Information Database
ICAO	International Civil Aviation Organization
ILO	International Labour Organization
OCHA	Office for the Coordination of Humanitarian Affairs
OLA	Office of Legal Affairs
UNCHS	United Nations Centre for Human Settlements
UNDCP	United Nations Office for Drug Control and Crime Prevention
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHCR	Office of the United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
WFP	World Food Programme
WHO	World Health Organization

INTERNATIONAL OBSERVERS

BALK, Deborah
Project Scientist, Socioeconomic Data and
Applications Center, Center for International Earth
Science Information Network, CIESIN
Deborah.Balk@columbia.edu

BECKER, Mark
Geographic Information Specialist, Center for
International Earth Science Information Network,
CIESIN
mbecker@ciesin.org

BORRERO, Santiago
Vice Chair, Steering Committee, Global Spatial
Data Infrastructure, GSDI
sborrero@igac.gov.co

CHEN, Robert
Deputy Director, Center for International Earth
Science Information Network, CIESIN
bchen@ciesin.columbia.edu

DILLON, Leo
Vice Chairperson, U.S. Board on Geographic
Names
acldillion@us-state.osis.gov

LUZET, Claude
Executive Director, Multipurpose European Ground
Related Information Network, MEGRIN
Claude.Luzet@megrin.org

MCKEE, Lance
Vice President, Corporate Communications, Open
GIS Consortium, OGC
lmckee@opengis.org

REICHARDT, Mark
Secretariat, Steering Committee, Global Spatial
Data Infrastructure, GSDI
mreichardt@usgs.gov

TRAINOR, Timothy
Chair, Commission on Regional and National
Atlases, International Cartographic Association,
ICA
ttrainor@census.gov

INDUSTRY EXPERTS

CÔTÉ, Carmelle J.	International Relations/GIS Consultant, Environmental Systems Research Institute Inc., ESRI ccote@esri.com
DUHRING, Chris	Solutions Architect, Professional Services, Silicon Graphics Inc., SGI cduhring@sgi.com
FANJOY, Stephen	Executive Director, Global Spatial Solutions, Oracle Corporation sfanjoy@ca.oracle.com
GARCIA, Rui	Technology Sales Manager II, Foreign Affair Agencies, Oracle Corporation rmgarcia@us.oracle.com
JARVIS, Beau	Senior Account Manager, ERDAS Northern Region bjarvis@erdas.com
JOHNSON, Steven	President, Laser-Scan Inc. stevej@lsiva.com
KERN, Danielle	Coordinator, Higher Education and Special Programs, ERDAS Northern Region dkern@erdas.com
MURDAY, Jeanne	Manager, Regional Offices, Environmental Systems Research Institute Inc., ESRI jmurday@esri.com
POWERS, Matthew	Manager, Commercial Exploitation Solution, Imagery & Geospatial Solutions, Lockheed Martin Matthew.Powers@lmco.com
TOM, Henry	Director, International Market Development, Global Spatial Solutions, Oracle Corporation htom@us.oracle.com
WILLCOX, Ian	Business Development Manager, Laser-Scan Ltd. ianw@lsl.co.uk
WILLIAMS, Tish	Vice President, Strategic Business Development, Space Imaging tish@spaceimaging.com