



# Global Spatial Data Infrastructure Newsletter



January 2004

## Global Spatial Data Infrastructure Secretariat

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### WELCOME.....

To the first edition of the  
GSDI Newsletter.

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### About Global Spatial Data Infrastructure

GSDI is a global and open process for coordinating the organisation, management and use of geo-spatial data and related activities. It encompasses the policies, organisational 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.



### GSDI Formalizes Organization

Amid the gothic architecture of St. John's College at historic Cambridge University, the Global Spatial Data Infrastructure (GSDI) Association was formalized in July of 2003. At its July meeting in Cambridge, England, the GSDI Association approved its By-Laws, giving formal structure for the first time, to the Association. During its nearly eight centuries, Cambridge University has seen many timeless events take place on its campuses. In the history of mapping and particularly digital spatial data, however, the formation of the GSDI Association marks a significant milestone in the view that people will have of their world.

The GSDI was created in 1996 as a loose gathering of visionaries, dedicated to promoting global spatial data, accessible through the Internet. The primary purpose of the GSDI at that time was to gather mapping and charting leaders from around the world on an annual basis, to discuss ideas and techniques for promoting the infrastructure to accomplish that task. Five conferences were held in Europe, Africa, Europe, North America, and South America. By the time of the Sixth GSDI Conference in Budapest, Hungary, in September 2002, the Conference was attracting representatives from more than fifty countries.

In August 2002, the GSDI Association began with its incorporation in the Commonwealth of Virginia. In July of 2003, the GSDI Council was invited to hold its meeting at the quadrennial Cambridge Conference. The Cambridge Conference is hosted by the UK Ordnance Survey, and brings together the elite of the mapping world. By inviting the GSDI to hold its meeting during the conference, this elite gathering gave recognition to GSDI as the leading global proponent of spatial data.

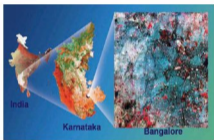
Also approved at the meeting were the dues structure, allowing the GSDI to accept paying members and contributions, and an initial version of the vision, goals, and objectives of the Association. The vision is to "Support all societal needs for access to and use of spatial data." Key elements of the GSDI efforts will include 1) awareness and exchanges on infrastructure issues, 2) standards-based data



access/discovery through the Internet, 3) capacity building, 4) SDI development research, and 5) active programs for funding and resources to accomplish its Vision and Goals.



The Association will approve the first draft of its Strategic Implementation Plan at the Seventh GSDI Conference in Bangalore, India, in February 2004.



## GSDI-7 – India Beckons

The GSDI-7 Conference will be held in Bangalore, India. The Conference is scheduled for February 2-6, 2004. The host for the Conference will be the Indian Space Research Organisation (ISRO) and the Department of Science and Technology (DST) of the Indian Government.

India is well known as an ancient culture with proud traditions, but is also a leader of modern technology. It possesses a strong foundation of technology and industries that blend with Indian culture to create a vibrant society. India is well suited to host the next GSDI Conference. At 200 years, they have the oldest survey agency, which has produced some of the best-mapped regions. Like the society as a whole, they combine the historical foundations with a modern and vibrant culture and hi tech inputs. The government has an excellent geological survey agency with a well-planned geology, and national mapping agencies for forests, soils, groundwater, and other applications. India operates a system of remote sensing satellites with up to 5.8m resolution and global outreach. They have excellent GIS expertise of more than 20 years. Like Hungary, the host of GSDI-6, the government is committed to the establishment of an NSDI.

Bangalore, The Garden City, is known for its friendly people, and is the Capital of Karnataka State. Be prepared for a salubrious climate with temperatures varying between 68 and 80 F. The official language is Kannada, but English is widely spoken and understood. It is well connected by air to many major Indian and international cities, and has good and fast train connections, and excellent local transportation via taxis and 3-wheelers. It is also the technological hub of India, the Indian home of many major multinational technology vendors, and is on par with the world as host of a variety of public and academic institutions.

There is a range of good accommodations at varying prices in the area, with a number of luxury hotels close by the modern convention centre. There are many things to see and do in the area, including Nandi Hills, a picturesque hill-site, the Nagarhole Tiger Reserve, and the Lalbagh Botanical Gardens, and it is within 600km of Mysore, Ooty, Chennai, Kerala, Hyderabad, and Goa.

The theme for GSDI-7 is "SDI for a Sustainable Future". The programme features a pre-conference tutorial and international exhibitions. The Conference itself will have one 2-hr plenary on a major topic daily, four or five speakers and discussions, presentation sessions, and parallel and joint, 1-hr panel debates on key topics, posters, and tele-sessions.

The subject of the Pre-Conference Tutorial will be "Spatial Technologies and Applications". It will be held from January 30-31, 2004 (Fri and Sat). From 50-75 participants are expected targeting Asia-Pacific nations. The tutorial will focus on global case studies and on global programmes such as ISCGM, Global Map, The International Society for Photogrammetry and Remote Sensing, and others.

The subject of the exhibition will be "Spatial World". The focus will be on the international SDI agencies and will bring to Asia-Pacific the best of technology and applications show-casing SDI. It will showcase successes and achievements in SDI, highlight future aspects, and target global exhibitor groups from industries, government agencies, academia/universities, research institutions, and non-profit institutions with about 100 exhibitors targeted. The map world exhibition will be open to the public. Other events around the Conference will include excellent pre- and post-conference tours, an Internet facility, a VSAT network for tele-sessions, demonstration booths, secretariat support, receptions, dinners and high tea.

In short, a good conference and a good time. We will see you in Bangalore.

## GSDI Grants Bear Fruit

GSDI has set aside some money for a small grant program. The dollar value of the grants is small, generally about US\$5,000, and clearly not enough to fund a complete NSDI. The intent is to give a program a "jump start" through awareness campaigns and through workshops. As a result of the support of GSDI grants, SDI workshops were recently held in Zimbabwe and Nigeria.



He welcomes any information from you and can be reached at [ckwon@godi.org](mailto:ckwon@godi.org) or +(703)-648-5452

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## Regional SDI Newsletters

There are many activities within Africa over the past months, too many to list here. An excellent source for information on African SDI activities is the SDI-Africa Newsletter [www.godi.org/pubs2.html#SDINEWS](http://www.godi.org/pubs2.html#SDINEWS)

A new newsletter has been added for the Asia/Pacific region, modeled on the success of the SDI-Africa newsletter. Co-sponsored by PCGIAP and GSDI, it can be found at [www.godi.org/pubs2.html#SDI-APNEWS](http://www.godi.org/pubs2.html#SDI-APNEWS) and at [www.pcgiap.org/tech\\_papers/tech\\_papers.htm#GSDI](http://www.pcgiap.org/tech_papers/tech_papers.htm#GSDI).

A newsletter for the Mesoamerican and Caribbean region is under development.

## New Secretariat Internship – Mr. Ohsung Kwon

Mr. Ohsung Kwon has recently joined the FGDC as an intern from Korea to work with Dr. Alan R. Stevens who is the International Program Manager and principal support for the GSDI Secretariat from the FGDC.

Ohsung received his M.S. in Transport Planning and Engineering in 1996, from the University of Leeds in the United Kingdom. He worked for the Ministry of Construction and Transportation of Korean Government, which is responsible for SDI in Korea before he joined FGDC.

He is helping Dr. Alan R. Stevens with capacity building for the Spatial Data Infrastructure (SDI) throughout the Asia/Pacific community. He will assist in designing and implementing capacity building activities throughout the region. For this purpose, he is investigating SDI related websites throughout the Asia and Pacific, such as the Permanent Committee for Geographic Information for Asia and the Pacific (PCGIAP), to discover the goals and objectives of SDI bodies and websites for SDI activities in the region.

He eagerly wants to glean information on coming, current, and past SDI and Geographic Information (GI) activities such as conferences, workshops, training as well as progress in both the SDI policy and technical arenas; clearinghouse/portal establishment, metadata development, standards creation/openation, data base availability and others. This information is very important for designing and implementing capacity building activities in the region as well as exchanging information between GSDI and the related SDI bodies in the region.

the execution of the Program, which is the basic instance for the ordering and regulation of national productive activities, establishing priorities and putting objectives and goals in proper order. In its conceptual aspects the Program holds specific considerations on the IDEMEX.

For the dissemination of the idea around IDEMEX, information is being put on the Web site of the INEGI. On the other hand, in INEGI several steps have been taken contributing to the IDEMEX, which go from the continuous production of geographic information, to the incorporation of the most modern technologies, concepts development on fundamental data, generation of metadata, establishment and operation of a Clearinghouse and Gateway, the development of a program on generation and updating of geospatial standards, the conception and present development of the Geographic Database, the building of important alliances and links to other national, regional and world-wide organizations, and other actions as related to the implementation of the IDEMEX.

Mexico, through INEGI aspires to contribute to the regional development of geospatial information through its gained experience in geographic information development, putting also at service its capacity in education and training, as well as on institutional strengthening. This explains its presence and participation in the Panamerican Institute of Geography and History (PAIGH), as well as in PCIDEA, within which, by holding at the moment the presidency of the organization, will try to play a significant role in benefit of member countries.

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## **INTERNATIONAL INSTITUTE FOR GEO-INFORMATION SCIENCE AND EARTH OBSERVATION (ITC)**

PO Box 6, 7500 AA Enschede, the Netherlands

Email: [pr@itc.nl](mailto:pr@itc.nl)

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

ITC is the largest institute for international higher education in the Netherlands, providing international education, research and project services.

The aim of ITC's activities is the international exchange of knowledge, focusing on capacity building and institutional development in countries that are economically and/or technologically less advanced.

The knowledge field of ITC is geo-information science and earth observation, which consists of a combination of tools and methods for the collection - through aerospace survey techniques -, storage and processing of geo-spatial data, for the dissemination and use of these data and of services based on these data.

### **Client orientation**

At the heart of ITC's activities are capacity building and institutional development. Enschede forms the home base for ITC's degree-oriented education. The international educational system at ITC is intended primarily for mid-career professionals and scientists from less developed countries.

### **Education**

ITC has a scientific staff of some 200 professionals of more than 30 nationalities. Since its foundation, more than 15,000 students from over 160 countries have completed courses at the Institute. The Institute offers six educational programmes with different specialisations, leading to Master of Science (MSc) or Professional Master's (PM) degrees and diplomas covering the following fields:

- Geo-informatics
- Geo-information Management
- Urban Planning and Land Administration
- Natural Resources Management
- Water Resources and Environmental Management
- Earth Resources and Environmental Geo-sciences.

ITC also offers short courses and tailor-made courses of varying duration.

For more information about education at ITC please go to [www.itc.nl/education](http://www.itc.nl/education)

### **Research**

ITC carries out a multidisciplinary and problem-oriented research programme in support of its education and project services. This research programme focuses on the provision of geo-information and earth observation for:

- the strengthening of civil society, e.g. land administration, public administration, cadastre and survey organisations
- multifunctional use of space, e.g. urban and rural planning and management
- natural disasters and environment, e.g. flooding and landslides (mitigation and relief)
- food and water security, e.g. water for food production, early warning systems and crop forecasting
- global change monitoring, e.g. biodiversity and habitat.

For more information about ITC's research programme please go to [www.itc.nl/research](http://www.itc.nl/research)

### **Project services**

ITC's project services often serve as a follow-up service to alumni and their organisations. Since its foundation, ITC has completed a wide variety of project assignments (over 1000) around the world. ITC is registered with all major international (project funding) organisations. The majority of these projects are executed in economically and technologically less developed countries and emphasise institutional development and capacity building. ITC's project services include:

- Institutional development
- Contract training
- Contract research and development
- Advisory services

For more information about ITC's project services please go to [www.itc.nl/projects](http://www.itc.nl/projects)

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## MACGA

The Mesoamerican and Caribbean Geospatial Alliance (MACGA) is a project implemented by the U.S. Geological Survey/EROS Data Center (EDC, <http://edcintl.er.usgs.gov>) in cooperation with several partner organizations. MACGA strives, as an "alliance" of organizations with shared interests, to facilitate the development of spatial data using appropriate methods and standards, assist efficient data management, support data access and dissemination, and encourage the development of geospatial applications in the regions of Mesoamerica and the Caribbean. Spatial data produced with appropriate standards, projections, and metadata and distributed more openly will translate into better applications and increased efficiencies.

With core funding from USAID, and support from national and international agencies, the MACGA project features an ambitious capacity-building program. Two technical workshops on spatial data technologies are organized to provide training, software, and source data. One will be held in Panama during November, 2003, for Mesoamerican participants, and the other one is planned for April, 2004, for Caribbean participants. The project promotes the establishment or improvement of spatial data infrastructures, assist in the establishment of better communication channels among agencies and initiatives developing spatial data, and in general help build a framework for improved spatial data generation, management, and dissemination in these two regions.

The MACGA Mesoamerican workshop to be held in Panama offers a unique opportunity for more than 30 participants from mapping agencies, ministries of environment, agricultural agencies, and regional institutions to learn new GIS techniques, acquire the ability to serve maps on the web; learn about digital elevations models and geodetic systems, clearinghouse techniques, and spatial data infrastructures; and get information on the various geospatial projects in the region. They leave the training with clear guidelines on spatial data sets and applications to be developed (i.e., Global Map data sets, environmental and agricultural internet map servers). MACGA will offer follow-on support and technical assistance for some of these developments.

In parallel with this technical gathering, managers from MACGA partner agencies convene in a two-day meeting on November, 21 and 22, in Panama to define a basic action plan for the establishment and consolidation of spatial data infrastructures in the region, help formulate new projects, establish mechanisms for cooperation, and set direction to the alliance work.

Up to now, more than thirty partner agencies have announced their commitment to participate in MACGA. The list includes national mapping and environment agencies, ministries of agriculture, NGOs, funding agencies, U.N. agencies, research institutions, international development agencies, international agricultural centers, and universities. Each contributes to the alliance objectives in different ways: by funding certain activities, by providing capacity-building, by distributing spatial data sets, by offering software and training packages, by developing products and deliverables, and by undertaking coordination and planning.

As a contribution to the project, ESRI is providing a software and training grant to each ministry of environment in Central American valued at US\$60,000. Altogether, partners have already pledged to contribute over \$2 million in support of the MACGA.

For more information please contact:

Eric van Praag, USGS/EDC, Phone: 58-212-793.48.26, [vanprag@usgs.gov](mailto:vanprag@usgs.gov); Or Larry L. Tieszen, USGS/EIJC, Phone: 605-594-61.69, [tieszen@usgs.gov](mailto:tieszen@usgs.gov).

And visit our website at <http://edcintl.cr.usgs.gov/macga.html>.

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## IDEMEX, THE SPATIAL DATA INFRASTRUCTURE OF MEXICO

The growing influence of geospatial information has increased the demands for opportune, congruent, of quality, accessible and shared information useful for everybody. The National Institute of Statistics, Geography and Informatics (INEGI) has developed the concept of SDI aimed towards the best progress of geographic information according to associated criteria for a greater usefulness. The Statistical and Geographic Information Law, promulgated in 1980, regulates the national information in these matters and is visionary and foresighted when defining as its fundamental objective the integration and development of the National Geographic Information System, and along with it, the prime seed of the NSDI.

Geographic information in Mexico has developed in several stages; the first one characterized by the productive effort; one second linked to the decision to adopt digital technology, and a third, the present one, coming from the need to coordinate and standardize the information on the basis of rational and efficiency criteria. That is how the concept of the Spatial Data Infrastructure of Mexico (IDEMEX) arises. Producers and users of geospatial information have pointed out the need to coordinate efforts, work together, generate and apply agreed standards, avoid duplicities, rationalize the production, put it to the disposal of all interested people, and summing up, to administer the geospatial information in better ways.

In February of this year INEGI organized the National Geography 2003 Convention where the main and governing subject was the IDEMEX. It was agreed during this Convention that it is necessary to foster the communication and interchange of ideas and experiences among geospatial information producers and users and to strengthen ties among organizations. There was a general consensus to initiate as soon as possible conducive action for the implementation of IDEMEX. Later on, by the end of May a First Shop on the IDEMEX attended by several geographic organizations was organized, in which subjects on Standards, National Geographic Frame, Fundamental Data and Access and Dissemination of Geospatial Information were discussed.

For the integration and development of the SNIC, the Law indicates the establishment of Technical Committees and the elaboration of the National Development Geographic Information Program. The Consultative Technical Committee on Geographic Information, has the function to orient and define priorities for

the generation of appropriate decision taking for sustainable development among our nations, realizing we are in a context where everyone has to learn from the others.

PC IDEA plans for the next two years include the establishment and strengthening of links and relationships with leading geospatial global and regional organizations such as GSDI, PCGIAP, EUROGL, PAIGH, FGDC, ISO TC/211, ICA and ISCGM, specially with the United Nations, among others; the redefinition and strengthening of working groups, support to subregional initiatives such as the Mesoamerican and Caribbean Geospatial Alliance (MACGA), to reinforce membership, the organization of regional shops such as one on Geographic Names as foreseen for next year, the organization of the 5<sup>th</sup> Meeting in Aguascalientes, Mexico in October, 2004, and the 6<sup>th</sup> meeting in a place and date to be defined for 2005. One of the main lines of work is to provide for better working communication with and among member countries by using the modern facilities provided by the Information and Communication Technologies, including the addition of project planning and discussion forums through the Web site of PC IDEA.

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## PROJECT NATIONAL LAND INFORMATION SYSTEM OF CHILE

Alvaro Medina Aravena

Technical Secretary, National Land Information System  
Ministry of National Properties

In Chile there are many public organisations involved in the generation, use and management of land information. In general, these institutions produce and manage databases by using modern and highly automated technologies. However, this process has been developed with lack of coordination among mentioned organisations. Our traditional usages in the capture and management of land information indicate that different sectors develop the process responding to their particular needs, without considering what happens in the neighbouring organisation related to these matters. Likewise, even the number of institutions that build land information systems is increasing (supported in GIS technologies) they are not able to dialogue between themselves.

In order to face these problems, the Chilean government is developing the project "Sistema Nacional de Información Territorial" -SNIT- National Land Information System ([www.snit.gob.cl](http://www.snit.gob.cl)) that will establish the well known concept of National Spatial Data Infrastructure. By means of a mandate dictated in September 2001, the President of the Republic set specific guidelines to create the SNIT, assigning directive tasks in a technical and executive secretariat settled in the Ministry of National Property. This secretariat coordinates a large number of State agencies, whose main efforts are focused in formulating a national policy for the management of land information, sustained in the advances provided by information and communication technologies in these topics.

The SNIT aims to modernize the current land information's way of management (capture, use, maintenance, transferring) by State agencies, starting from an unshared and individualistic scheme to reach a coordinated and cooperative one. Its development will set a stage to take advantage of the incorporation of new technologies by modifying management procedures. This results in an interinstitutional arrangement that fosters the joint work related to the capture and use of land information, enhancing celerity and accuracy for accessing, processing, verifying, certificating, transferring and layer overlapping.

All of these are based on three technological foundations: the accurate location of spatial data, their management on the web and on-line, and the use of GIS.

Therefore, the SNIT is a cooperative and transversal management model, sustained on the best use of information and communication technologies, enabling a qualitative jump with respect to availability and access to land information for government authorities as well as common citizens.

At the present time, we have a national plan for land information capturing and standardizing, which has been formulated for the period 2003-2005. This plan was built as the result of a strong work of multisectorial coordination, where every participating organisation contributed with experience and knowledge from their particular field of action.

In this plan several activities have been programmed in order to fulfill the following objectives:

- Standardize and normalize land information existing in the country.
- Build the standard geographic base formed by the core data of our national territory.
- Adopt international standards referred to geographic information.
- Establish regional committees for decentralizing land information management.
- Elaborate the land information portal for discovery, evaluation and access to geospatial data.
- Formulate projects for capturing lacking information in the country.
- Establish the SNIT advisory committee, in order to involve all the national geographic community in formulating a policy for land information management.
- Participate actively in the international community of Geospatial Data Infrastructures.
- Give legal sustainability to SNIT by means of a national policy.

At this time, based on a Second Mandate of the President, signed on April 2003, we are working on the elaboration of a Basic National Policy, as a proposal, for the management of Land Information, and the implementation of our national plan of land information. The policy proposal will be completed in December 2003.

On 26 November 2003, in Abuja, Nigeria, a workshop on geospatial metadata was conducted at the First Annual Conference of the Geoinformation Society of Nigeria (GEOSON). Presided over by the President of GEOSON, Prof. O. O. Ayeni, the aim of the workshop was to assist participants to develop the necessary skill in capturing and publishing metadata for geospatial data holdings. The workshop also owed much of its success to the efforts of the Regional Centre for Training in Aerospace Surveys (RECTAS), and in particular Dr. Jide Kufoniya for organizing the training. The activities of the workshop included:

- Overview of SDI
- GI Policy for Nigeria
- Geospatial Data Standard Issues
- Introduction to Metadata
- Final Contents of ISO Standards for Geospatial Metadata
- ISO Status
- Implementing Metadata Projects
- Sections 1 and 7 of ENRAEMED to explain the elements of the Metadata structure
- Clearinghouse
- Z39.50 and Significance
- Test Implementation with in-house facility and public domain software.

By all indications, the workshop met its objectives. RECTAS will follow-up the workshop gains by monitoring implementation of metadata in the organizations represented by the workshop.

One day later, on 27 November 2003, in Harare Zimbabwe, The Surveyor General's Department, the SDI Steering Committee, and the Southern African Development Community (SADC) - Regional Remote Sensing Unit (RRSU) hosted a workshop on the Zimbabwe SDI Program. The issues addressed in the workshop included:

- Formalization of the ZSDI initiative
- Awareness campaign
- Sustainable funding strategies for the ZSDI initiative
- Immature institutional arrangements and user/provider relationships
- Inconsistencies in the availability and quality of spatially referenced data
- Inconsistent policies concerning access to and use of spatially referenced data
- Incomplete knowledge about the availability and quality of existing spatially referenced data
- Lack of best practice in the utilisation of enabling technologies.

The workshop was presided over by Mr. Reuben Mavima, the current Chair of the ZSDI Steering Committee and the Clearinghouse Specialist for the RRSU, and was attended by many of the influential members of the ZSDI Community. The Honorable Minister of Lands, Agriculture and Rural Resettlement, Dr. Joseph Madae, gave the opening speech, asking the participants to pay special attention to the role they could play in assisting the land reforms being carried out by the government.

After formalization of the ZSDI structure and election of the new Steering Committee Membership and Executive Committee, the workshop recorded a number of actions, designed to move the ZSDI well into the future.

**Editor's Note:** There are many activities going on around the world related to the global spatial data infrastructure, too many to adequately cover in a single newsletter. This edition will focus on activities within the Americas. Future editions will cover activities in other regions in more detail.

## A SHORT REVIEW ON PC IDEA, CURRENT STATUS AND PERSPECTIVES

The Permanent Committee on Geospatial Data for the Americas (PC IDEA) was established pursuant to resolution number 3 of the 6th United Nations regional Cartographic Conference for the Americas (UNRCCA), New York, 1997. As of today the organization groups 24 member countries in the American Continent. PC IDEA is a rather young regional organization since its establishment in March 2000 during the First Meeting in Santa Fe de Bogota, Colombia. The Second Meeting took place along with the 7th UNRCCA in New York, January 2001, where initial ideas and concepts were reaffirmed towards the development of the regional and national spatial data infrastructures. The Third Meeting was convened in Cartagena, Colombia, May 2001 along with the 5th Conference of the Global Spatial Data Infrastructure (GSDIS), where initial membership was increased, final statutes and bylaws were approved and three working groups were established on Legal and Economic Aspects, Communications, and Technical Issues, this last WG comprising several subgroups as related to Fundamental Data, Geospatial Standards, Policies, Clearinghouse, Cadaster, Geographic Names and Capacity Building. On the other hand, new authorities were appointed by the Committee, with the Presidency changing from Colombia to Venezuela.

The Fourth meeting of PC IDEA was hosted by Costa Rica in June, 2003, along with a Technical Meeting of the Cartography Commission of the Panamerican Institute of Geography and History (PAIGH), where there is a strong interest being developed towards issues related to the implementation of SDI's in the Americas. New authorities were elected, corresponding now the Presidency to Mexico through Eng. Mario Alberto Reyes Ibarra, General Director of Geography at the National Institute of Statistics, Geography and Informatics (INEGI).

In his acceptance address, the new President stressed the fact that there are strong challenges to face in the development of the regional SDI, requiring the fortifying of PC IDEA. New paradigms should be developed within the American Member nations, trying to open new doors with the rest of the world, which for sure will raise new challenges linked to mutual understanding, cooperation, the fostering of knowledge, and the opening of opportunities within a globalized information and communications world. It is necessary to work by developing new ideas and concepts associated to geospatial data to foster

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## Upcoming Conferences:

January 9, 2004  
Seoul, Korea  
International Symposium on Environmental Planning  
and City Management in Asian Countries  
[urban.tntrp.tut.ac.jp/AURG/sympo2004/](http://urban.tntrp.tut.ac.jp/AURG/sympo2004/)

January 20-22, 2004  
Washington, DC  
ESRI Federal User Conference  
[www.esri.com/events](http://www.esri.com/events)

January 28-30, 2004  
New Delhi, India  
Map India 2004  
[www.mapindia.org](http://www.mapindia.org)

February 2-6, 2004  
Bangalore, India  
GSDI-7

January 30-31, 2004  
Pre-Conference Tutorial  
[www.gsdi7.org/in/](http://www.gsdi7.org/in/)

March 26-29  
Washington, DC  
GDIN2004  
[www.gdin.org](http://www.gdin.org)

April 25-28, 2004  
Seattle, WA USA  
GITA's 27<sup>th</sup> Annual Conference  
[www.gita.org/events/annual/27/intro.html](http://www.gita.org/events/annual/27/intro.html)

May 10-12, 2004  
Johor, Malaysia  
GISDECO 2004  
[www.bfab.utm.my/gisdeco2004](http://www.bfab.utm.my/gisdeco2004)

May 12-14, 2004  
Miami Beach, FL USA  
GeoSpatial World 2004  
[www.geospatialworld.com/](http://www.geospatialworld.com/)

May 22-27, 2004  
Athens, Greece  
FIG Working Week and XXVII General Assembly  
[www.fig.net/figtree/events/events2004.htm](http://www.fig.net/figtree/events/events2004.htm)

August 9-13, 2004  
San Diego, CA  
ESRI International User Conference  
[esri.com/uc](http://esri.com/uc)

November 7-10, 2004  
Berlin, Germany  
19<sup>th</sup> CODATA International Conference  
[www.codata.org/04conf/index.html](http://www.codata.org/04conf/index.html)  
[digitalearth03.geogr.muni](http://digitalearth03.geogr.muni)