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Global Spatial Data Infrastructure (GSDI): At the Crossroads, moving forward

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Abstract

The Global Spatial Data Infrastructure (GSDI) supports ready global access to geographic information. This is achieved through the coordinated actions of nations and organizations that promote awareness and implementation of complimentary policies, common standards and effective mechanisms for the development and availability of interoperable digital geographic data and technologies to support decision making at all scales for multiple purposes. These actions encompass 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 facilitated in meeting their objectives.

The GSDI started as an alliance of people, organizations and private companies that have interest in and promote the creation of National Spatial Data Infrastructures (NSDI) within their countries. Additionally, because the impacts of both natural and human induced changes rarely are limited to political boundaries, they recognize the advantages of sharing their geospatial data with adjacent states/countries. The first GSDI meeting was held in Bonn, Germany in 1995 with a small group of invited attendees. The sixth meeting was conducted in Budapest, Hungary in September 2002 with over 250 attendees representing more than 50 nations and ran for 4 days with workshops and many parallel sessions examining the technology and policy changes associated with local to global SDI development.

The GSDI is currently developing into a formal organisation and has successfully filed to become a non-profit corporation. The non-profit status is beneficial in partnering with other global, regional, national agencies, NGOs, and industry to facilitate the pursuit and distribution of support funding for local, national, and regional SDI development. To be successful, it needs to move into the following areas quickly:

- Complete the organizational processes with membership and dues categories and mechanisms to attract membership.
- Develop a realistic financial plan maximizing funding sources from dues, individual donors that support the aims of the GSDI, grants, and other sources.
- Hire appropriate staff and provide incentives for increasing the membership and donor organizations.
- Expand the circle of global bodies including the regional permanent committees to maximize the SDI impact around the world.
- Develop global partners to jointly seek and distribute funds for capacity building on a local to a global basis.
- Seek out and partner with global donor organizations for capacity building locally to globally.
- Build on past and current successes like the GSDI Cookbook, the GM/GSDI/ESRI grant program, collaboration with the ISCGM, the Intergraph grant program, etc.

Background

In the early 1990s a few nations saw the benefit of sharing digital geospatial information across local and state/provincial boundaries. Some had started developing National Spatial Data Infrastructures (NSDI), and some began to compare experiences with colleagues in other countries. There was enough interest by 1995 that Klaus Barwinski of the National Mapping Organization of North Rhine Westphalia, Germany working with Fritz Peterson of the Atlantic Institute in the United States invited several leaders to Bonn, Germany to participate in a meeting of what is now recognized as the first meeting of the Global Spatial Data Infrastructure (GSDI) organization.

Essentially, this small group of luminaries could see that the same benefits generated out of sharing data across boundaries internal to any nation were also realized by sharing similar data across international borders. Typically, watersheds, pollution, poverty, famine, disease, drought, and similar social issues are not limited to most political boundaries. The same savings in human and financial resources are found when collecting the data once and using them many times. Additional savings are found when using common standards and interoperable software and practices. Data discovery is made easier for everyone when data is described by standard metadata. It all promotes good governance and good business.

An informal group promoting GSDI evolved and sponsored regular sharing of information on SDI activities both nationally and globally. The first GSDI meeting was followed by five others. GSDI-6 convened in Budapest, Hungary in September of 2002 and attracted roughly 250 attendees representing over 50 nation and plans are already well under way for GSDI-7 which will be held in Bangalore India from February 2nd to 6th 2004.

The GSDI has no formal organizational status and no funding base except that which the participants contribute. The Secretariat is currently largely sponsored out of the US Federal Geographic Data Committee (FGDC) Staff Offices in Reston Virginia, USA. The organization is now seeking a more robust organizational structure: one that interacts with other related global organizations and meets regularly to exchange ideas; one that **actively** promotes/conducts capacity building and research; one that seeks and distributes funds to help fledgling SDIs around the world.

Recently the GSDI has taken the first steps in the incorporation process, and draft by-laws have been developed and were approved by the GSDI Council and Board. A formal Board vote ratified the by-laws and the legal incorporation process will be finalized shortly. The GSDI is also bolstered by four permanent committees covering regions of the globe:

- Permanent Committee for Geographic Information in Asia and the Pacific (PCGIAP).
- Permanent Committee for the Americas (PCIDEA).
- European Umbrella Organisation for Geographic Information (EUROGI).
- Permanent Committee for Africa – Just organized through the support of the UN Economic Commission for Africa, EISAfrica, and others.

The next steps in the process include but are not limited to:

- Develop and agree on the strategic and implementation plans
- Complete the incorporation process
- Prepare a funding model
- Build a public/private/NGO/individual membership plan
- Hire staff and services
- Promote and encourage permanent committee activity

- Work with other global partners to:
 - Leverage funding proposals
 - Share capacity building activities
 - Conduct joint meetings
- Expand on the case studies in the GSDI Cookbook focusing emerging nations.
- Continue to collaborate with the commercial sector and expand where possible joint grant programs such as the two very generous grants programs offered by ESRI and Intergraph.

Strategic Plan

The first item on the above list is the development of strategic and implementation plans. This is an iterative process that will move back and forth between the “what’ and the “how/when.” What follows is an early version of the strategic plan for the GSDI.

Definition

The Global Spatial Data Infrastructure supports ready global access to geographic information. This is achieved through the coordinated actions of nations and organizations that promote awareness and implementation of complimentary policies, common standards and effective mechanisms for the development and availability of interoperable digital geographic data and technologies to support decision making at all scales for multiple purposes. These actions encompass 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.

Purpose

The Global Spatial Data Infrastructure Association is dedicated to international cooperation and collaboration in support of local, national and international spatial data infrastructure developments that would allow nations to better address social, economic, and environmental issues of pressing importance. Its purpose is to focus on communication, education, scientific and research efforts to achieve these objectives.

Mission

The mission of the GSDI is to:

- serve as a point of contact and effective voice for those in the global community involved in developing, implementing and advancing spatial data infrastructure concepts;
- foster spatial data infrastructures that support sustainable social, economic, and environmental systems integrated from local to global scales; and
- promote the informed and responsible use of geographic information and spatial technologies for the benefit of society.

Vision, Goals, and Objectives

Vision: an infrastructure that will allow all users simple access global spatial data at a variety of scales, to support all spatial data needs.

The Global Spatial Data Infrastructure (GSDI) Association will lead and coordinate work at the national, regional, and global level to bring about an infrastructure that appears seamless to users all over the world. The GSDI will support the work of national organisations to develop their own National Spatial Data Infrastructures (NSDI), and will lead efforts of regional and global organisations to ensure that the NSDIs are interoperable, and accessible through web services, on a global basis. The GSDI will only be as competent to achieve these goals as the quality of its partnerships with public, private, academic, and non-governmental organisations will allow.

The GSDI will work toward this vision through four main goals.

- Goal 1:** To continue to promote and develop awareness and exchanges of national and global infrastructure issues.
- Goal 2:** To promote and conduct SDI development research.
- Goal 3:** To actively promote, encourage, support, and conduct capacity building.
- Goal 4:** To establish and support active fund raising programs to conduct the above activities.

The following objectives will help achieve these goals:

Goal 1: Continue to develop awareness and exchanges:

Objectives

- Provide forums for SDI professionals, scientists, and applications people on a regular basis (annually to every 1½ years) to share and exchange ideas.
- Collaborate with other global organisations in developing SDI awareness and interaction by contributing technical papers, building mutual technical sessions, providing workshops on SDI topics, conducting training, etc within their technical forums.
- Provide for direct interaction with policy makers around the world to develop SDI awareness and encourage SDI development.
- Maintain and update the GSDI Cookbook.
- Maintain a current web presence through the GSDI web page with appropriate linkages to related organisations promoting the same principles.
- Publish a GSDI Newsletter.
- Develop workshops for non-SDI disciplines to assist in using SDIs as a tool, rather than as an end product.

Goal 2: Promote and conduct SDI development research

Objectives

- Create simple and effective Web services.
- Develop metadata that accurately defines the data, how to access the data, and the integrity of the data.

- Support the development of national and organisational business cases through development and maintenance of return on investment models.
- Metadata/data model development.

Goal 3: Actively promote, encourage, support, and conduct capacity building:

Objectives

- Conduct SDI awareness training for manager/minister officials. This will include both ministers responsible for SDI activities, and those responsible for other disciplines that will make use of the spatial data.
- Conduct training for those that may be coordinating SDI activities within any country.
- Facilitate the sharing of information and case examples for those responsible for building creating metadata, building clearing houses, promulgating standards and related technical and managerial activities.
- Provide on-site support as requested for hands-on work to accomplish the above activities
- Conduct follow-up with those trained in order to determine progress, assist in problem areas, and document successful (and/or unsuccessful) business case examples to pass on to other emerging SDI activities globally.

Goal 4: Establish an active fund raising program to support and conduct the above activities:

Objectives

- enlist professionals to build a fundraising (grant seeking program);
- identify and collaborate with global partners to assist in identifying and contacting global donor organisations with which we all can partner to seek funds to support capacity building globally;
- identify and partner with global donor organisations to seek out and obtain funds to conduct capacity building throughout the world; and
- prepare requisitioning instruments and follow up with donors.

Closure

The GSDI is reporting out to the GSDI Council and to the world that it is ready to emerge and become a proactive vehicle promoting SDI within nations and around the world.

GSDI Officers:

President	– Ian Masser, United Kingdom
President Elect	– Mukund Rao, Bangalore, India
Past Chair	– Santiago Borrero, Bogota, Columbia

Temporary Board Members:

Harlan Onsrud	– University of Maine, USA, Co-Chair, Legal and Economic Working Group
Douglas Nebert	– US FGDC, Reston, Virginia. USA, Chair, Technical Working Group
Ivan DeLoatch	– Staff Director, US FGDC, Reston, Virginia USA

GSDI Secretariat:

Alan Stevens – US FGDC, Reston, Virginia, USA
Keith Thackrey – US FGDC, Reston, Virginia, USA

Some useful URLs

www.gsdi.org	Global Spatial Data Infrastructure
www.pcqiap.org	Permanent Comm. for Geog. Info. for Asia and the Pacific
www.eurogi.org	European Umbrella Org. for Geog. Info.
www.cpidea.org.co	Perm. Comm. For the Americas
www.fgdc.gov	Federal Geographic Data Committee
www.gsdi7.org.in	GSDI-7 web site