Overview

- Geo-informatics World
- From Interoperable Internet GIS to Digital Earth, Digital Asia
- Digital Asia Research Center
- Future Activities
  - Digital Earth 3-D Geobrowsers
  - 4th International Symposium on Digital Earth
  - Proposed Alliance framework
Three Layer Model in Geo-Informatics

- **Creation of Value, Belief, Idea, Principle**
- **Dissemination Distribution**
- **Behavior norm**
- **Policy Making Consensus Making**

- **Monitoring Sensing**
- **GIS**
- **・RS**

- **GISYSTEM**
- **Urban area**
- **GISERVICE**
- **g-life, geo-enabling society**
- **g-contents**
- **GISCIENCE**
- **Urban area**

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**The Digital Earth Vision**

- "I believe we need a ‘Digital Earth,’ a multi-resolution, three-dimensional representation of the planet, into which we can embed vast quantities of geo-referenced data.

- a ‘collaboratory’ for research scientists seeking to understand the complex interaction between humanity and our environment.”

- “a ‘user interface’ – a browsable, 3-D version of the planet available at various levels of resolution, a rapidly growing universe of networked geospatial information, and the mechanisms for integrating and displaying information from multiple sources.”

(Gore, 1998)
**Digital Earth (DE) Related Trends**

1999 - 1st Inter. Sympo., CAS, Beijing, China, Towards DE
   Established "International Steering Committee for ISDE"


   DE -- Information Resources for Global Sustainability
   New ISDE kicked off at Brno
   i.e. from International Symposium on DE to International Society for DE

2004 - 1st International Society Board Meeting (tbd)
2005 - 4th International Symposium, March 28-31, Tokyo, Japan
   DE as the Global Commons

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**Implementing Components of the DE Vision**

- **Technology**
  Visualization, high-speed computing, AI, real-time computing, intelligent systems, search engines, data fusion, dynamic modeling, 3D rendering, Grid Computing, et cetera

- **Standards and Interoperability Protocols**
  FGDC, NSDI, GSDI, OGC, ISO, etc.

- **Networks**
  ITC, W3C, Geography.net, UNEP.net, etc.

- **Content**
  Clearinghouses, Global Databases, Global Map, etc.

- **Applications**
  Weather, Land Cover, Health, Urban, Transport, et cetera
Framework of Digital Earth

Service Providers
- Consumer services (e.g., electronic commerce)
- Business services (e.g., supply chain mgmt)
- Government services (e.g., emergency response)

Application & Content Providers
- Communications and collaboration
- Information search and exchange
- Web applications (e.g., electronic catalogs)
- Content production

Network Service Providers
- Network access
- Network security administration
- Distributed hosting
- Secure messaging and transaction processing

Network Providers
- IP backbone for Internet, Intranet and Extranet
- Network security
- Managed network services

Global Network Infrastructure

Ubiquitous Geo-processing Environment

Evaluation, validation by user
From social context

Clearing-House for Public
Clearing-House for Admin.
Data Conversion
Semantics
Transfer
Ontology

Digital Map
Statistics
Images

National Spatial Data Infrastructure

Need to connect to ITC mainstream

Gap – Digital Divide

Bridging the Gap

Digital Earth

% Users

Digital Asia

Gap – Digital Divide

Digital Map, EO data, Content

Infrastructure and Tech. Base, GSDI

Need to connect to ITC mainstream
ISPRS WG IV/9 Global Data Base

There are seven important points for successful global environmental databases;
- long-term commitment and funding
- national-global and local-global issues
  - understanding of the effort to create global environmental DB as a framework database within which to place local data
  - create a multi-scale
- user-producer issues
  - meet user requirements
  - resulting information by target audience
- standardization/harmonization
- validation and ground truth/reference data
- data access
- cultural bias

Terms of References (TBD)
- Compilation of existing and planned locations and the quality of global databases;
- Development of environmental infrastructures for access and use;
- Integration and harmonization environmental databases on regional, national and global levels and their promotion;
- Development of ontology and semantics for metadata catalogues;
- Development the innovative interface for browsing and analysis based on distributed environment e.g. 3D Geo-browser and Grid computing
- co-operation with ISCGM, WGISS, ICA, Digital Earth, IGBP, and ISPRS TC VII
**Digital ASIA Network**

-An initiative to provide people and community with easy access to geospatial information over the Internet at multi-scale

-by establishing a scheme to integrate and share the GIS and Remote Sensing data among all the countries of Asia,

-for practical application, global change studies, sustainable development, and global environmental protection, etc.

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**Cascading Benefits from Common Vision and Approach for Digital Asia Network and Digital Earth**

For all Villages:

- Solve practical problems
- Contribute to informed decision making
- Communicate with citizens
Development of GLOBAL LITERACY e-MAP (LIT e-MAP)

1. Comprehensive GIS based information platform to show literacy situation and progress at global, regional, and national levels.

2. e-MAP will consist of two databases, i.e., (1) a web-based GIS database which contain global literacy situation and leading literacy programmes and (2) a standalone GIS database which contains literacy profile and monitor the progress at country level (Data/information to be filled in and updated on regular basis by countries and connected to Component 1 above).
What is MANGO?

- Map-base
- Analysis for
- Non-formal Education
- Goals and
- Outcomes

✓ Computer software for community data base to support monitoring non-formal learning activities at the community level and the project level.

✓ Handbook on making and using community data base (with and without use of MANGO software).

✓ UNESCO & ACCU project

Objectives

- To develop participatory monitoring tools for literacy and continuing education projects at community and project/district levels.
- To devise a model for using ICT to facilitate the work of NFE personnel.
- To improve skills of NFE personnel on monitoring cycle (information collection, input, output, analysis, application)
- To contribute to better documentation and advocacy of NFE projects.
Concept of Digital Asia
--Easy Access to Geo Spatial Information

Decision Maker

Stake Holders

Expert

Public

Service Sharing System

Digital Asia

GIS (Geographic Information Service)

Data Sharing System

GIS (Geographic Information System)

Database / Data Resources

Geo-Spatial Data

Earth Observation Data

Our future Plan... testbed study and training

- Cyber education
  - Distance learning
  - Virtual University
- Real training
  - Field work, labo. work
  - Case method, Discussion
- Action Plan, Combining, Follow up

Digital Asia Research Center
for Geo – Strategy
Keio University at SFC
Gateway System Development for Public users

Data Search & View System

Category Selection
Area Selection
Theme Selection

3D Image
(View Image on the surface of sphere)

2D Image
**NHK Special TV Documentary Series**

**“Precious Earth: Mapping the Human Condition”**

- Focusing of life and surrounding environments of 6.3 billion people
- Embarks upon a journey to closely look at the current world by “data map” created using GIS and RS, such as “Map of life”, “Map of Wealth”, “Map of Social Security and Safety”, “Map of families”
- Introduce maps of the present, past and future
Conceptual diagram for the network and delivery of global remote sensing data via a Japanese-US ISDE University Alliance

Network growth based on Japanese-US ISDE University Alliance Model
Digital Earth, Asia... and Participatory Web GIS are a Gateway to link real world and Cyber space and to capture local knowledge and combining it.
4th International Symposium on Digital Earth
28-31 March 2005
Tokyo
JAPAN

Digital Earth as the Global Commons

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See you on 4th Digital Earth!