The Present State of Geographic Information in Korea*

* Prepared by the National Geographic Information Institute, Republic of Korea
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National Geographic Information Institute, Republic of Korea

Geographic Information System

The term "GIS" in Korea

Geographic Information System

Society

Service
Toward Geographic Information Society

GOVERNMENT INITIATED GIS BUILD-UP

1st National GIS Build-Up

Period: 1995~2000

Policy Direction
Building Foundation for GIS

- Due to insufficient capability of the private sector, the government sector led investments and policy measures.
- Then it focused on creating the initial demand for GIS by constructing some digital basic maps like topographic maps, cadastral maps, and so on.
1st National GIS Build-Up

Conforming Geodetic Foundation for Mapping and GIS

Digital Topographic Maps (1:1000, 1:5000, 1:25000)

Digitizing National Cadastral Maps

2nd National GIS Build-Up

Period: 2001~2005

Policy Direction

GIS Data Utilization

- To utilize GIS, government promoted the development of management system for some national primary facilities,
- and built up national spatial data infrastructure.
- Also, National Geographic Information Clearinghouse (NGIC) was constructed.
2nd National GIS Build-Up

- Management System for National Primary Utilities
- National Spatial Data Infrastructure
- LMIS (Land Management Information System)

National Geographic Information Clearinghouse (NGIC)

- Online Service on the geographic information to users via internet
- An integrated GIS portal site, NGIC provides the search and distribution services on geographic information to the public and private sides
**3rd National GIS Building Up**

**Policy Direction**

- **Embodiment of GIS Based E-Government**

- To embody GIS based e-government, NCHGIS is promoting some policies like below:
  - Construct the expansion of GIS application system and promote the connection-unification among other systems.
  - Develop the next-generation core technology to lead n-GIS and GIS technologies for considering practical use.
  - Ensure the interoperability of national spatial information and establish the NCHGIS standards by 2010.

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**Core Technology Development**

**Geospatial Information Infrastructure**

- **Multi-purpose Ubiquitous Reference Point**
  - RFID tag based reference point for surveying, location service, ... 

- **Next generation digital maps**
  - Next generation national digital map
    - Seamless
    - Multi-scale
    - Multi-dimension
    - Spatiotemporal
    - Object-oriented (Feature based)

- **Ground 3D Laser scanner**
  - Objective Spec.
    - Measureable Distance: 300m/90%
    - Ranging accuracy: 3mm
    - Positioning accuracy: 5mm
    - Horizontal FOV: 360°
    - Vertical FOV: 270°

- **Precise Korean New Geoid model**
  - Precise Korean Geoid (cm level)
    - Ground/Sea/Aerial gravity data
    - Satellite gravity data
    - GPS/Leveling data
    - Precise topographic model
### Core Technology Development

#### Intelligent Urban Facility Management

<table>
<thead>
<tr>
<th>Underground facility sensor network package</th>
<th>Ground facility sensor network package</th>
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<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Facility</strong>: gas pipeline, water &amp; sewage, ...</td>
<td><strong>Facility</strong>: guard-rail, road lamp, CCTV, ...</td>
</tr>
<tr>
<td><strong>Package</strong>: JFSN sensor-node, gateway</td>
<td><strong>Package</strong>: urban facility sensor-node, gateway</td>
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<td><strong>Info.</strong>: condition, leakage, damage, corrosion, ...</td>
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#### Integration SW of ground/underground sensing data

- Integration, control, reporting maintenance of ground/underground sensing system

#### Urban geospatial information platform

- Urban geospatial information platform for u-City service
  - Service standard
  - Conceptual model
  - ...
Car Navigation System

Construct specialized geographic information layers for the product of each companies

Private

Government

Construct and supply primary framework geographic information layers for car navigation system

Street View? Road View!
Road Facility Management with Street View
Closing Remarks

CURRENT STATE AND VISION OF GIS IN KOREA

From public leading to the synergy of private-public cooperation

- GIS in Korea could have foundation by the help of major promotion of government
- Many private companies are providing creative and useful GIS services based on national GIS framework data supplied from government
- More effective and useful GIS services will be supplied as a result of private-public cooperation
Challenge for building a GIS system on real-time level

- We’ve found solution to apply spatial information to real world rapidly
  - Research for monitoring and quick updating national spatial changes
  - Research for building and modifying, updating GIS data with Vehicle MMS

- If we’ll join various GIS service model to rapid GIS data update system, you can see the more revolutionary and creative, useful GIS services

Thank You!

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