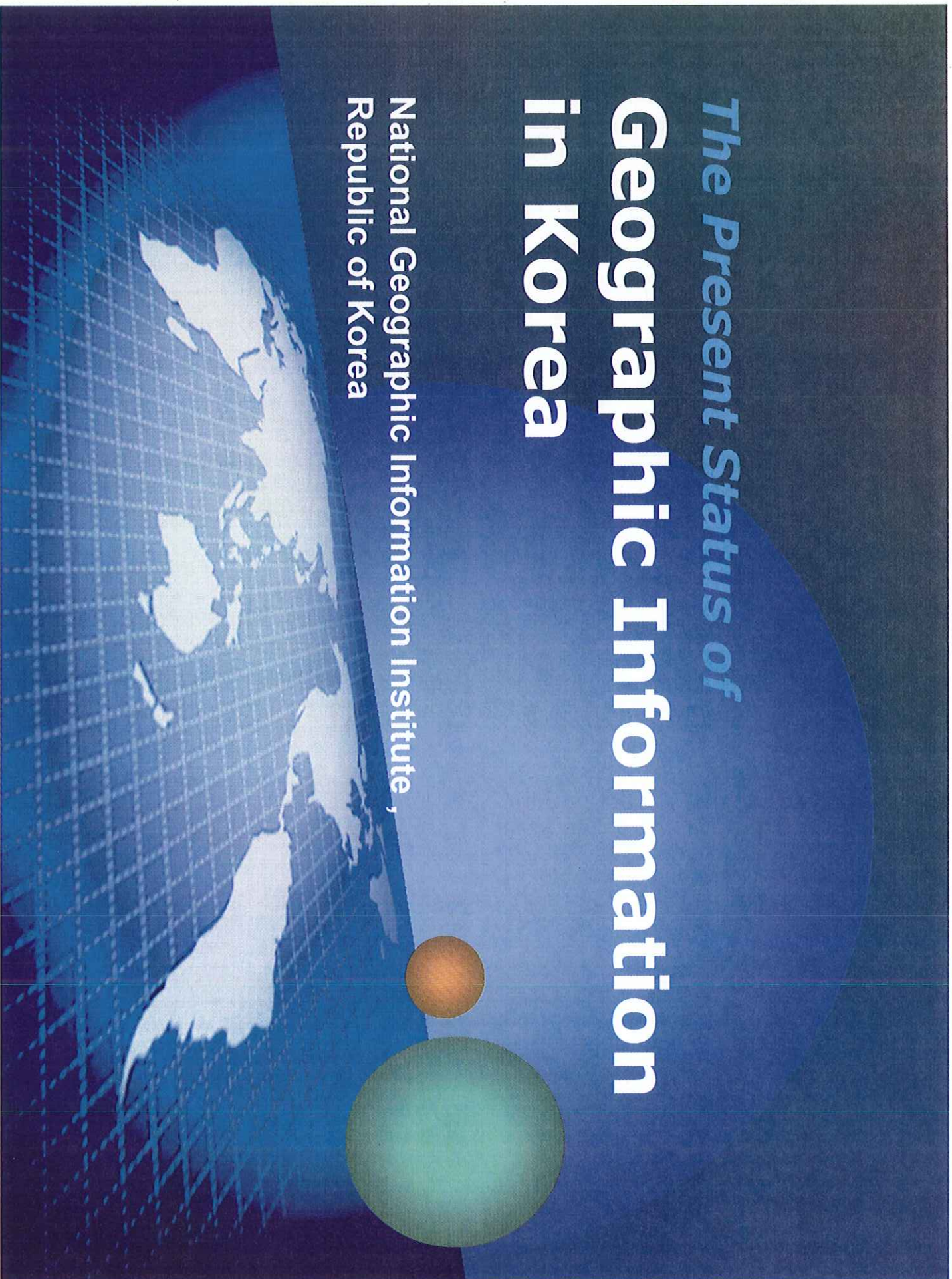
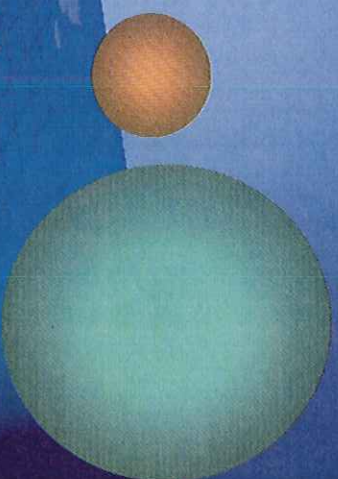


The Present Status of
**Geographic Information
in Korea**

National Geographic Information Institute,
Republic of Korea

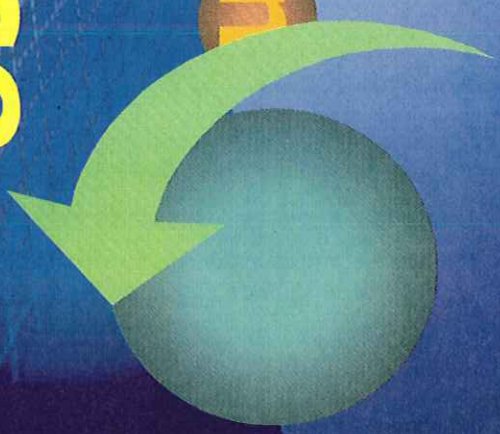


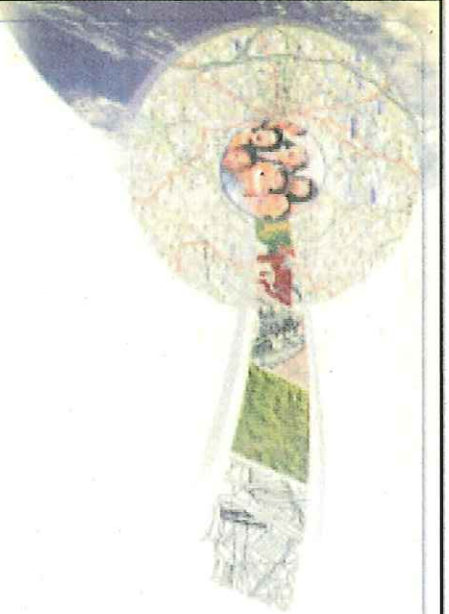
Geographic Information in Korea

Geographic Information System

Solution

Service





National GIS in Korea

- Introduction
- The 1st NGIS Master Plan
- The 2nd NGIS Master Plan
- The 3rd NGIS Master Plan

● Backgrounds of NGIS

- In the early 90's some municipalities (Taegu, Gwangju, etc) began to use GIS for spatial data management
- Gas explosion accidents in '94.12 and '95.4, made the central government realize the importance of spatial data

● Mi lestones

- 1995. 5 : Establishment of the First NGIS Master Plan
- 1995. 6 : MOCT took the leading role in NGIS
- 2000. 1 : Enactment of the NGIS Law
- 2000. 12 : Establishment of the Second NGIS Master Plan
- 2005. 12 : Establishment of the Third NGIS Master Plan



The 1st NGIS Master Plan

● Major Contents

- Plan period: 1995-2000
- Contents:
 - Setting up organizational structure for NGIS
 - Generation of spatial databases
 - Digital base maps & various thematic maps
 - Development of GIS technologies
 - GIS education and training
 - Standardization
- Total Cost: US\$ 279 Million



The 1st NGIS Master Plan

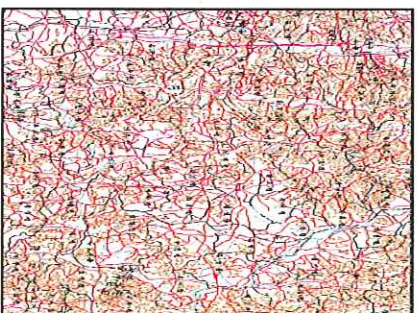
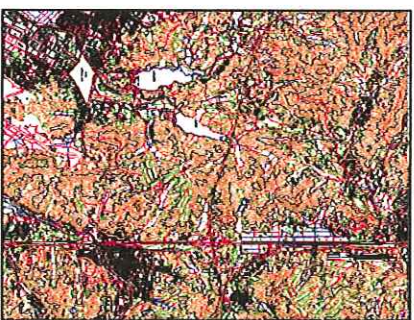
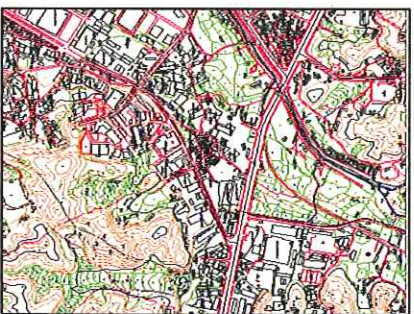
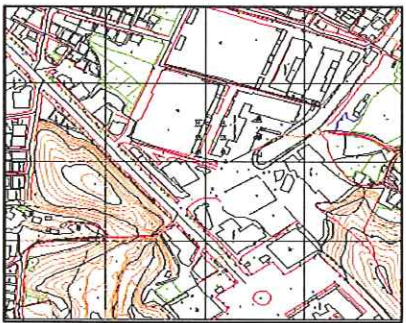
● Major Outcome

- Construction of digital maps
 - Digital base maps
 - 1:1,000 1:5,000 1:25,000
 - Various digital thematic maps
 - Digital cadastral map
- Generating underground facility DB
 - Detailed level of survey and investigation
 - Drinking pipe, sewer, road, gas, oil transport, telecom, heating, electricity
- Standardization
 - Cartographic representation, production
- Support for GIS Research and Development

The 1st NGIS Master Plan

● Construction of digital base maps

1 : 1,000		1:5,000		1:25,000		1:250,000	
Mapping	Revision	Mapping	Revision	Mapping	Revision	Mapping	Revision
12,428	3,150	16,494	1,660	754	-	13	-

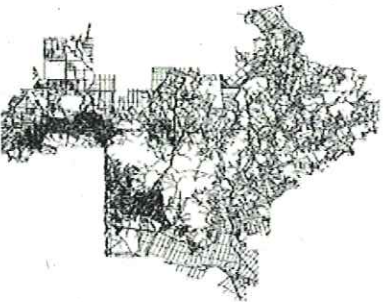


The 1st NGIS Master Plan

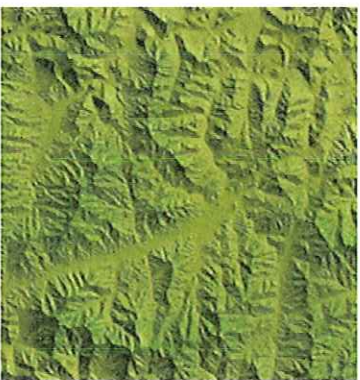
Thematic Maps and Cadastral Maps



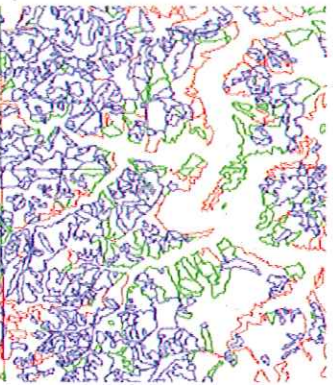
Land use Map



UIS Base Map



Digital Elevation Model



Vegetation Map



Cadastral Map

The 1st NGIS Master Plan

● Standards Developed

	Scope	# of standard	year
NGII	National (KICS)	1	1998~
	Industry (TTA)	9	1998~
	Regulations on geographic information production	23	1999~
MOCIE*	National (KS)	11	1999~
MIC**	National (KICS) and Industry (TTA)	4	1998~

* MOCIE: Ministry of Commerce, Industry and Energy

** MIC: Ministry of Information and Communication

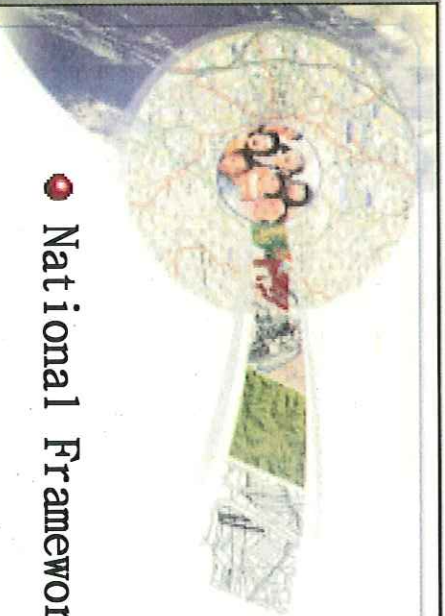


The 2nd NGIS Master Plan

● Major Contents

- Plan period: 2001–2005
- Contents:
 - National framework database
 - Geographic information distribution network
 - GIS applications development
 - Standardization
 - Human Resource development
 - GIS Research and Development
- Total Cost: US\$ 499 Million

The 2nd NGIS Master Plan

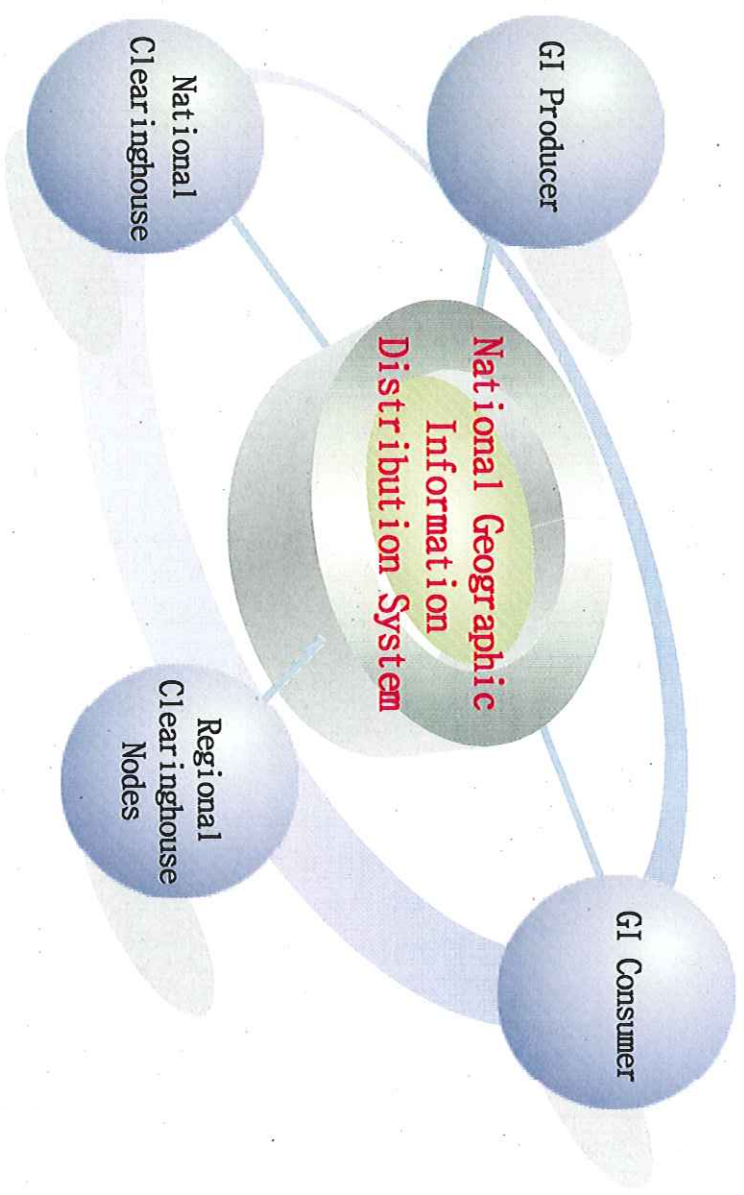


● National Framework Database

- Provide the most common data themes users need
- Consisted of the following 8 themes:
 - Administrative boundaries
 - Transportation
 - Hydrography
 - Cadastral maps
 - Geodetic controls
 - Topographic maps
 - Facilities
 - Satellite imagery & aerial photographs

The 2nd NGIS Master Plan

- Geographic information distribution network



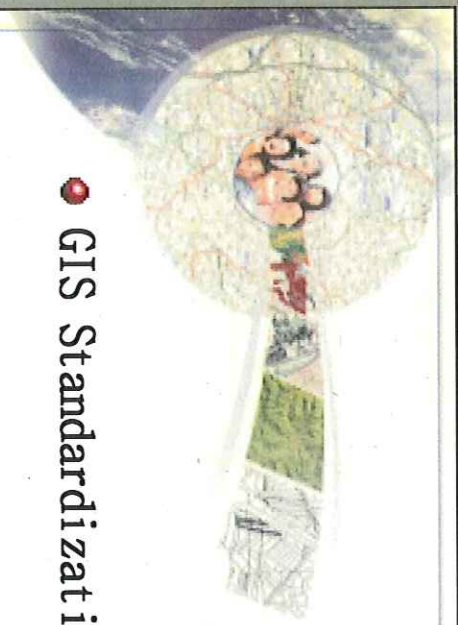
The 2nd NGIS Master Plan



● GIS Applications Development

- Underground facilities
- Environment
- Urban planning
- Mineral resources
- Agriculture
- Forestry
- Maritime and fisheries, etc.

The 2nd NGIS Master Plan



● GIS Standardization

- Production
- Cartographic representation
- Terminology
- Quality
- Classification (code)
- Metadata
- Data model
- Data transfer (format)



The 2nd NGIS Master Plan

● GIS Human Resources

- Improve the GIS education system
 - Increasing need for GIS professionals
- Build an integrated GIS education network
 - Encompasses industry, academia, and research institutes
- Increase the public recognition of GIS
 - Active public relations campaign

The 2nd NGIS Master Plan

● GIS R&D

- Continuing support for GIS-related research
 - Map generation and surveying
 - Application SW development
 - Data distribution related technologies
 - Component SW technology





The 2nd NGIS Master Plan

● Role of NGII

- Updating & Maintaining digital base maps
- Generating version 2 topographic maps
- Drafting and distributing standards
- Building and maintaining national framework database



The 3rd NGIS Master Plan

● Major Contents

- Plan period: 2006–2010
- Contents:
 - Expansion of national spatial data infrastructure and stabilization
 - GIS use maximization
 - Development of core GIS technologies
 - Establishment of NGIS standards
 - Advancement of NGIS policy
- Total Cost: US\$ 1,520 Million



The 3rd NGIS Master Plan

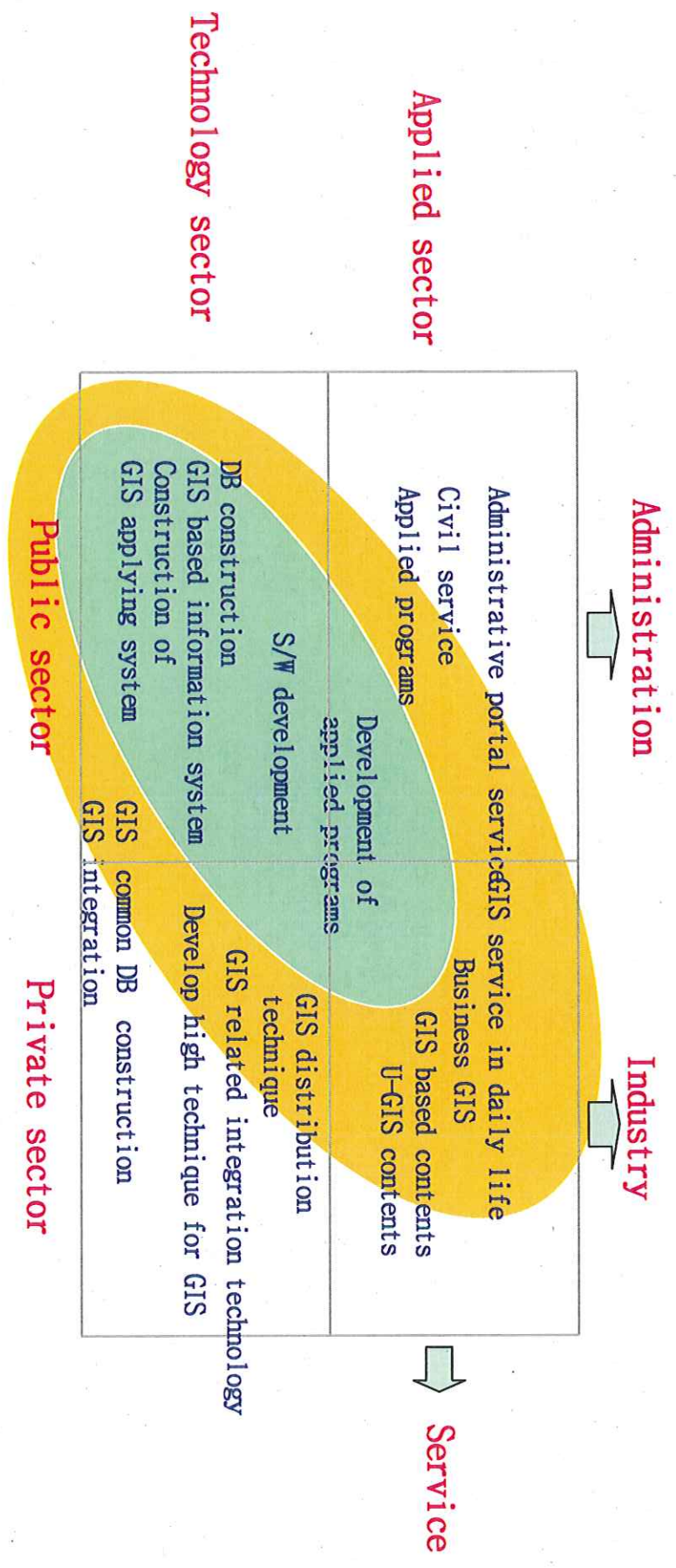
● Paradigm Shift

- Strong promotion for informatization in Korea:
 - 『u-KOREA』
 - 『u-City』
 - 『u-IT839 strategy』

- GIS is an essential element for development of the future Korea

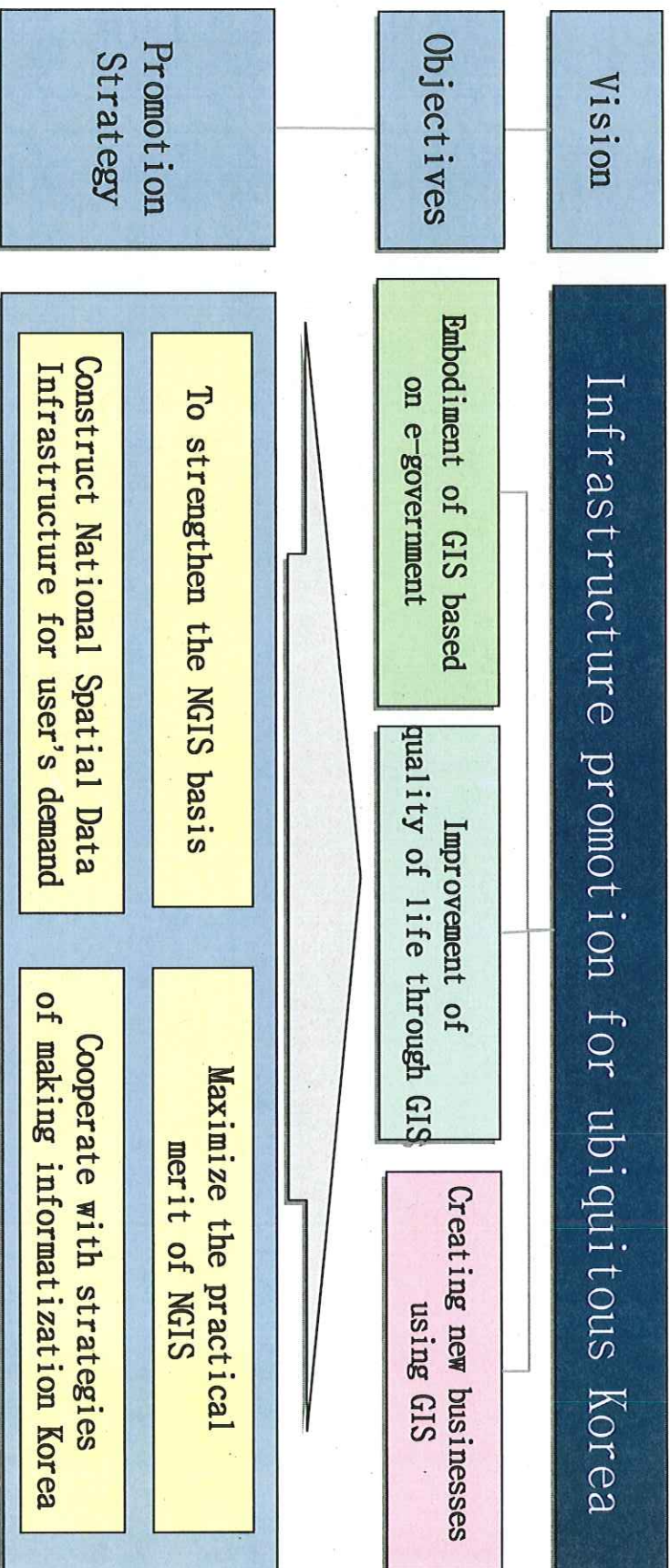
The 3rd NGIS Master Plan

- Direction for GIS development



The 3rd NGIS Master Plan

- Long-term vision and promotion strategy





The 3rd NGIS Master Plan

● Main contents of The Third NGIS Plan (2006~2010)

- Expansion of national spatial data infrastructure and stabilization
 - Complete the construction of National Spatial Data Infrastructure by 2010
 - Update national framework data in a timely fashion and provide data quality standard
- GIS use maximization
 - Expand the adoption of GIS in various applications and promote system integration between related systems
 - Construct one-stop geodata portal



The 3rd NGIS Master Plan

● Main contents of The Third NGIS Plan (2006~2010)

- Development of core GIS technologies
 - Develop next-generation u-GIS technology
 - Develop value-added products
- Establishment of NGIS standard management system
 - Establish base NGIS standards
 - Mandate the use of NGIS standards in applications
- Improvement of NGIS policy
 - Strengthen the support for GIS industry and human resource development
 - Enhance the GIS promotion and improve project coordination



NSDI Policy Bureau

(Territorial information and policy Div., Spatial information planning Div., Cadastral planning div., NSDI Center)

Ministry of Land, Transport and Maritime Affairs



Act on Land Survey

Geodetic control points, GIS, Nat'l base

topographic map
Ministry of Construction & Transportation

Act on Cadastral Survey

Cadastral map & survey, Land registration

Korean Cadastral Survey Corp.
Ministry of Government and Home Affairs

Act on Hydrographic Survey

Hydrographical survey, Marine chart, Ocean GIS, Ocean logistic

Korean Hydrographic and Oceanographic Administration
Ministry of Maritime Affairs & Fisheries

※ NGII function is now being restructured

Promoting R & D in geospatial & GIS field

[www.intelligentkorea.com]

- 1 Geospatial information infrastructure
- 2 Land monitoring
- 3 Intelligent Urban Facility Management
- 4 U-GIS Core SW technology
- 5 Development of indoor-outdoor spatial information technology

Total budget of US\$ 100 mil. invested from 2006 to 2012



The 3rd NGIS Master Plan

● Role of NGII

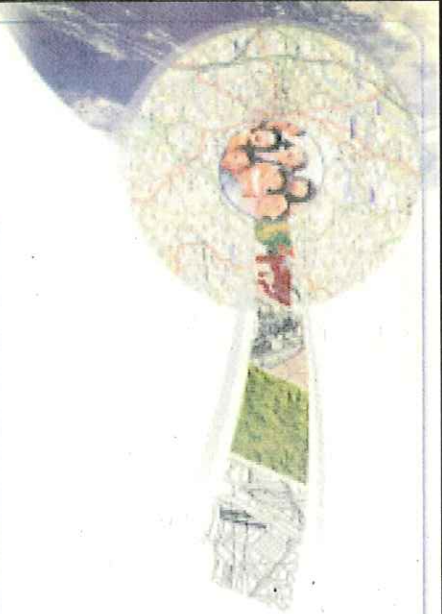
- Expansion of Framework Data and Quality Control
 - Continue to Build Framework Database for Transportation, Hydrology, Facilities, Topography, Geodetic Control, Spatial Imagery
 - Update and maintain the framework database and set up a quality control system
- Construction of New National Geospatial databases
 - Construct 3D digital topographic map database
 - Construct a new multi-dimensional geospatial data by combining aerial photos, remote sensing images, and DEMs
 - Develop an Integrated Spatial Imagery Management System



The 3rd NGIS Master Plan

● Role of NGII (continued)

- Standardization
 - Actively participate in international standardization activity (ISO, OGC etc.)
 - Timely update existing standards
 - Develop base standards for spatial information classification and various application services
 - Upgrade the exchange standard for digital topographic maps and framework data
 - Develop the standard for 3D geographic data, mobile and web-based geographic information



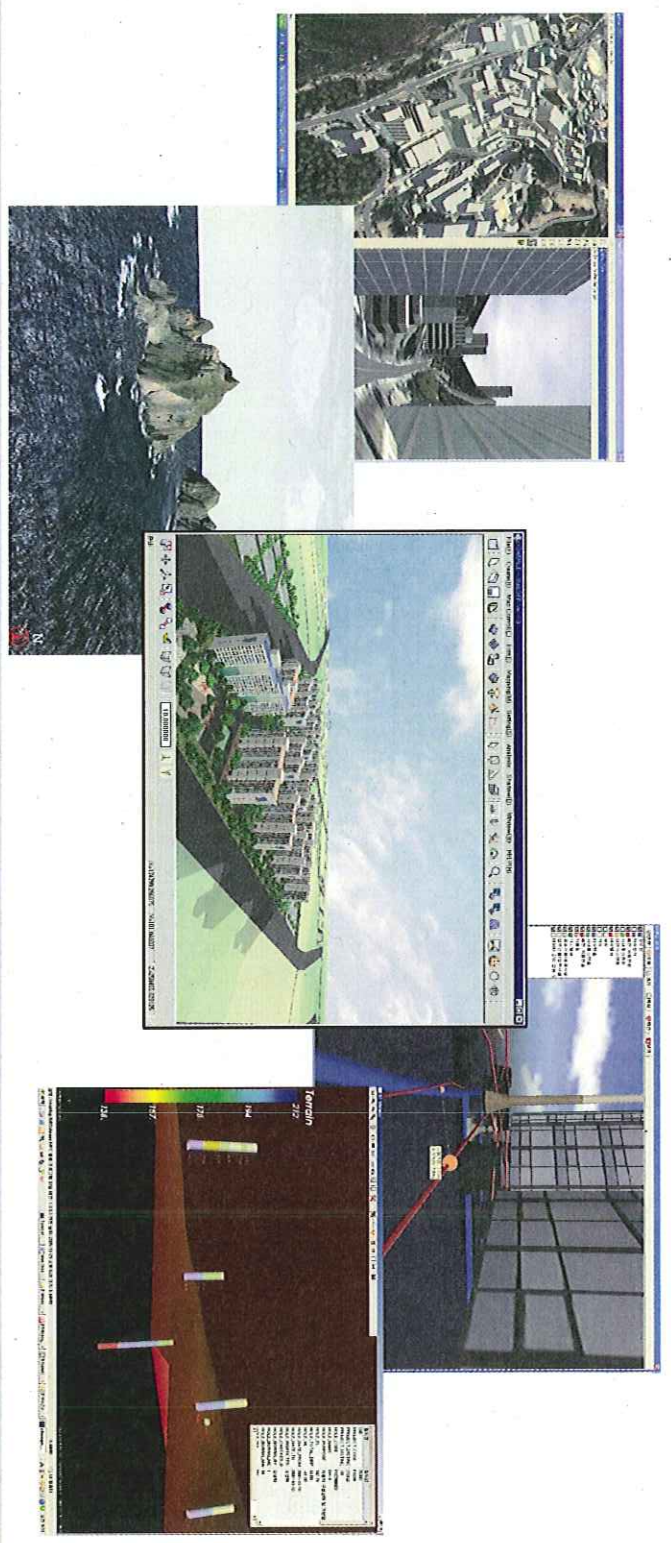
The Future of GIS in Korea

- 3D Spatial Data Infrastructure
- Disaster Prevention and Management
- Location Based Services
- Intelligent Transport Systems
- Ubiquitous City
- Ubiquitous GI Technology
- Ubiquitous GI and U-Korea

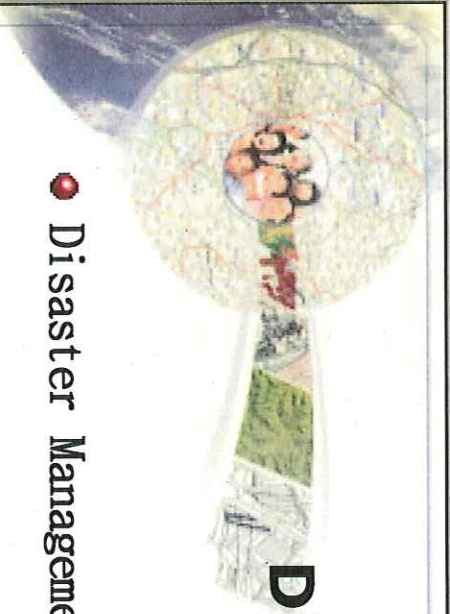
3D Spatial Data Infrastructure



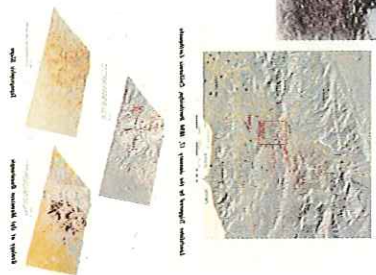
- 3D spatial Data Infrastructure
 - Pilot project for the 3D data model and standards
 - National 3D database construction



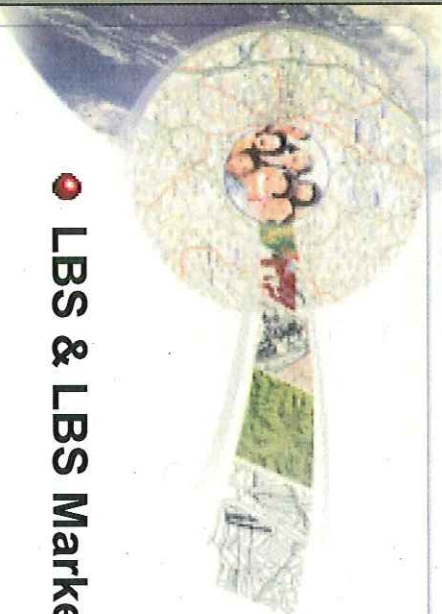
Disaster Prevention and Management



- Disaster Management (Flood and Landslide etc.,.)
- Analysis of the overflow timing and possible flood area
- Analysis of potential landslide area

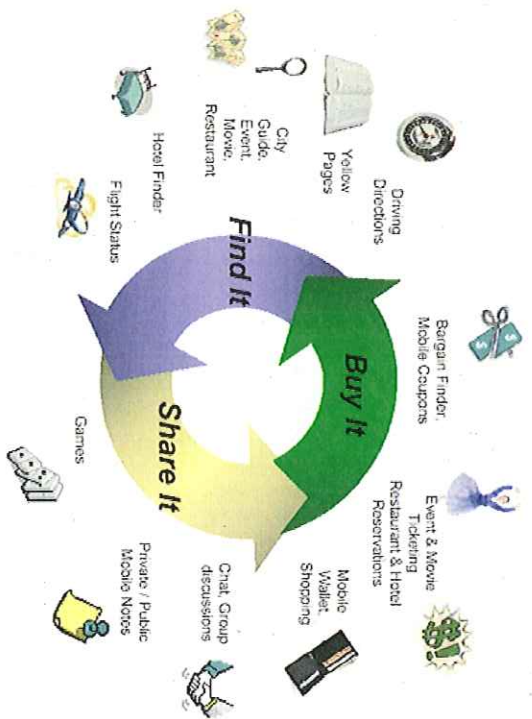


Location Based Services



● LBS & LBS Marketing

- Location-Based Services (LBS) refers a wide range of services based on the information for the physical location of user or device (i.e. mobile phone, PDA)
- Location-Based Promotion: Mobile Marketing





Intelligent Transportation Systems

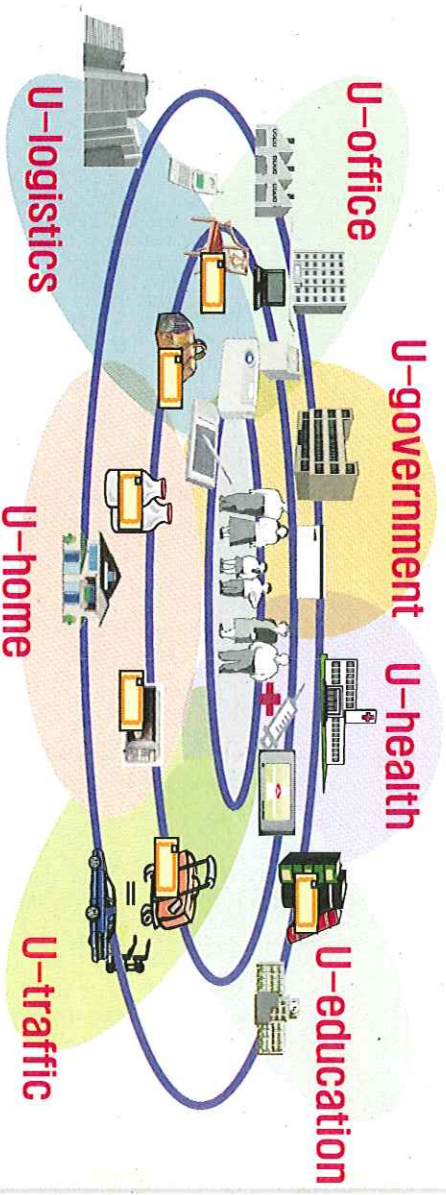
- **Intelligent Transportation Systems (ITS)**
 - Leap forward in ITS by various cutting-edge techniques
 - Provide technological solution to transportation problems such as congestion and accident
 - Improvement of safety and convenience for citizen



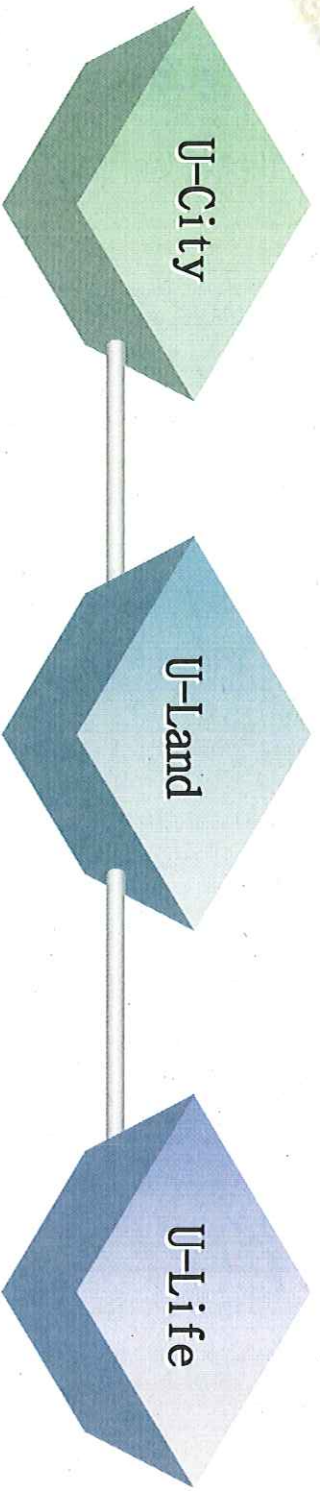
Ubiquitous City

Ubiquitous City

- Ubiquitous City (U-City) is the city that accommodates citizen's need, and is based on the advanced IT (GIS is the essential element for U-City)
- The MLTM(MOCT) has been defining U-City models and drawing up the U-City construction laws



Ubiquitous GI and U-Korea



Ubigi Technology

Technology Development

Standardization

Testbed

GIS/RS

LBS/Telematics

Sensor Infrastructure

Realization of U-Korea



Thank You !

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