The Characteristics of Korea Land Information System (KLIS) Based On Spatial Information System

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Korea Informatization Development History
Korea Informatization Development Stages

**Foundation**
- 1986: Enactment of Computer Network Construction Law
  - National computer network construction
  - National basic database construction
  - Focused on community, real estate, vehicles, employment, economic statistics
- Administration Computerization (1978~1986)
  - Computerization of documents and stats including pensions and wages, etc.

**Establishment**
- GIS Base Creation (1995~2000)
  - Made numerical maps out of cadastral and topical maps
  - Computerization of fundamental maps
  - PBLIS, Cadastral map computerization begins (’97.05)
    - System development finishes (’00.11)
  - Pilot project for LMIS (’98.02~12, 1st)
    - Established Land DB (’99.02~’00.10.2nd)

**GIS Base Creation**
  - Development of various application systems
  - Pilot project of PBLIS (’01.04)
    - System prevails nationally(’02.05~’02.12)
  - LMIS-National DB development finishes (’00.10~’05.12, 3rd~7th)
    - KLIS system integration begins (’01.12)
    - Business stars (’02.03~’02.06)
      - System prevails nationally (’05.06~’06.04)

**GIS Usages Prevail**
- 3rd NGIS Plan (2006~2010)
  - Synergy derived from the integration of the DB and application system
    - KLIS
      - 1st, 2nd sophistication (’06.07~’08.04)
      - National Spatial Integration system (’06)
      - ‘National project for 08~10 (’08.08~’10.12)
      - Future development plan (’09)

**GREEN Spatial Information**
- 4th ~ 5th Plan (2010~2017)
  - GReen is a spatial information for Green Growth
  - Everybody, Everywhere is ubiquitous system
  - New deal is opening, networks, fusion

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The National Spatial Information Main Policy

Requires general plan for spatial information strategy to correspond to rapidly developing ICT technology and paradigm change

-Spatial Information convergence creates new value for the economy as a new growth engine for the creative economy and is essential for the government 3.0

-Spatial Information is vital for the establishment of clear, scientific and customized policy for the people

<7 Strategies for the National Spatial Information>

1. High-Quality Spatial System Establishment
2. Promote Spatial Info Convergence Industries
3. Promote Spatial Big Data based Platform Service
4. Promote R&D in Spatial Info Convergence Technology
5. Cooperative Spatial Info System Enhancement
6. Train Spatial Information Experts
7. Establish the System of Spatial Info Convergence Policy
KLIS Development Processes
How the KLIS Progressed

Korea Land Information System

1st Stage
- PBLIS Established
- LMIS Established
- KLIS Plan Developed('01)
- Plan Confirmed('02)
- KLIS Established('03~'04)
- KLIS Prevailed('05~'06)

2nd Stage
- Established
- Onnara Real Estate Portal System
- Land Policy Support System
- Online Civil Affair Services

3rd Stage
- Preparation for Integrated Management Plan
- Functional Upgrades
- Managed Test bed for the Spatial Information industry promotion

4th Stage
- Transformation to Integrated National Spatial System
- Operated Concurrently with Real Estate System
- KLIS for the National Spatial Information SW development
- KLIS Standardization and overseas expansion

2014~
Pending Issues

- Errors in policy decision made by amateurs according to economic logics
  - Integration without thorough examinations for expected problems
  - Opinions of person in charge neglected (sacrificed by merit system)

- Systematic Problems
  - PBLIS and LMIS are systematically different (2 tiers, 3 tiers)
    * New phase called ‘middleware’ was made to link these two systems

- Connection between land book and floor plan not considered
  - Land book in Cadastral Administration, Floor plan in KLIS
    * ex) Land Alteration Data unmatched in KLIS before being applied

- Inefficiency caused by complex business process
  - Unprocessed data produced (Accumulation of unmatched data)
    * ex) Individual cadaster unmatched in serial cadastral map

KLIS = PBLIS(from Ministry of Govt Affairs) + LMIS(from MOLIT)
KLIS Characteristics
Repetitive, overlapping Works

Civil affairs processed only in selected areas

Duplicated data production and maintenance

Overlapping investments in regional governments

Delays in civil affair processes

Generation of unmatched management data

Solution for the 6 weaknesses of cadastral systems
KLIS supports 14 types of real estate system & is in connection with 100 outside system.
Future Development Directions For KLIS
1. Paradigm shift in land boundaries
   - Development of GPS, Electronic Plane Table
   - Systemization of survey and data processing (One-stop process enabled)

2. Convergence between IT and cadastral maps
   - Smartphone public service introduced -> Solution the conflict with the land boundaries
   - Digital convergence is the key to informatization
   - Universal information and service exchange enabled by Smartphones

3. Land usage sophistication
   - People nowadays focus on land usage than land boundaries → Smartphone usage

4. Introduction of digital maps
   - Digitization of Cadastral map (Automatic coordination transformation system)
   - Advanced technique for data acquisition, processing and storage
   - Systemization of survey and data processing (One-stop process enabled)
Thank you!