



Introduction

❖ Background

- Urban facilities are managed by ***different organizations in different ways.***
- ***Data Redundancy*** caused by the inefficiency of the administration.

❖ Objectives

- ***Selection of standard feature*** to avoid data redundancy.
- ***To use the cadastre information*** for the feature management.



Status of facility management (Urban Facility)

- ❖ There are various facility management systems
- ❖ However, same facilities have different DB attributes
- ❖ Need standardization of DB attributes using unique code

Facility	All Items	Common Items
Road	112	51
Water Supply	26	9
Sewage	14	2
Electricity	22	11
Telecommunication	17	8
Gas	15	6

< Common Management Item List of Urban Facilities in 3 municipalities >



Status of Using Feature (Cadastral Survey)

- ❖ Features used in the Cadastral Survey
 - Not used frequently
 - Features are not needed in cadastral survey.
 - No standard data

- ❖ Future Cadastral Survey Data
 - Point, Line, Polygon layer type for spatial analysis
 - Standard data to be shared



Problems of facility management

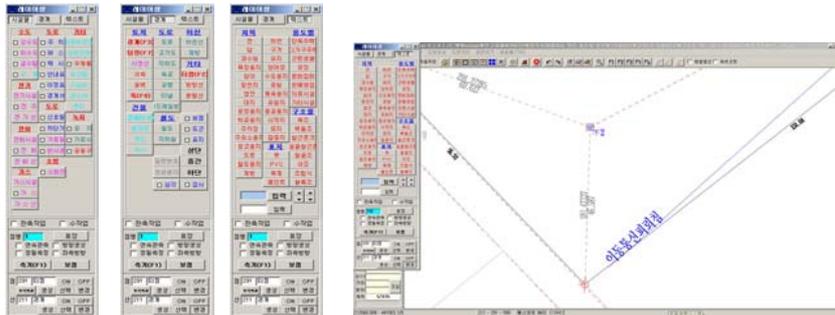
- ❖ Problems
 - Each organizations manage their facilities in different ways.
 - Same facilities are managed by each organizations.
 - There is no standard data.

- ❖ Suggestions
 - Acquisition and distribution of the data by only one organization with same format.
 - Could be cadastral organization such as KCSC



Acquisition of Cadastral Survey Data

- ❖ Total Survey System (TSS)
 - TSS processes from survey to drawing
 - Total-Station, Computer, Output-Units, Software
 - It has various functions
 - More than 90% of cadastral survey conducted in KCSC



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Acquisition of Cadastral Survey Data (Cont.)

- ❖ Total Survey System



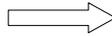
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➔ Laws & Regulations

- ❖ Cadastral Job Process Regulation article 52.6 (the drawing method of result map of cadastral survey)
- ❖ 「Cadastral Survey Result Registry」



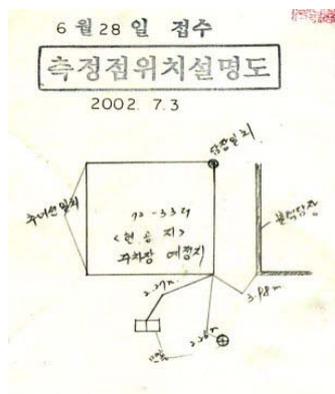
< Before >



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➔ Laws & Regulations (Cont.)

- ❖ Field Sketch
 - Measuring distance from the boundary points to facilities.



< Before >



< After >



Selection of Feature Item

Documentary Survey and Existing Research Data

- Basic Geographic Information
- Facility Status Data in Numerical Maps and Existing Research Reports

User Requirements

- External User Requirements
- Internal User Requirements

Total Survey System (TSS)

- Select frequently used Items

Select Items



User Requirement

❖ User Requirement

- To establish items and systems for the feature of new cadastral information
- External User Requirement
 - Municipalities, Government Invested Institutions, Map Manufacturers, Architectural Design Companies, Construction Companies
- Internal User Requirement
 - HQ of KCSC and its branches



External User Requirement

- ❖ Municipalities
 - Specified map service.
 - Boundary information with highly reliable data

- ❖ Government Invested Institutions
 - Urban facility information more accurate than aerial photos
 - Mountain area information that topographical maps do not provide

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External User Requirement (Cont.)

- ❖ Telecommunication Service Providers
 - Especially, need topographical map rather than cadastral maps

- ❖ Map Manufacturers
 - Updated information on new facilities
 - Try to expand their business scope into cadastral boundary service

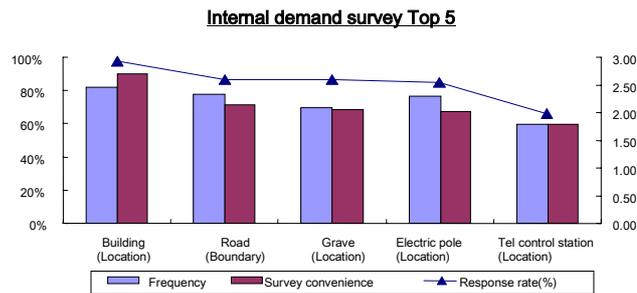
- ❖ Construction Companies
 - Cadastral information for property management

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Internal User Requirement

- ❖ Identify which cadastral information is demanded and in which area the information can be utilized
- ❖ The top 5 information is not different over all areas



Selection of Feature Item (Cont.)

Level 1 (Code)	Level 2 (Code)	Level 3 (Code)	Object Type
Point(1)	Traffic(101)	Traffic Signal(101001)	Point, multi point object
		Sign(101002)	
		Station(101003)	
	Hydrosphere(102)	-	
	Building(103)	-	
	Facility(104)	Manhole(104001)	
		Electric Pole(104002)	
		Hydrant(104003)	
		Lamp Pole(104004)	
		Cultural Property(104005)	
	Boundary(105)	-	
	Annotation(106)	Survey Control Point(106001)	
Boundary Point(106002)			



Selection of Feature Item (Cont.)

Level 1 (Code)	Level 2 (Code)	Level 3 (Code)	Object Type
Line(2)	Traffic(201)	Road(201001)	Line, multi line object
		Railroad(201002)	
	Hydrosphere(202)	River(202001)	
		Coastline(202002)	
		Bank(202003)	
	Building(203)	-	
	Facility(204)	Fencer(204001)	
	Boundary(205)	Administrative Boundary(205001)	
		Land Boundary(205002)	
	Annotation(206)	-	

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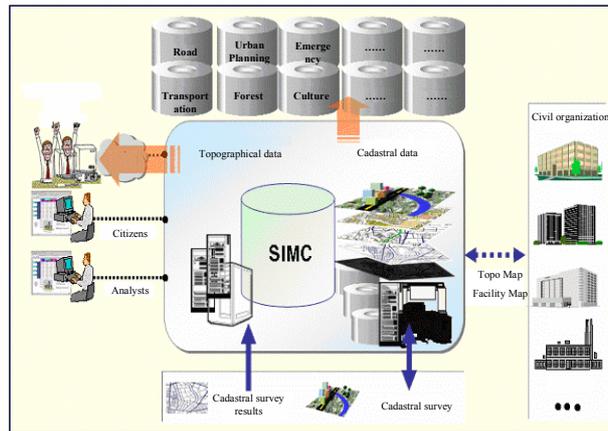
Selection of Feature Item (Cont.)

Level 1 (Code)	Level 2 (Code)	Level 3 (Code)	Object Type
polygon(3)	Traffic(301)	Land Route(301001)	polygon object
		Bridge(301002)	
		Tunnel(301003)	
		Footway(301004)	
		Parking Lot(301005)	
	Hydrosphere(302)	Lake/Reservoir(302001)	
	Building(303)	Building(303001)	
		Stair(303002)	
	Facility(304)	Graveyard(304001)	
	Boundary(305)	-	
	Annotation(306)	-	

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Utilization Plan

❖ Using feature data for Survey Information Management Center

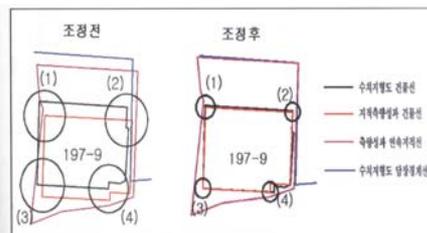


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Utilization Plan

❖ Numerical Map Update

- Numerical maps should be complemented more than 1 time every two years
- It is updated once every 4~5 years because of budget constraint
- Numerical maps can be updated by highly accurate cadastral data with features frequently



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