

## An approach to real estate information unification



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- 2. Current status**
- 3. The pilot project on cadastral data correction**
- 4. The real estate integration system**
- 5. Conclusion**

## □. Introduction

### ■ BACKGROUND

- Increasing interest in real estate related information
- Managing cadastre, architecture and registration information separately
- Errors with each register and non-coincident errors with other registers

⇒ **Difficulties with spatial data integration**

### ■ PURPOSE

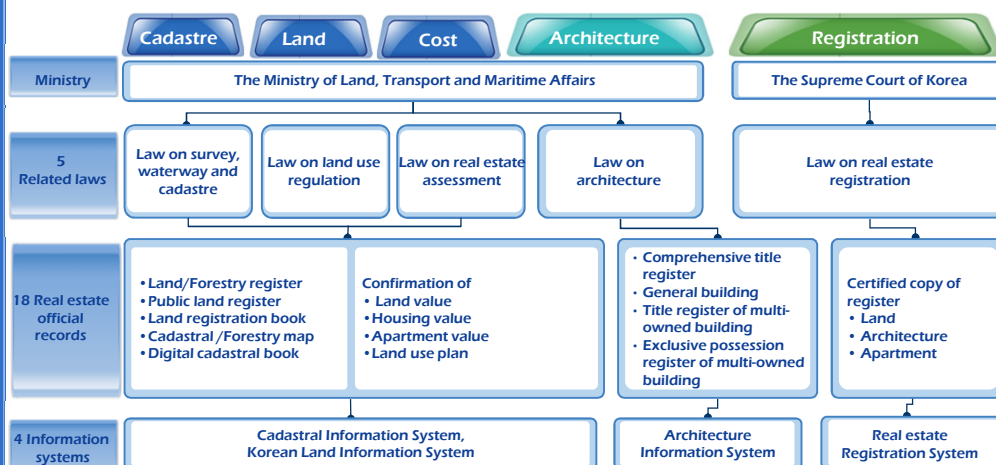
- To correct cadastral data errors
- To establish a real estate integration system

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## □. Current status(1)

### ■ REAL ESTATE INFORMATION

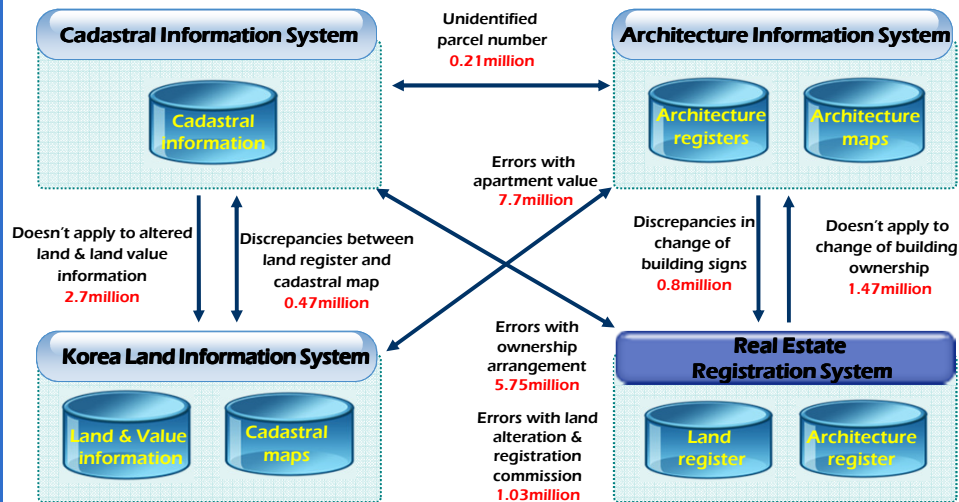


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## □. Current status(2)

### ■ TYPES OF ERRORS



3

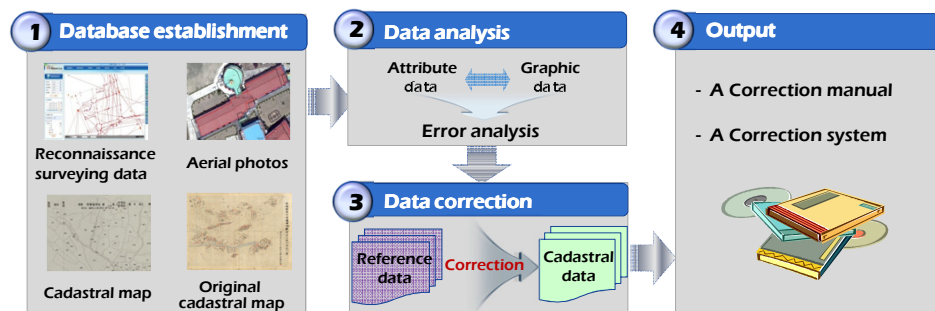
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## □. The pilot project on cadastral data correction

### ■ PURPOSE

- Improvement in the quality of cadastral maps
- Establishment of a system for a consistent data correction process

### ■ PROCEDURE

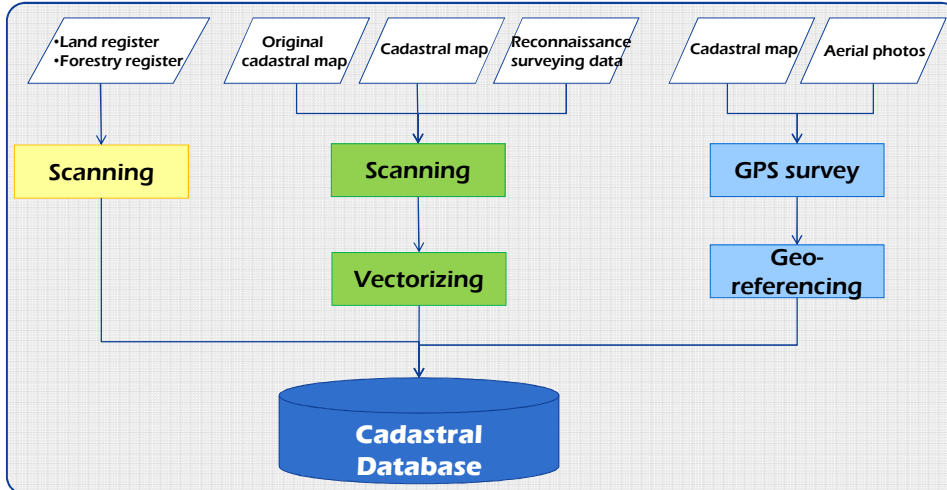


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## □. The pilot project on cadastral data correction

### 1. DATABASE ESTABLISHMENT



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## □. The pilot project on cadastral data correction

### 2. ANALYSIS

#### Causes of errors

- **Map redrawing (Manually)**
- **Map computerization (Different algorithms)**
- **Land alteration (Errors in writing)**
- **Surveying results (Different control points)**

#### Types of errors( 16)

Overlap	Gap
Divided parcel	Double line
Polygon omission	Attribute data omission
Area allowance	Linear distortion
Wrong arrangement	Empty parcel
Double parcel number	Double polygon
Boundary overlap	Boundary omission
Registration omission	Etcetera

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## □. The pilot project on cadastral data correction

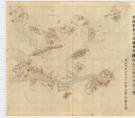
### 3. CORRECTION

#### Reference data

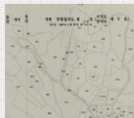
Control point account book



Original cadastral map



Surveying result



Reconnaissance surveying data



Aerial ortho photos



Actual surveying



#### Correction methods

1

#### 1. Historical survey

- **Control point account book**  
(Checking the control points of each district)
- **Original cadastral map**  
(Checking the old land patterns)
- **Surveying result**  
(Checking the current land patterns)

2

#### 2. Comparing boundaries between on the ground and map

- **Reconnaissance surveying data**
- **Aerial ortho photos**
- **Actual surveying**

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## □. The pilot project on cadastral data correction

### 3. CORRECTION – Reference data for each type of error

#### Types of errors(16)

Overlap	Gap
Divided parcel	Double line
Polygon omission	Attribute data omission
Area allowance	Linear distortion
Wrong arrangement	Empty parcel
Double parcel number	Double polygon
Boundary overlap	Boundary omission
Registration omission	Etcetera

#### Reference data

Control point account book



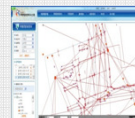
Original cadastral map



Surveying result



Reconnaissance surveying data



Aerial ortho photos



Actual surveying

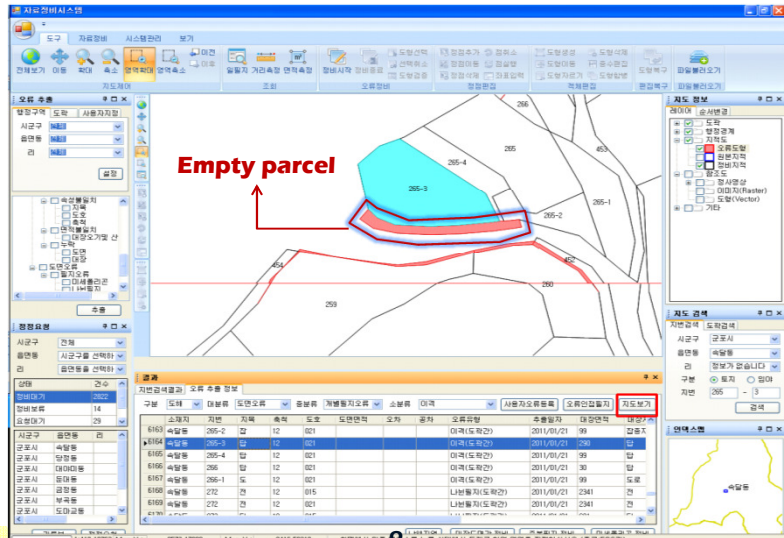


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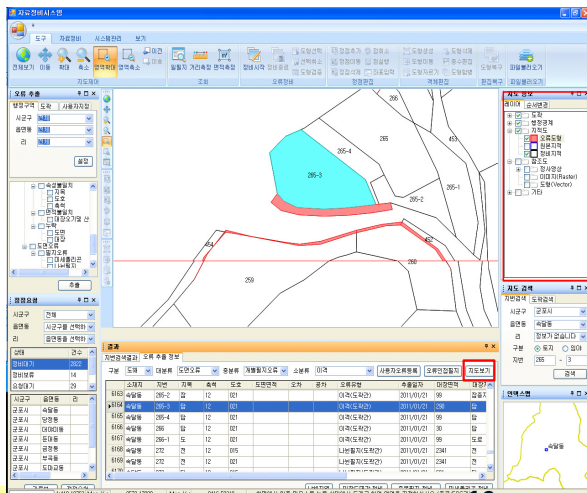
□. The pilot project on cadastral data correction

**CADASTRAL DATA CORRECTION SYSTEM (1)**



□. The pilot project on cadastral data correction

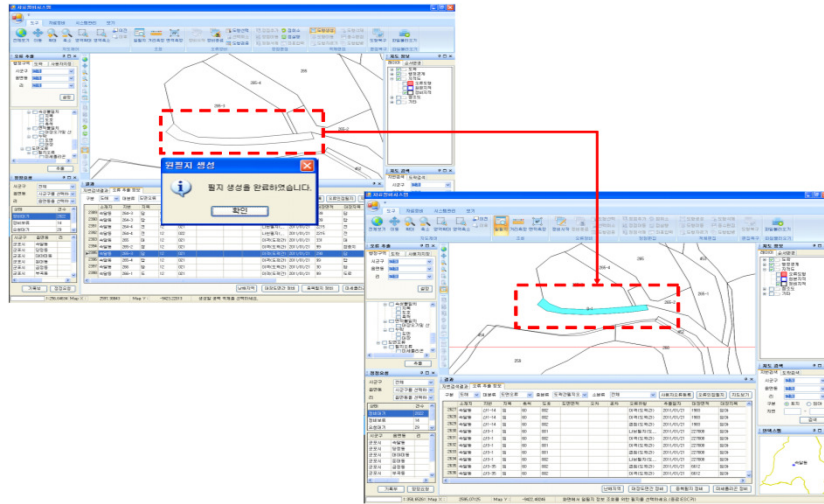
**CADASTRAL DATA CORRECTION SYSTEM (2)**





## □. The pilot project on cadastral data correction

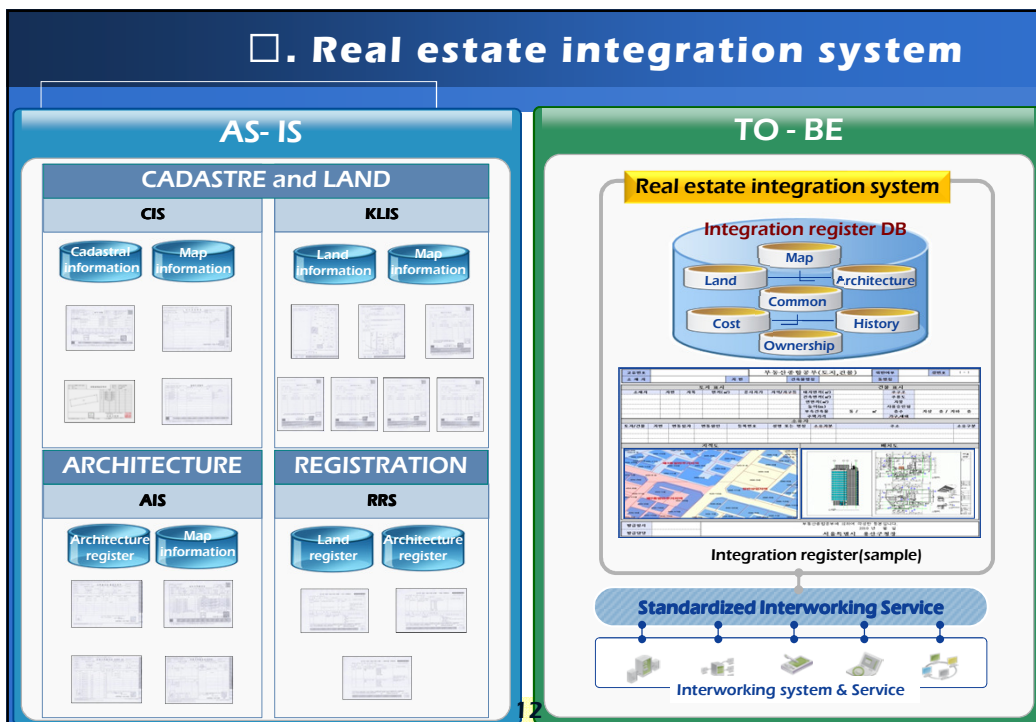
### CADASTRAL DATA CORRECTION SYSTEM (3)

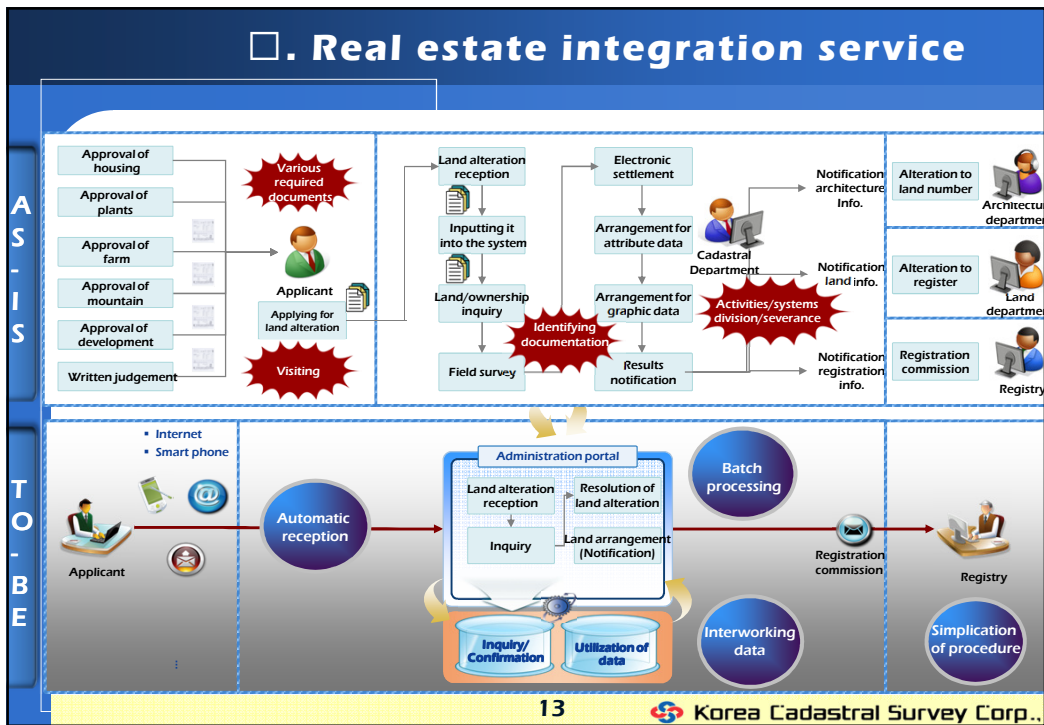


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## □. Real estate integration system







**Thank you  
for your attention!**

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## The Real Estate Information Unification Project


### **OUTLINE**

- Project Name: The Real Estate Information Unification Project
- Authority: The Ministry of Land, Transport and Maritime Affairs
- Period: Feb. 2010 – Dec. 2014

### **GOAL & TASKS**

**Enhancing confidence in the real estate administration &  
protecting the public's property rights**



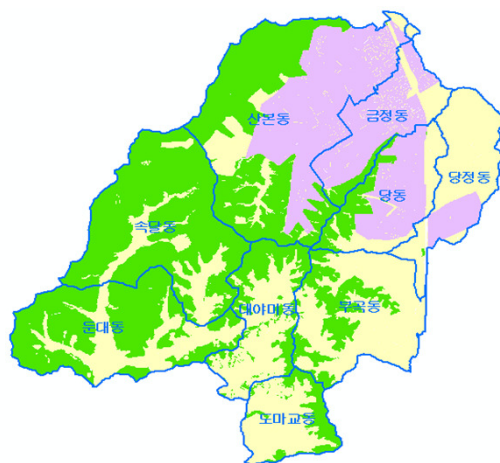
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# The Real Estate Information Unification Project

## SCOPE

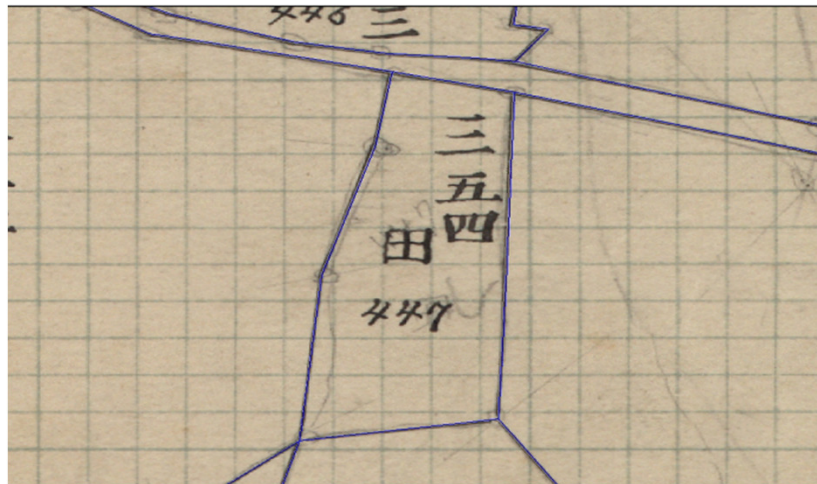
	2010	2011	2012	2013	2014
Data Correction Project	Pilot Project	Data Correction Project Integrated DB Establishment of the Real Estate Integration Information			
Integrated System Establishment Project		Pilot Project	Establishment of the Real Estate Integration System		
Maintenance and Research Project			Service of the Real Estate Integration Information		

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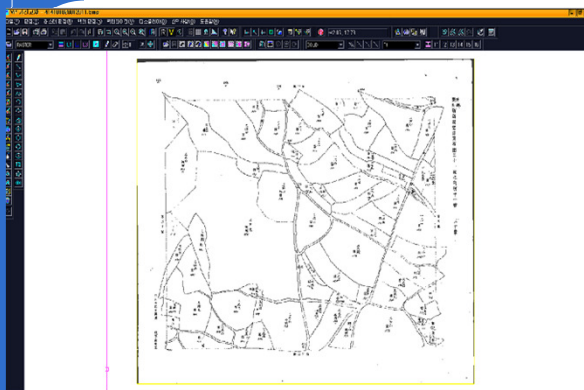
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## Vectorizing

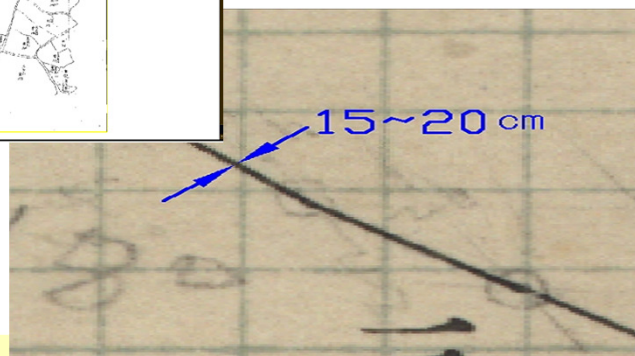


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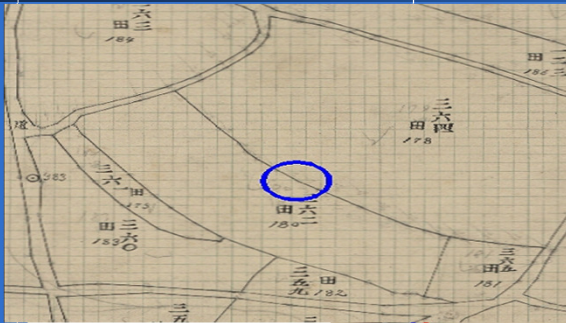
## Computerization



***VP Girigotcha***



## Computerization



**Cad**  
**Girigotcha**  
**Rubber Sheet**

라바시트  
마법사  
VP기리고차  
보정전  
간격:6.6cm  
간격:15.3cm

## Land/Forestry Register

土地調査簿		林業登記簿	
土地	林業	土地	林業
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
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94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

## DB establishment

	A	G	H	J	K
1	PNU	지번	지목	면적 (평)	면적 (m <sup>2</sup> )
2	4141010100100010000	1	지	627	2072.727
3	4141010100100020000	2	지	1108	3662.81
4	4141010100100030000	3	지	104	343.8016
5	4141010100100040000	4	지	217	717.3553
6	4141010100100050000	5	지	1083	3580.165
7	4141010100100060000	6	지	866	2862.81
8	4141010100100070000	7	지	1545	5107.438
9	4141010100100080000	8	지	1092	3609.917
10	4141010100100090000	9	지	324	1071.074
11	4141010100100100000	10	지	1698	5613.223
12	4141010100100110000	11	지	1030	3404.959
13	4141010100100120000	12	지	771	2548.76
14	4141010100100130000	13	지	865	2859.504
15	4141010100100140000	14	지	1665	5504.132
16	4141010100100150000	15	지	1657	5477.686
17	4141010100100160000	16	지	1731	5722.314
18	4141010100100170000	17	지	168	555.3719
19	4141010100100180000	18	지	621	2052.892
20	4141010100100190000	19	지	188	621.4876
21	4141010100100200000	20	지	135	446.291
22	4141010100100210000	21	지	54	178.5124
23	4141010100100220000	22	지	35	115.7025
24	4141010100100230000	23	지	352	1163.636
25	4141010100100240000	24	지	605	2000
26	4141010100100250000	25	지	1090	3603.306
27	4141010100100260000	26	지	1798	5943.901
28	4141010100100270000	27	지	802	2651.24
29	4141010100100280000	28	지	247	816.5289
30	4141010100100290000	29	지	307	1014.876
31	4141010100100300000	30	지	39	128.9256
32	4141010100100310000	31	지	142	469.4215

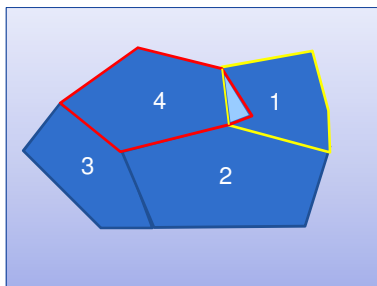
**Key-in**

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## Type of error

### Overlap

Neighboring two polygons are overlapped



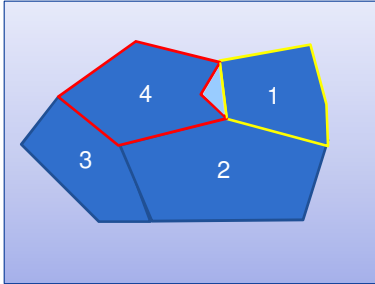
1	farm	20	Kim
2	paddy	40	Shin
3	ground	25	Jeong
4	farm	30	Kim
...	...	...	...

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## Type of error

### Gap

There is a gap between neighboring two parcels

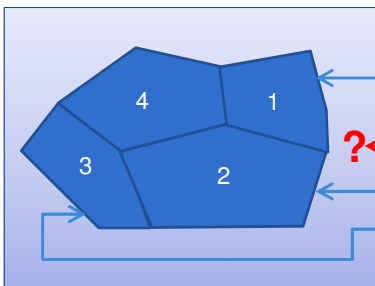


1	farm	20	Kim
2	paddy	40	Shin
3	ground	25	Jeong
4	farm	30	Kim
...	...	...	...

## Type of error

### Polygon omission

An attribute data for a parcel on the land register but, no parcel on the cadastral map



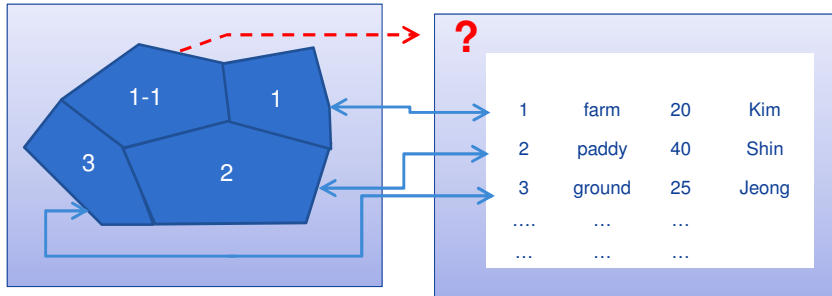
1	farm	20	Kim
1-1	farm	10	Kim
2	paddy	40	Shin
3	ground	25	Jeong
...	...	...	...



## Type of error

### Attribute data omission

A parcel on the cadastral map but no attribute data on the land register

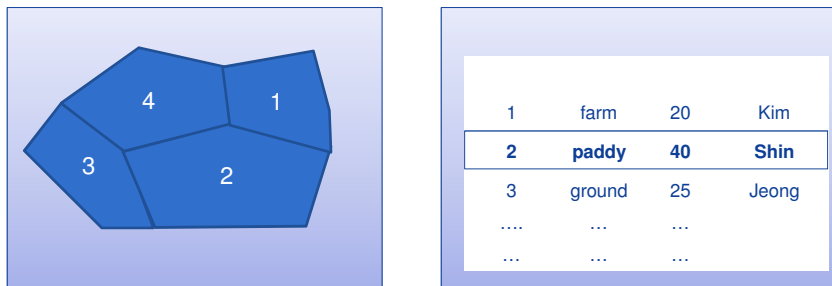


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## Type of error

### Area allowance

An area of a parcel over an area allowance



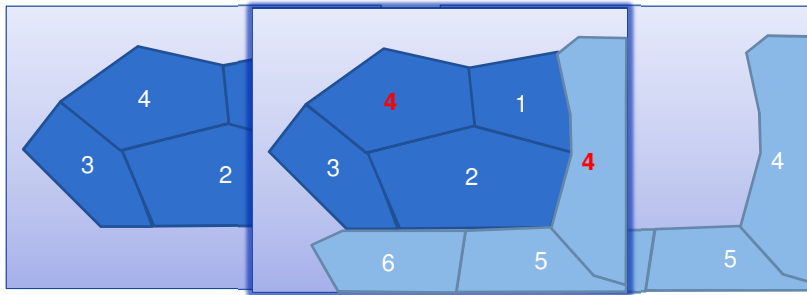
Area allowance : 5.13m<sup>2</sup>  
Actual Area : 34m<sup>2</sup>

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## Type of error

### Double parcel number

More than two same parcel numbers in the one administrative strict

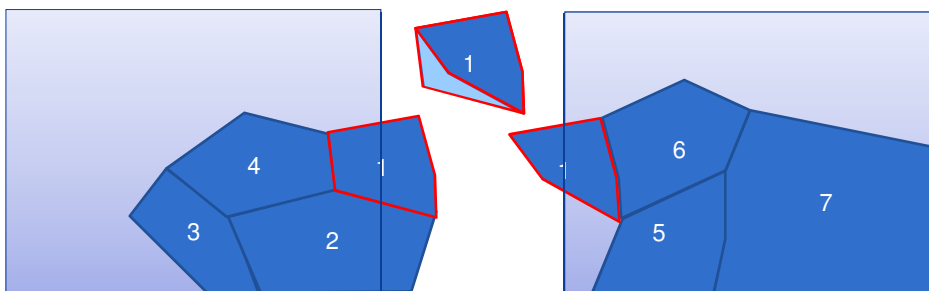


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## Type of error

### Double polygon

The same polygons are registered differently

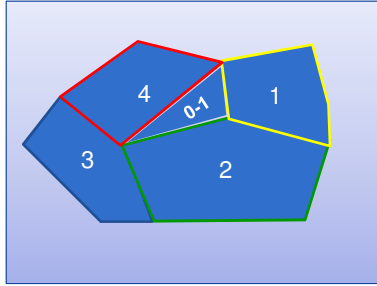


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## Type of error

### Registration omission

A parcel without a parcel number



1	farm	20	Kim
2	paddy	40	Shin
3	ground	25	Jeong
4	paddy	30	Lee
...	...	...	...

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## Correction Record

자료정비 기록부		대장 정리														
		경리	비고	보류												
도지소재	경기도 군포시 당정동 401-10번지															
대분류	<input checked="" type="checkbox"/> 도형오류	<input type="checkbox"/> 대강오류	<input type="checkbox"/> 기타( )													
중분류	<input type="checkbox"/> 계발필지오류	<input checked="" type="checkbox"/> 도곽간점합오류	<input type="checkbox"/> 축적간점합오류	<input type="checkbox"/> 기타( )												
소분류	<input checked="" type="checkbox"/> 나선필지	<input checked="" type="checkbox"/> 다중경계	<input type="checkbox"/> 경침	<input type="checkbox"/> 이적												
	<input type="checkbox"/> 선형외측	<input type="checkbox"/> 토거이동경리오류	<input type="checkbox"/> 음지	<input type="checkbox"/> 기타( )												
오류내용	도곽에 의한 다중경계, 도곽에 의한 나선필지, 현용공차의 필지.															
발생원인	지적도면이 도곽에 의하여 작성되어 도면정합시 다중경계 발생															
정비 전		정비 후														
참고 자료																
		<table border="1"> <tr> <td>비교구용</td> <td>면적(㎡)</td> </tr> <tr> <td>현상면적</td> <td></td> </tr> <tr> <td>계통면적</td> <td></td> </tr> <tr> <td>수익 면적</td> <td></td> </tr> <tr> <td>경(0A-10)</td> <td>0</td> </tr> <tr> <td>공용면적</td> <td></td> </tr> </table>			비교구용	면적(㎡)	현상면적		계통면적		수익 면적		경(0A-10)	0	공용면적	
비교구용	면적(㎡)															
현상면적																
계통면적																
수익 면적																
경(0A-10)	0															
공용면적																
조사결과	<input type="checkbox"/> 정기가능	<input type="checkbox"/> 정기불가	<input type="checkbox"/> 현상생략	<input type="checkbox"/> 현상확인												
실영																

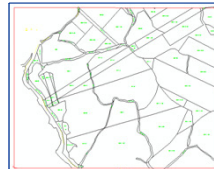
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## Computerization

### Scanning



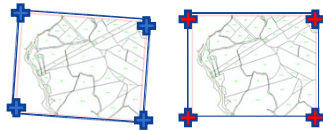
### Digitizing



사용도구 : VP 기리고차

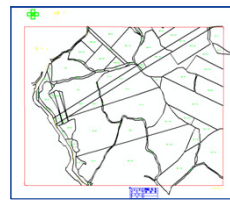


### Correction



Rubber sheeting

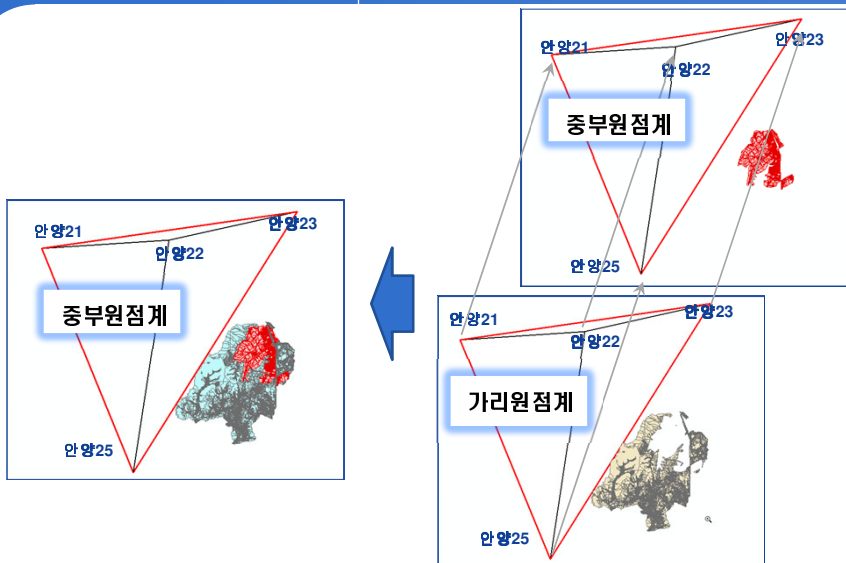
### Computerized Cadastral Map



DXF format



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