

# **Use of Network RTK for Cadastral survey on Islands**

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# I . Introduction

## Background

- Increasing value of islands
- Unregistered on cadastral record
- Difficulties of survey on Islands  
⇒ Geographical and Technical Problems



## Purpose

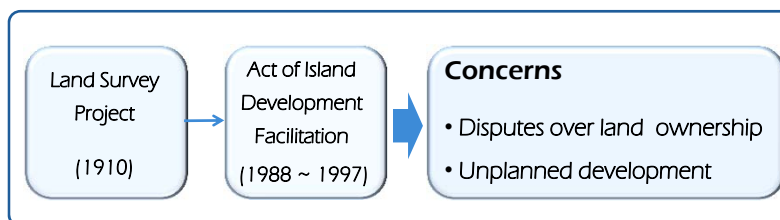
- Analyzing results between network RTK and TS survey
- Presenting utilization of network RTK

# II . Current Status(1)

## Current status of Islands in south Korea

CONTENTS	TOTAL	INHABITED ISLANDS	UNINHABITED ISLANDS
NUMBER	3,201	482(15.2%)	2,719(84.8%)
AREA(km <sup>2</sup> )	3,765.81	3,681.25(97.8%)	84.56(2.2%)

## Issues on Islands Development



## II . Current Status(2)

### Cadastral survey methods in south Korea



#### Total Station

- ☹ General method
- ☹ Uneconomical for survey on islands
- ☹ Difficulties of control point surveying



#### Aerial Photogrammetry

- ☹ Suitable for wide & inaccessible areas
- ☹ Excess of Tolerance (28cm > 10cm)
- ☹ Inefficient for parcel based boundary survey



#### Network RTK

- ☹ Free from time, weather, mutual communication
- ☹ cm-level accuracy in real time
- ☹ No need of control points

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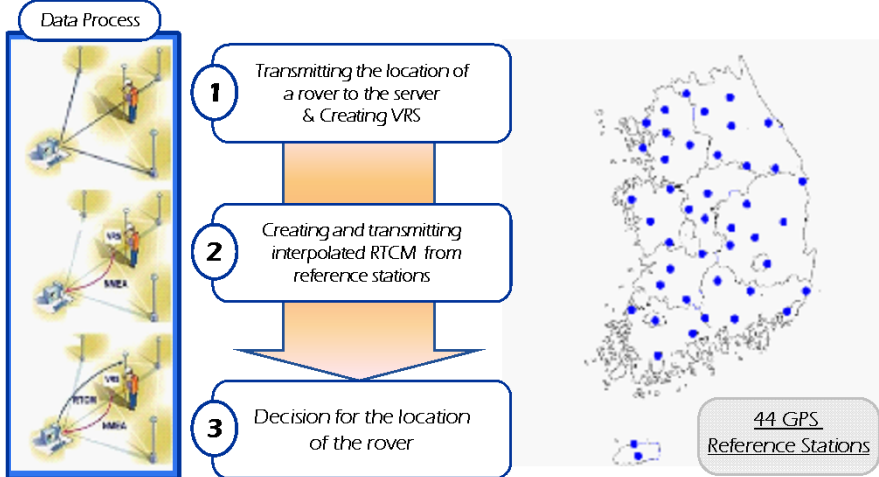
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### III. Network RTK Survey

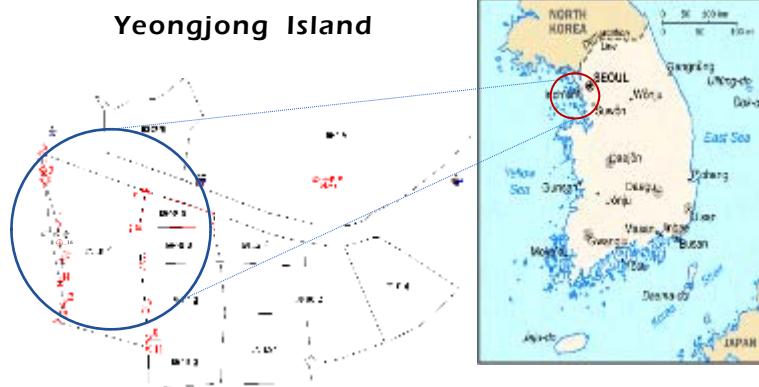
#### Principle of Network RTK

#### GPS Reference Stations



### IV. Performance Analysis

#### Experimental area



## IV. Performance Analysis

### Results of Experiments

#### Error Differences



Network RTK

Total Station

⇒ Maximum tolerance : 9.4cm

#### Influence of time and weather



29th, June

30th, June

⇒ Maximum tolerance : 3.6cm

**Network RTK = Efficient for survey on islands**

## V. Network RTK use in Korea

- A cadastral registration project on unregistered islands
- Nationwide cemetery management system project
- Control point survey



## VI. Conclusion

### Network RTK is

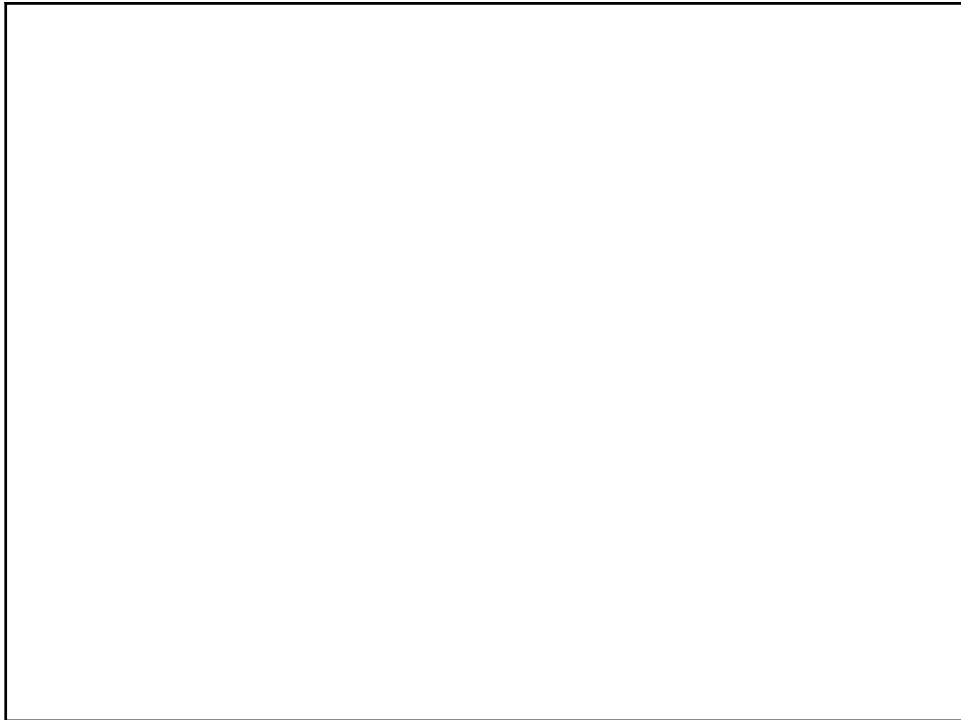
- ✓ Proper for survey on islands( $\leftrightarrow$  TS)  
⇒ Real time, more accurately, more economically
- ✓ Useful for various projects

### Challenge

- ✓ Connection between land and maritime GPS reference stations(44+26) ⇒ Extensive Service

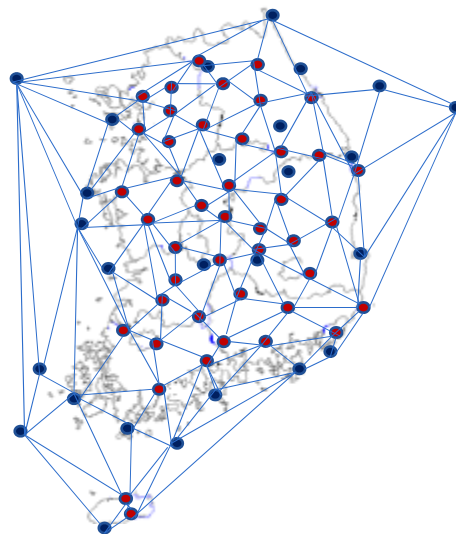
**Thank you  
for your attention!**

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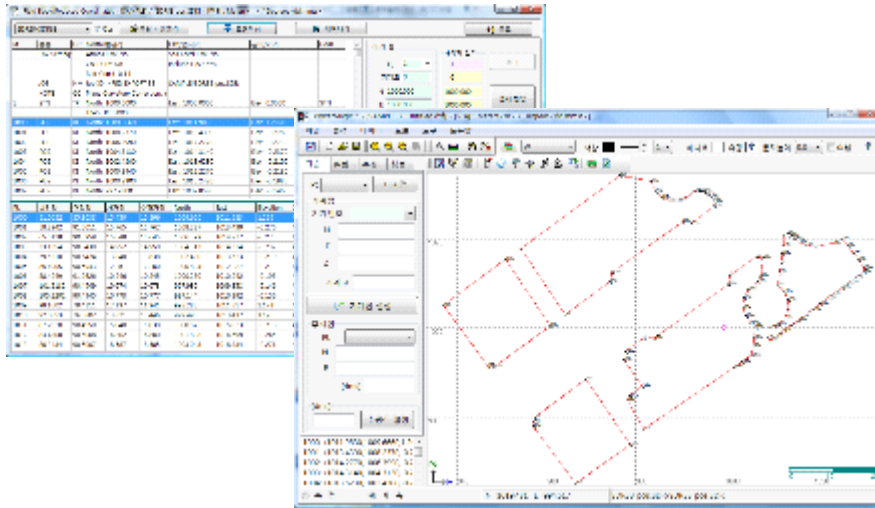


## Integrated Reference Stations

70 Integrated  
Reference Stations

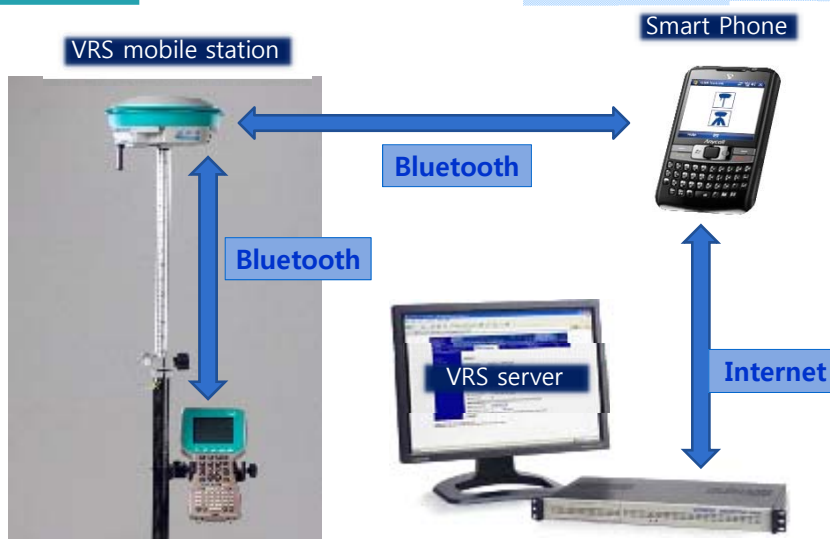


# PowerMagic



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# Network RTK Equipment



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