

Development of server to process cadastral survey data

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I Backgrounds

1. IT infrastructure

-
- Powerful telecommunication**
- Multi Telecommunication service
 - Wide and sufficient volume carrying Information
 - Powerful speed
- Databank of information**
- Using internet community
 - Inputting data into web
- Ubiquitous network**
- What you want get it anytime, anywhere
 - Catching information you want on the real-time
- Easily searching Information**
- Providing a decision information
 - Providing rapid choice circumstance

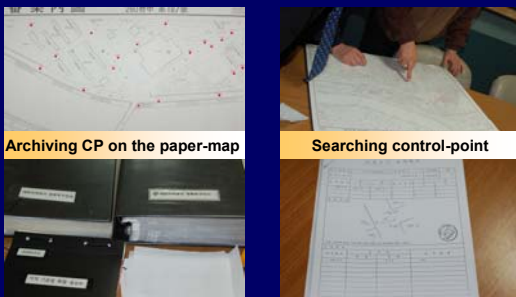
I Backgrounds

2. Cadastral survey fields in Korea

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- Keeping only personnel**
- Not opening for everyone about each own data
 - Not unifying personnel data
- Archiving just papers for survey-data**
- Archiving on paper for survey-data
 - No standard format about cadastral data
- Spending much search-time**
- Shortage using IT infrastructures
 - No searching system in survey-fields
- Managing data on off-line**
- No real-time updating systems
 - No sharing systems about survey-data

I Backgrounds

3. Examples



II Implementation

1. Objects

- Study multi processing for concurrently connecting clients that be required survey data
- Design client/server architecture that can provide data on real-time
- Design advanced multithreads process to make efficient use of CPU
- Design & analysis of IT infrastructure required for high speed performance
- Promote generating survey data through advanced network communication technology
- Establish service providing systems for all cadastral survey worker include the public

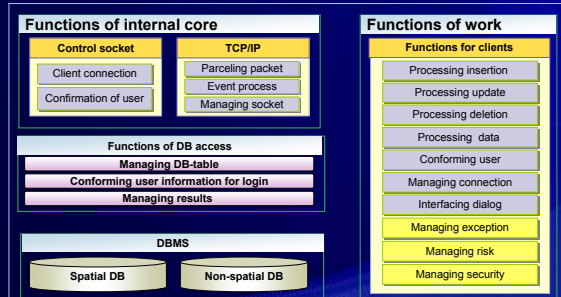
2. Objects (Cont..)

- Design pool objects of thread and DB-connection for reducing work-time
- Design network protocol to contain the results of query that can be used clients side
- Design useful log manager to recover through all accidents and emergency situations
- Study verifying & checking process for SQL-statements received from network clients
- Synchronize data during clients' response procedure that can be unique for all the clients
- Design search algorithms to provide efficient data and reduce time

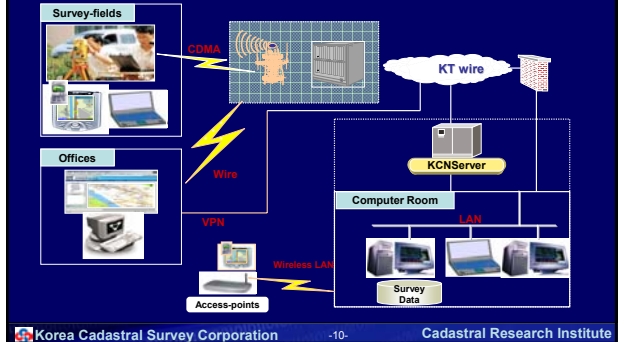
3. Coworker's benefits

- Decreasing searching response time
→ Save 3 ~ 5 minutes per control-point
- No duplicated survey data management activities
- Reducing **surveying time**
- Providing **survey efficient information**
- Verifying survey data (No need of mandatory side job)
- Organizing **data process units automatically**
- Unifying formation of survey data
 - only one data form
 - singleized channel survey data acceptance
 - singleized channel through whole network
 - singleized data control
 - singleized reporting
- Easy reporting & Easy statistics

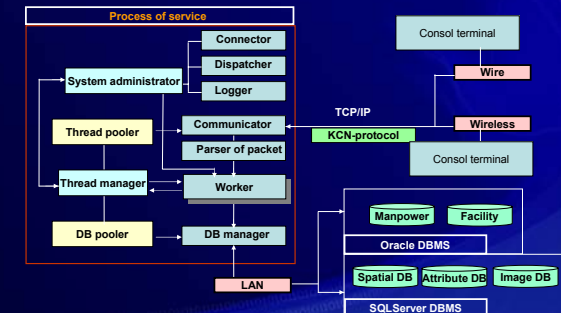
4. Sever functions



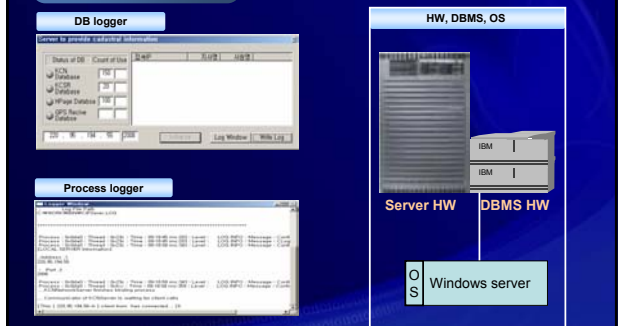
5. Architecture of system



6. Internal core diagram



7. Interfaces of server



1. Survey fields

#1. Connecting to server on wireless



#2. Working on real-time



#3. Wireless modem

2. Queries on real-time

#1. Control-points on the map



#2. Attributes of control-point



#3. Results of query



1. Conclusions

- Processes of service server must be time-critical & other data manager processes shall be automated
- Independent operation but only clients' requirement dispatches each thread for supporting concurrency
- Optimize performance of CPU by processing of each local clients' requirement for load balancing
- Service activities shall be multi processed deal with providing on anytime, in anywhere
- Consider convenient reporting circumstance
- All the major components must be exception-process to prepare system faults and risks



Q&A

For More Information & Request

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