Spatial Data Exchange within the HKSAR Government

- from a perspective of a Data Agent

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Introduction

- Lands Department – primary digital map data supply agency in Hong Kong
- Data Alignment Measures Project
  - Data definition
  - Data format compatibility
  - Data quality
  - Data cost & turn around time

Spatial Data Exchange Problems

- Varying data definitions, accuracy, standards, formats and structures among various departments to meet their specific business needs
- Considerable costs to collect and maintain spatial data
- Staff training

Data Alignment Measures (DAM)

- Led by Housing, Planning and Lands Bureau (HPLB)
- Objective – improve efficiency and effectiveness in exchange of spatial data among government departments

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- Common Spatial Unit (CSU)
  - Standard unit for exchange of spatial data, comprising of spatial data and its associated attributes
- Five CSUs
  - Building
  - Lot
  - Road Centreline
  - *Slope*
  - *Town Planning Unit*

→ LandsD as Data Agent

Data Dissemination System (DDS)

- Provides a effective and efficient platform for the implementation of the DAM initiative
  - Data submission
  - Data validation, manipulation and integration of spatial data
  - Exceptional handling mechanism for 'problematic' data
  - Integrated CSU data disseminated to Data Users at regular intervals
- Launched in Feb 2007

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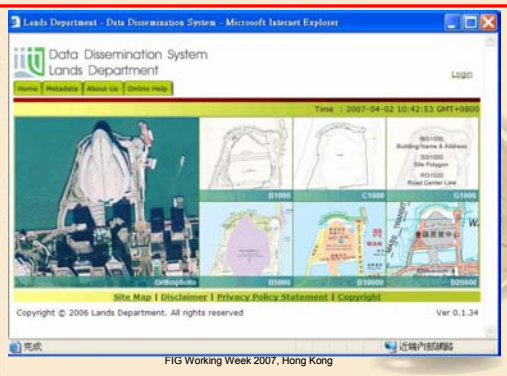

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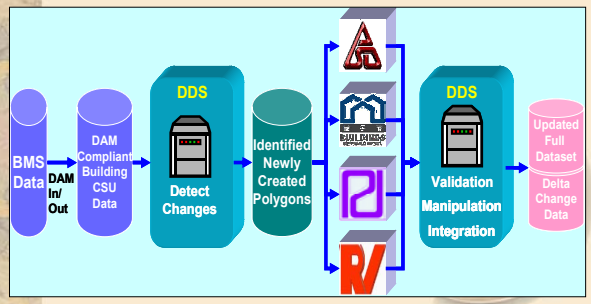

Workflow of preparing up-to-date Building CSU data

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- Facilitates LandsD to enhance mutual data sharing and accessibility of the land related information
- Strengthens the position of LandsD as central gateway in the supply of up-to-date spatial information for business growth and academic research to the GIS user community

Role of Data Agent

- Enforce CSU specifications
- Ensure data from data owners conforming to CSU specification requirements
- Prepare and maintain CSU metadata
- Issue and maintain CSU IDs
- Report effectiveness of CSU data exchange to HPLB
- Respond to enquiries & resolve CSU related issues brought up by Data Owners/Users

Metadata Catalogue System (MCS)

- Data about data (FGDC definition)
- Support discovery, evaluation and application of geographic data
- Metadata services
  - Query, searching and browsing metadata documentation
  - Validation of submitted metadata MCS allows government departments and public to browse the metadata of spatial data kept in the government

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- Support maintenance of CSU metadata in the DDS
- Any change of spatial properties/ contents of CSU data will trigger the automatic update of respective metadata documentation

Experiences

- Data quality
- Participation among Data Owners, Data Users and Data Agent
- XML schema
- Data custodianship
- Copyright issues

Data Quality

- Assurance of data quality
- Irregularities of data provided by Data Owners
- Some CSU data being left incomplete initially

Participation from Stakeholders

- Data Agent, Data Owners & Data Users
- Discussion & communication
- Address to concerns & get consensus

XML Schema

- Common XML schema for each CSU
- Effective means of data exchange
- Spatial data interoperability

Data Custodianship

- Defines and provides for accountability for maintenance of CSUs integrity
- Ensures integrity, accuracy, validity, quality, timeliness and consistency of CSU data

Data Custodianship

- Well coordinated custodianship helps
  - Facilitating collection of fundamental datasets and spatial information
  - Eliminating unnecessary duplication
  - Managing information
  - Providing a sound spatial information infrastructure

Copyright Issues

- Ownership of integrated CSU
  - Data Agent
  - Data Owners
  - Hong Kong Government
- License agreement – no coherent practice (loosen/stringent approach)
- Block consent

Recommendations

- One Stop Solution
  - Provide a convenient, user-friendly and easily accessible centralized gateway
  - Further extend CSU service to across all departments
  - Avoid the cost of redundant data collection and repetitive development work on a same initiative
  - Minimize investment cost on GIS infrastructure and GIS personnel

Recommendations

- One Stop Solution
  - Well define the scope and requirements for its implementation
  - Require **policy support**

Recommendations

- Interoperable GIS Solution
  - Standardised format and description of spatial data
  - Directly access the source dataset, read and translate dataset into desired format

Recommendations

- Collaboration and Awareness
  - Stakeholders having a common and shared interest and vision
  - Participative approach
  - Cooperation and coordination throughout the implementation process
  - Awareness of importance of rich and quality metadata documentation

Recommendations

- HKSDI
  - To facilitate spatial data sharing and dissemination
  - To improve availability of spatial data to users
  - DAM and DDS being a bridge to foster the awareness of existing spatial data and to enhance their consistency, broader use and sharing


Question & Answers