Upgrade the Datasets in NSDI for Smarter Services – with the Cases of China

By

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Outlines

• The development of NSDI in China
• Data Upgrade for better services
• Suggestions
Components of NSDI in China

Partnerships (government, industry, public)

Standards and Policies

Services

Metadata

Earth Observation Data

Framework Date

Application
Policies
-- Surveying and Mapping Agencies in China

NASG: National Administration of Surveying, Mapping and GeoInformation
Standards

ISO/TC211

- International standards
- Enterprise standards
- National standards
- Local standards

Standardization Administration of China (SAC)

National Administration of SMG (NASG)

Geospatial information Standardization Tech Committee (SAC/TC230)

Standardization Institute of S&M

National Geomatics Center
Framework Data

Core of NSDI

Spatial Analysis

Base for Other Data

Finished Maps
Framework Data

-- Multi-scale Topographic Map

National invested and maintained

Provincial invested & maintained

Municipal invested & maintained

1:4 m

1:1 m

1:250k

1:50k

1:10k

1:5000

1:2000

1:1000

1:500

77 map sheets

816 map sheets

24218 map sheets

Cover 50% territory

Cover built-up area of most cities
Framework Data
--Vector Datasets
Framework Data
--DOM Datasets

30 Meter Satellite image

15 Meter Satellite image

2.5 Meter Satellite image

0.5 Meter Satellite image
Framework Data
--DOM Datasets
Framework Data
--Geodetic Datasets

Astro-Geodetic Network
Leveling Network

GPS Network
Basic Gravity Network
Earth Observation Data
Service
-- Data Distribution

- Mata data searching
- Hard Copying
Service
-- Web-based Platform (Portal)

- “One-stop” portal
- on-line Services

Platform for Common Geo-Spatial Services

1:1M, 1:250K, 1:50K
1:10K, 1:5K
1:2K, 1:1000, 1:500
Portals are the ‘Face’ of NSDI
-- provide the critical linkage between the data of SDI and its use
Benefits of the Portal

• Provides Organized Access to Geospatial Resources
  – Gateway to a spatial data infrastructure

• Value to Organization
  – Collaboration - Publish, share, and disseminate data and GIS Web services across the SDIs
  – Searching – Discover, connect to, and utilize GIS data and Web services
  – Awareness – Organize geospatial resources in one place for the Agencies
  – Categorization – Catalog GIS data and web services within the context needed

• Supports / Facilitates:
  – Faster discovery
  – Direct access and use
  – Improvement of data quality and coverage
  – Collaboration for new data collection
Outlines

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- Data Upgrade for better services
- Suggestions
Upgrade for Smarter Services
- Updating

Rapid and constant change
Upgrade for Smarter Services

- Updating

Version 1.0   2006
Data production

Version 2.0   2011
Data Updating

Version 3.0
Dynamic Updating
-- V   2012
-- V   2013
-- V   2014
-- V   2015
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The 1:50k updating History
Upgrade for Smarter Services
- Updating

Before updating

Before updating
Upgrade for Smarter Services
- Updating

Before updating

Before updating
Upgrade for Smarter Services
- Updating

Before updating

Before updating
Upgrade for Smarter Services
-Harmonization & Re-modelling

- Distributed Datasets with same standards
- Link features in different dataset
Before upgrading

Belongs to G108 and G310

Select by 'G108'

Non-consistent attributes
After upgrading

With unique Entity ID

Uniform catalogue code

Select by 'G108'
Before upgrading

Use different code when through the city
After upgrading
Feature linkage between different scale datasets via Entity ID
“ENTIID=G108000000”

Entity ID
Multi-belongingness
Catalogue Code
Before upgrading

No Skeleton

Missing attributes
After upgrading

Skeletons + line features = water network
Feature linkage between different scale datasets via Entity ID

"ENTIID=DD010003"
Settlements:
• Identification Point – As Key Feature to link Social-economic information
• Covered Area - As background for displaying
Upgrade for Smarter Services
-Cartography for on-line Services
Upgrade for Smarter Services
-Cartography for on-line Services

Level of Details
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Success depends on cooperation between individuals and agencies.

Ian Williamson, Meeting of PCGIAP, 2004
European Commission Directive 2007/2/EC: establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) to ensure that the spatial data infrastructures of the Member States are compatible and usable in a Community and transboundary context.

The Directive requires that common Implementing Rules (IR) are adopted in a number of specific areas (Metadata, Data Specifications, Network Services, Data and Service Sharing and Monitoring and Reporting).

**Suggestion -- Regional SDI for AP**

Why not Build a Regional SDI for AP Region!
Thanks