New NSDI and National Mapping Policy of Japan

Geographical Survey Institute, Japan
Yukiko TACHIBANA

NSDI Act and FGD

Utilization of Geospatial Information in Japan

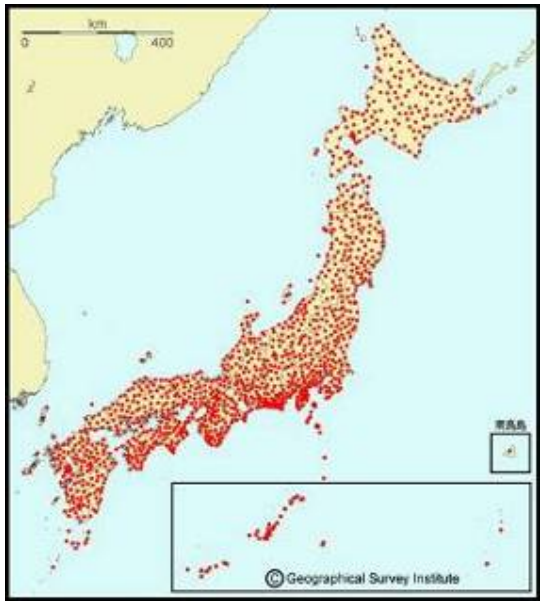
Utilization of GPS

GSI established over **1,200** GPS-based control stations throughout the country.

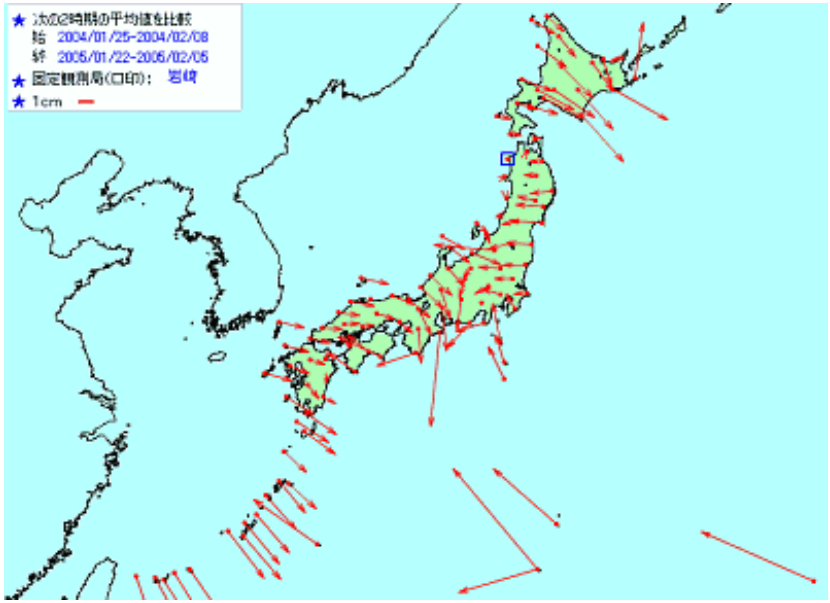
◆Crustal movement is monitored near real time.

◆Observation data can be downloaded through the Internet for free of charge.

GPS stations are already an important infrastructure in Japan



GPS-based control station distribution



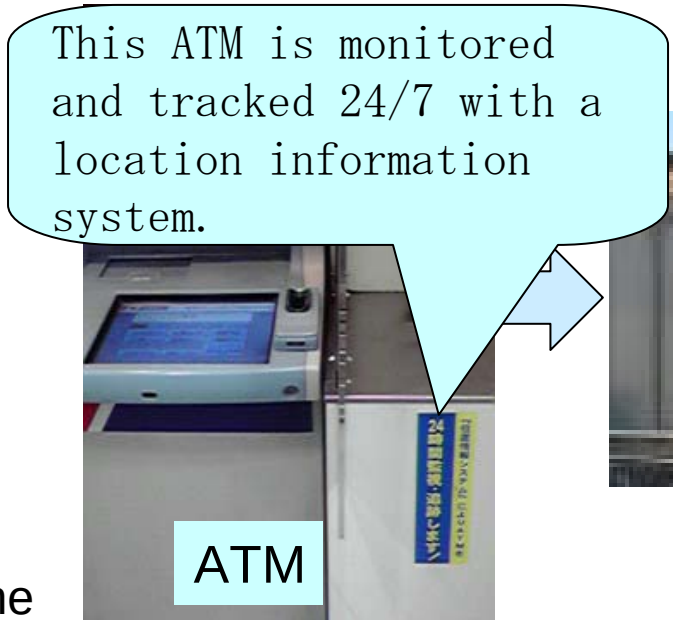
Crustal movement around Japan

Utilization of Geospatial Information in Japan

Vehicle navigation system

Navigation service on GPS cell-phone

Security service with GPS cell-phone



Growing need of detailed and latest map data

Utilization of Geospatial Information in Japan

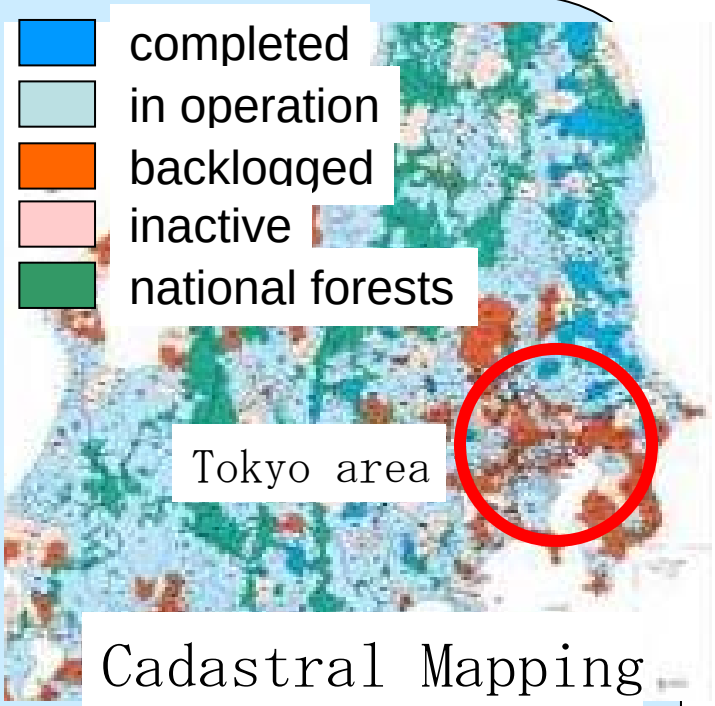
Challenge in Utilization of Geospatial Information

Need for large scale maps is increasing.

Cadastral data have not been fully prepared in Japan.
(48% for whole country, 20% for urban areas)

Private mapping companies provide various large scale map data.

Geospatial data based on different large scale maps do not align with each other.



Cadastral Mapping

Major impediments that prevents further growth of geospatial information applications.

NSDI Act of Japan

Basic Act on the Advancement of Utilizing Geospatial Information (2007)

- The purpose is to urge the national government agencies, local governments, and private sectors to take measures to promote the utilization of geospatial information.
- The act prescribes tasks of national government agencies and local governments.
- The act defines Fundamental Geospatial Data (FGD), and charges the national and local governments to develop and utilize them.

What is FGD?

Features of FGD

- Unique and seamless throughout the country.
- Two accuracy requirements: 1:2,500-scale level for urban areas and 1:25,000-scale level for the rest.
- Distributed free of charge through the Internet (Users may need to go through a procedure prescribed in the Survey Act depending on their usage).

- GSI started preparing FGD with about 2 billion yen (US$ 22 million) per year in 2007, and providing data through the Internet in 2008.
- GSI plans to complete the initial development of FGD by the end of Japanese fiscal year 2011.

What is FGD?

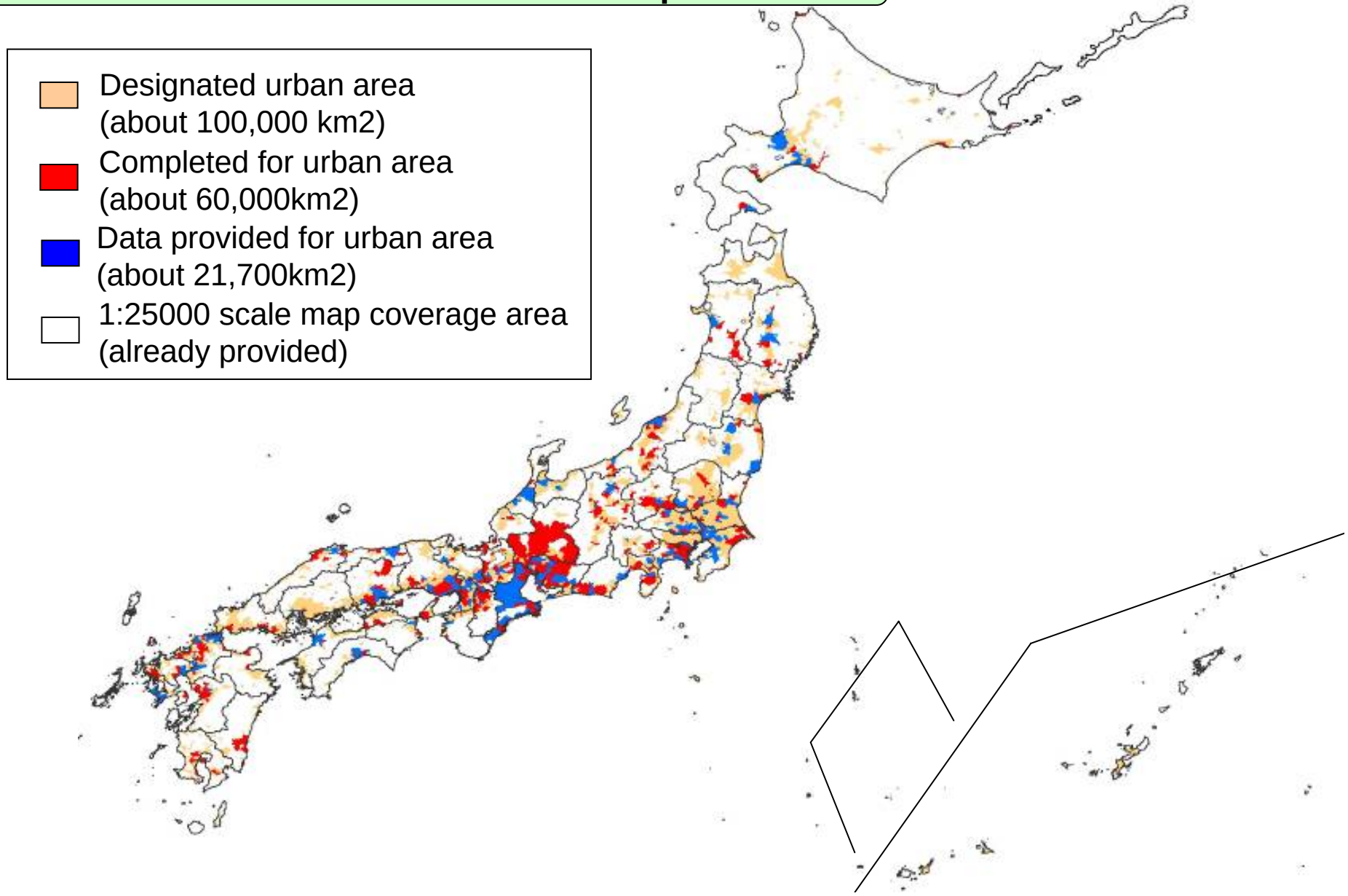
Items of FGD

Information that is included in FGD for positional reference

Geodetic Control Point	Coastline
Boundary of public facilities (Road Management Boundary)	Boundary of public facilities (River Management Boundary)
Administrative Boundary (town level; with a point in each polygon)	Road Edge
Riverside Edge of Levee Crown	Railroad Track Centerline
Elevation (ground surface point where the elevation is known	Shoreline
Building Outline	Community Boundary (with a point in each polygon)
Street Block Boundary (with a point in each polygon)	

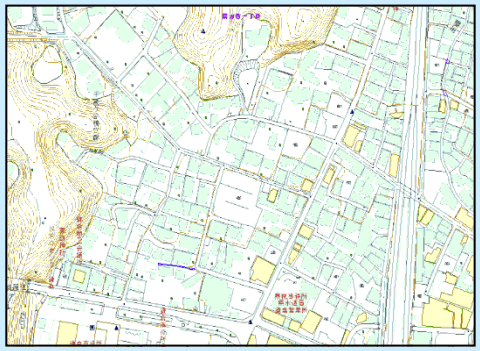
Development and Updating of FGD

Current Status of FGD Preparation

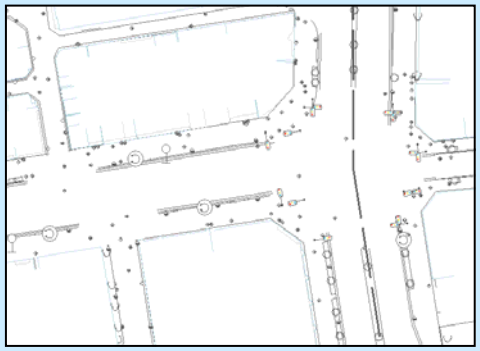


Development and Updating of FGD

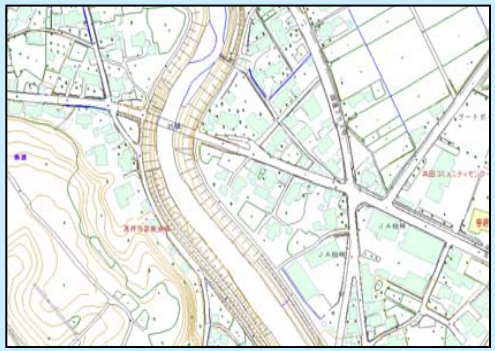
Large-scale maps
(prepared by local and national governments)



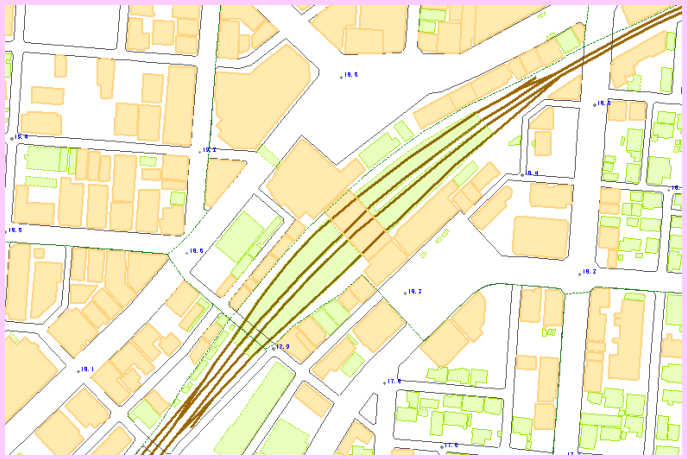
City A



Road Management Office B



City C



FGD

Seamless integration

Accuracy assurance

Development and Updating of FGD

Challenging Issues in Preparation of FGD

◆Property rights and copyrights of maps belong to national and local governments.

Some local governments are not willing to allow GSI to integrate their data for FGD free of charge.

◆Criteria for classifying features are different between national and local governments.

Mismatch accrues between maps when they are integrated.

◆Budget for map updating is reduced in many local governments.

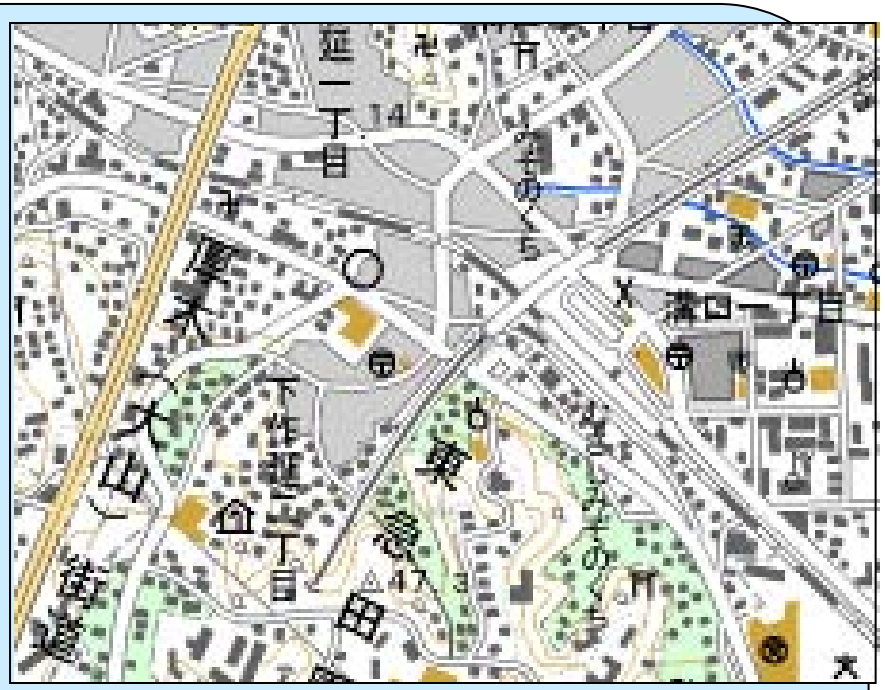
Update cycle of FGD may be slowed down.

New Basic Map Database: Digital Japan Basic Map

Digital Japan Basic Map

Change of National Mapping in Japan

GSI has been maintaining 1:25000 topo maps as national basic map with cartographic modifications since 1910.



GSI is preparing FGD in urban areas with no cartographic modifications.

1:25000 topo map data and FGD are not exactly aligned.

GSI is converting traditional basic maps into "Digital Japan Basic Map" based on FGD.

Digital Japan Basic Map

New National Basic Map of Japan

◆New national map database replacing conventional 1:25000-scale topographic maps.

◆New database consists of three components;
map information, digital ortho imagery and geographic names

FGD

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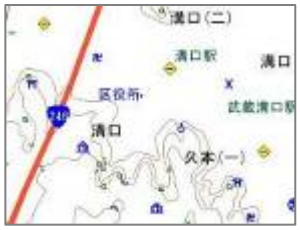

Additional information

Map information

Digital ortho image

Geographic names

Digital Japan Basic Map

Summary

◆GSI makes effort to prepare and update FDG with the cooperation of other national government agencies and local governments.

◆GSI will update “Digital Japan Basic Map”, new national basic map that is based on FGD.