

Planning of policies related to survey

Realization of "Digital Japan" concept

"Digital Japan" is a concept, which is a virtual representation of the national land on computers based on the various positional and geographic information updated and integrated in real time.

The recognition and prediction of any change on "Digital Japan" can help reduction of the risk in decision-making. In addition, "Digital Japan" will provide a wider range of applications, such as environmental assessment, landscape simulation and disaster mitigation as well as sightseeing guide.

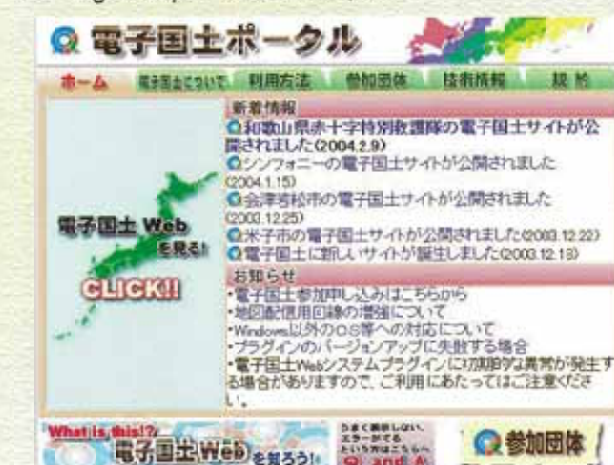
Promotion of utilization of the "Denshi Kokudo" Web system

Basic geographic information of GSI and various geographic information of other bodies are provided on the Internet. "Denshi Kokudo" Web system is a tool to realize "Digital Japan". By using "Denshi Kokudo" Web system, anyone can easily overlay and display various types of geographic information on the topographic map data provided by GSI anytime, anywhere.



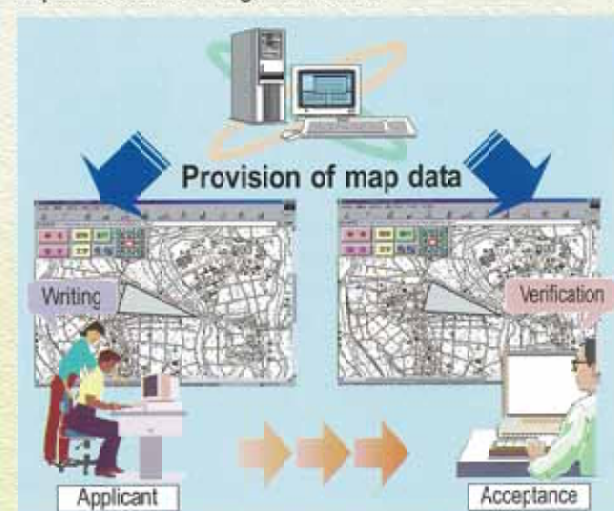
"Digital Japan" Portal Site opened to the public

On the site, the basic geographic information of GSI and various geographic information of the registered bodies can be accessed. The portal site is operated by the "Digital Japan" Secretariat, GSI.



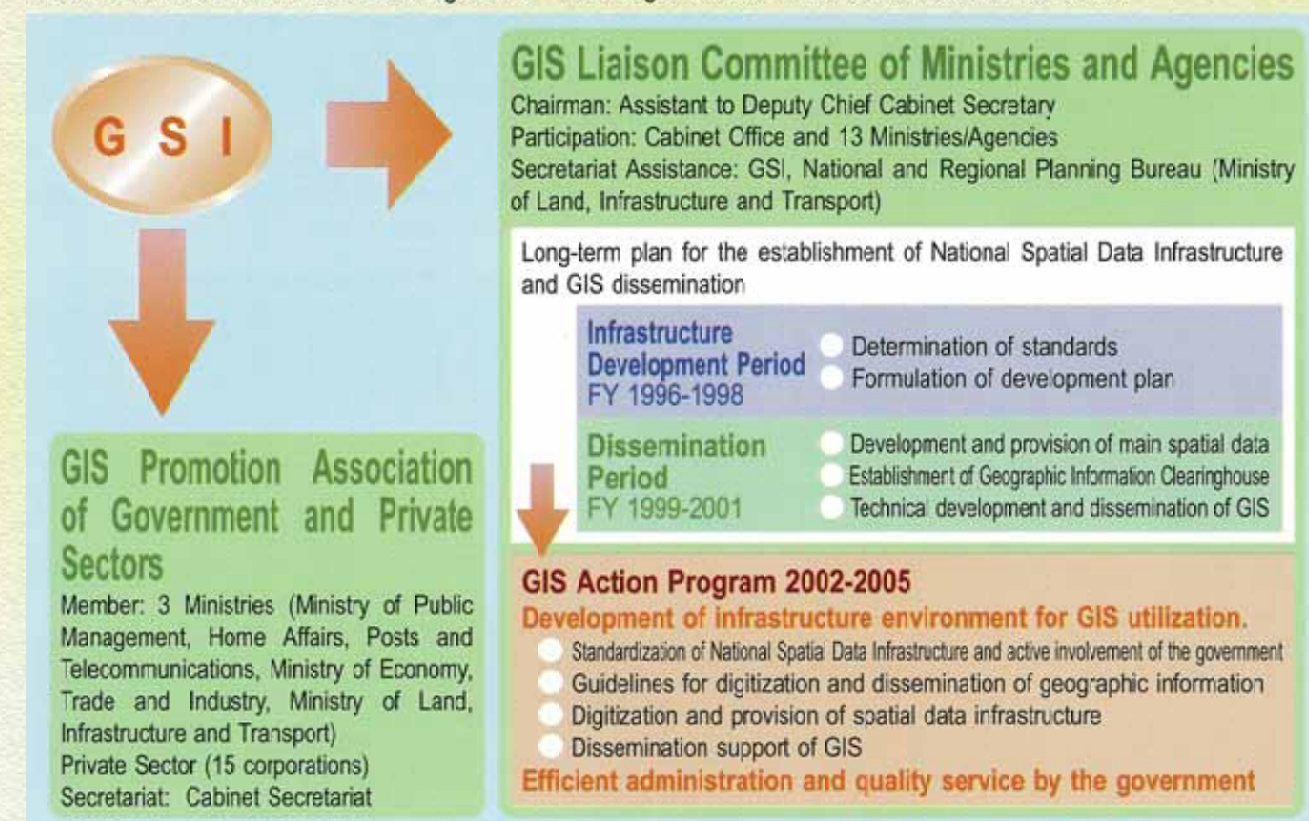
Support for the electronic application

Applicants can easily attach their positional data on 1:25,000 scale topographic maps or location maps to the electronic application forms. It contributes to the implementation of e-government.



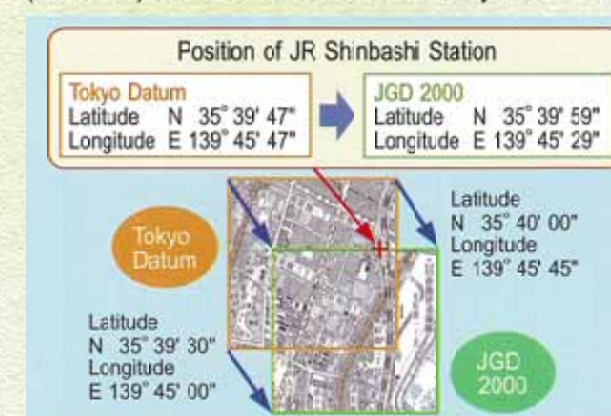
Geographic Information System (GIS) dissemination and promotion initiatives

GSI is promoting dissemination of Geographic Information System (GIS) as a member of the Secretariat of GIS Liaison Committee of Ministries and Agencies. It has organized seminars to this effect in 106 cities.



Amendment of the Survey Act to correspond to the Japanese Geodetic Datum 2000

GSI gives guidance and advice to public related to the change of geographic coordinates in consequence of the adoption of the Japanese Geodetic Datum 2000 (JGD2000) based on the amended Survey Act.



Real-time data provision from GPS-based control stations

Real-time observation data is provided from the GPS-based control stations spread all over Japan. It contributes to creation of new industries that are originated from positional information infrastructure.



GIS present situation in Japan

September 26, 2006

INTERPREVENT 2006 in Niigata University

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Ministry of Land, Infrastructure and Transport

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(if we have time)

1 . History of GIS in Japan

~ The beginning and Process of GIS
development in Japan ~

The GIS Liaison Committee of Ministries and Agencies

Jan, 1995

Hanshin Awaji Earthquake



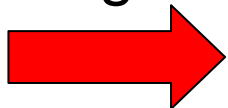
Sept. 1995

The GIS Liaison Committee of Ministries and Agencies was established.

Secretariat : Cabinet Councilor's Office

Assistant : Geographical Survey Institute

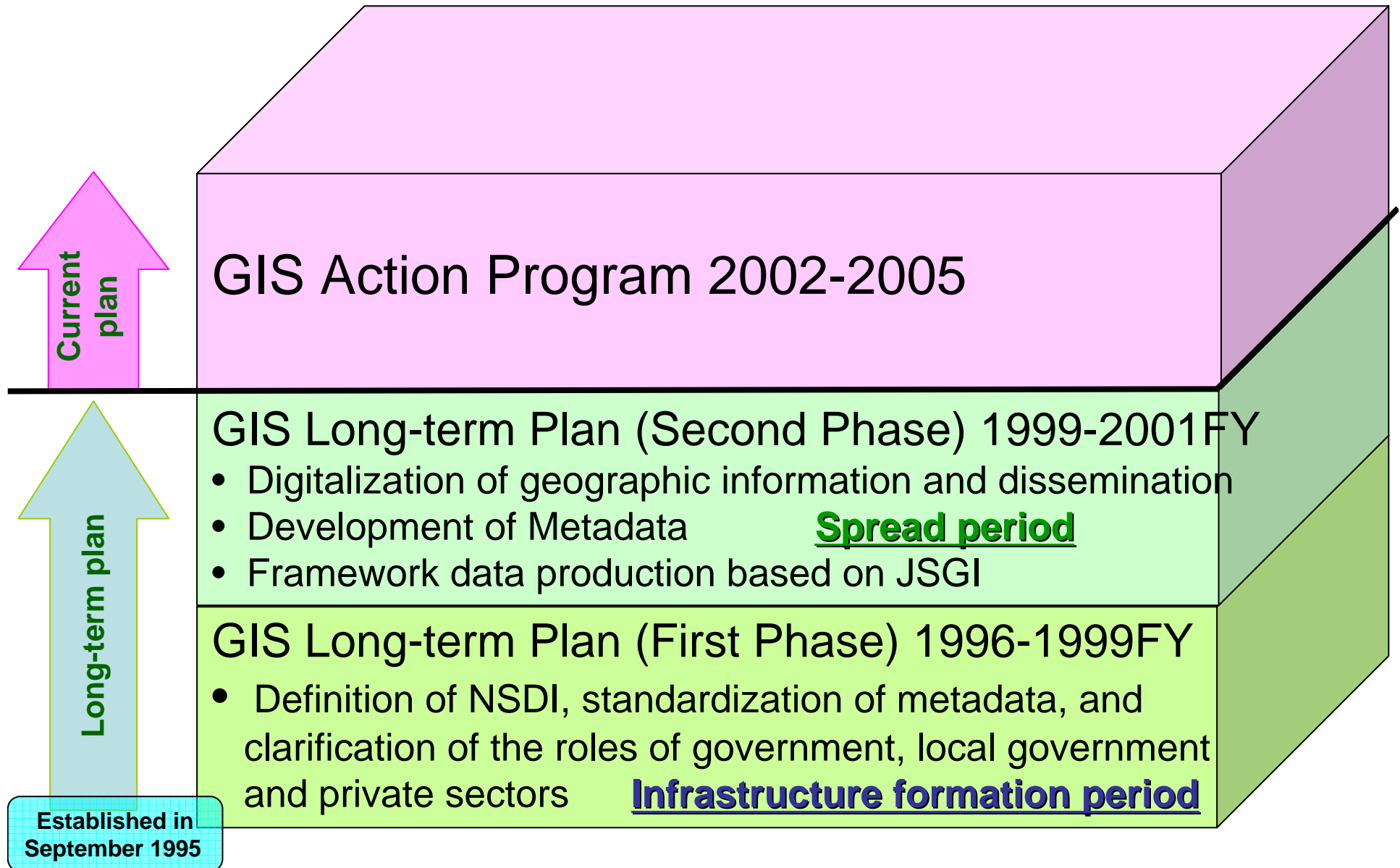
Regional Planning Bureau (National Land Agency)



Starting for systematic spread of GIS

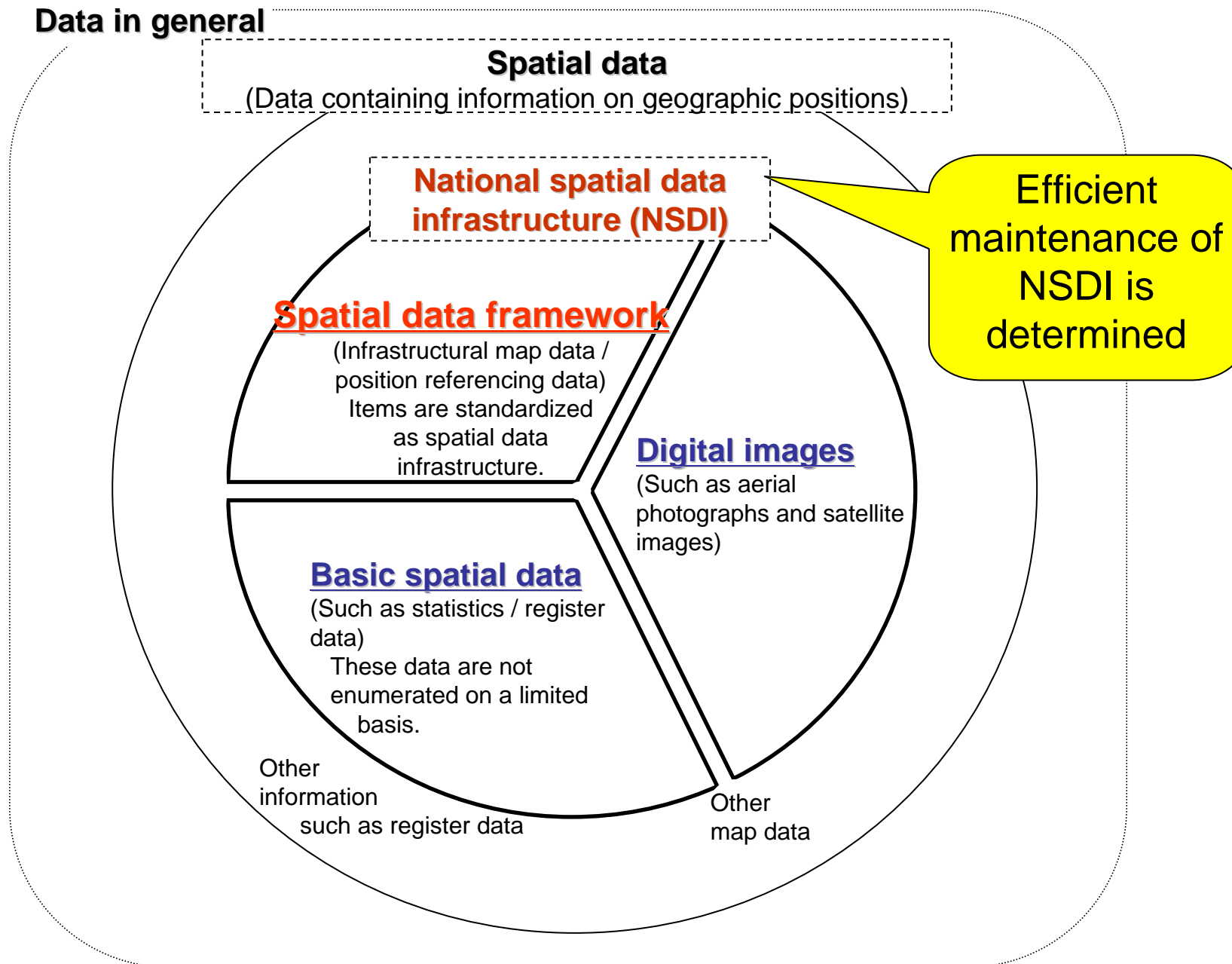
GIS Action Program 2002 – 2005

~ Action plan for realizing a rich national life through GIS ~



NSDI in spatial data

Data in general



Items of “Spatial data framework”

(Definition of Items)

Classified item	Data item (detail)
Geodetic reference point	National reference points, and public reference points
Elevation, and water depth	Elevations of grid points, water depths, and elevation of islands
Traffic	Road area borders, road centerlines, railroad centerlines, and sea routes
Items such as rivers and coastlines	River area borders, water front lines, coastlines, lakes, low-water marks (low-water lines), and river centerlines
Land	Items such as lot lines, as well as forest zone borders
Buildings	Public buildings and ordinary buildings
Position reference information	Position reference information corresponding to place-names; position reference information corresponding to administrative districts, statistical survey zones, and addresses; and standard regional meshes
Items such as parks	Parks, and airports
Image information	

GIS Action program 2002 - 2005

~ Action plan for realizing a rich national life by means of GIS ~

- Plan Period :

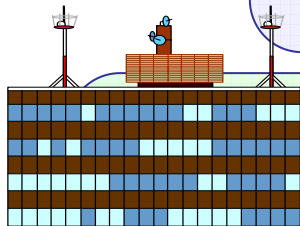
Four years from **FY 2002 – 2005**
(Compatible with Prioritized Plan
for e-Japan)

- Plan Aim :



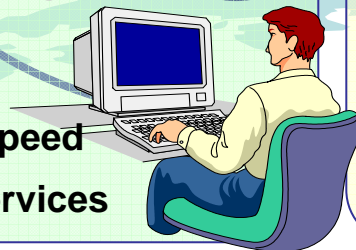
National life in general

Enjoyment of various inexpensive and high quality services



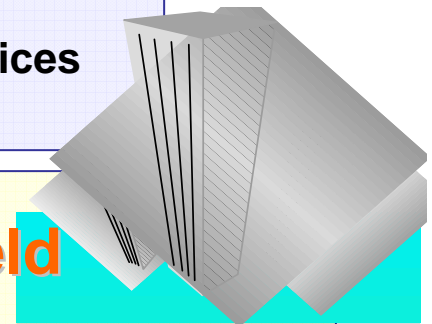
Administrative field

Improvement of efficiency / speed
Enhancement of quality of services



Industrial field

Creation of new business models,
Generation of new employment



2 . Current activities on GIS in Japan

~ Activities on GIS based on GIS action program ~

Government goals

< GIS Liaison Committee of Ministries and Agencies >

GIS Action Program 2002 – 2005

A total of
73 policies

● **Formation of infrastructure environment**

1. Standardization related NSDI, and initiative pioneering use by government
2. Establishment of systems / guidelines from the viewpoint of promoting digitization / distribution of geographic information
3. Promoting the digitization and provision of geographic information
4. Full-scale use and support of GIS

● **Improve efficiency of government and enhance quality of government services using GIS**

5. Improve efficiency of government and enhance quality of government services using GIS
6. Matters such as follow-ups on the plan

1. Promotion of standardization of NSDI

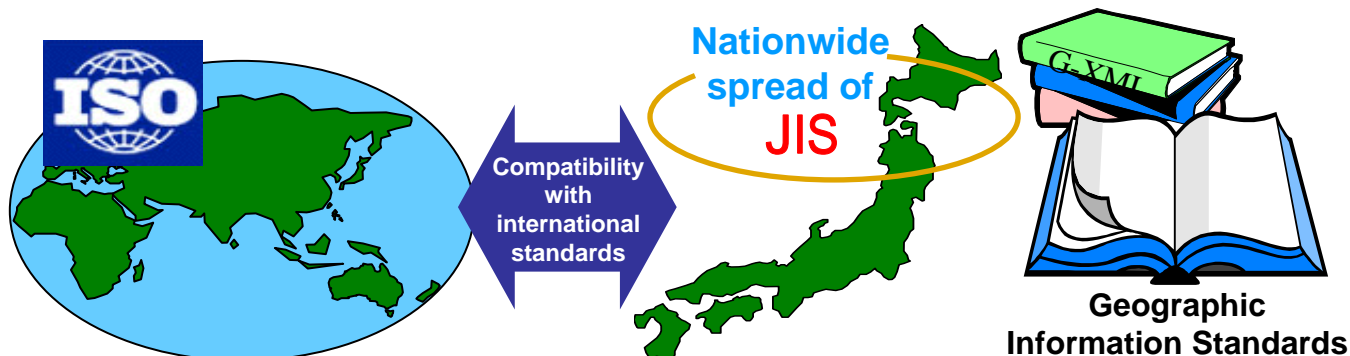
(Promotion of the circulation of data by standardization)

- Promotion of standardization

- Incorporation of JSGI (Japanese Standards for Geographic Information) into the body of JIS (Japanese Industrial Standards)

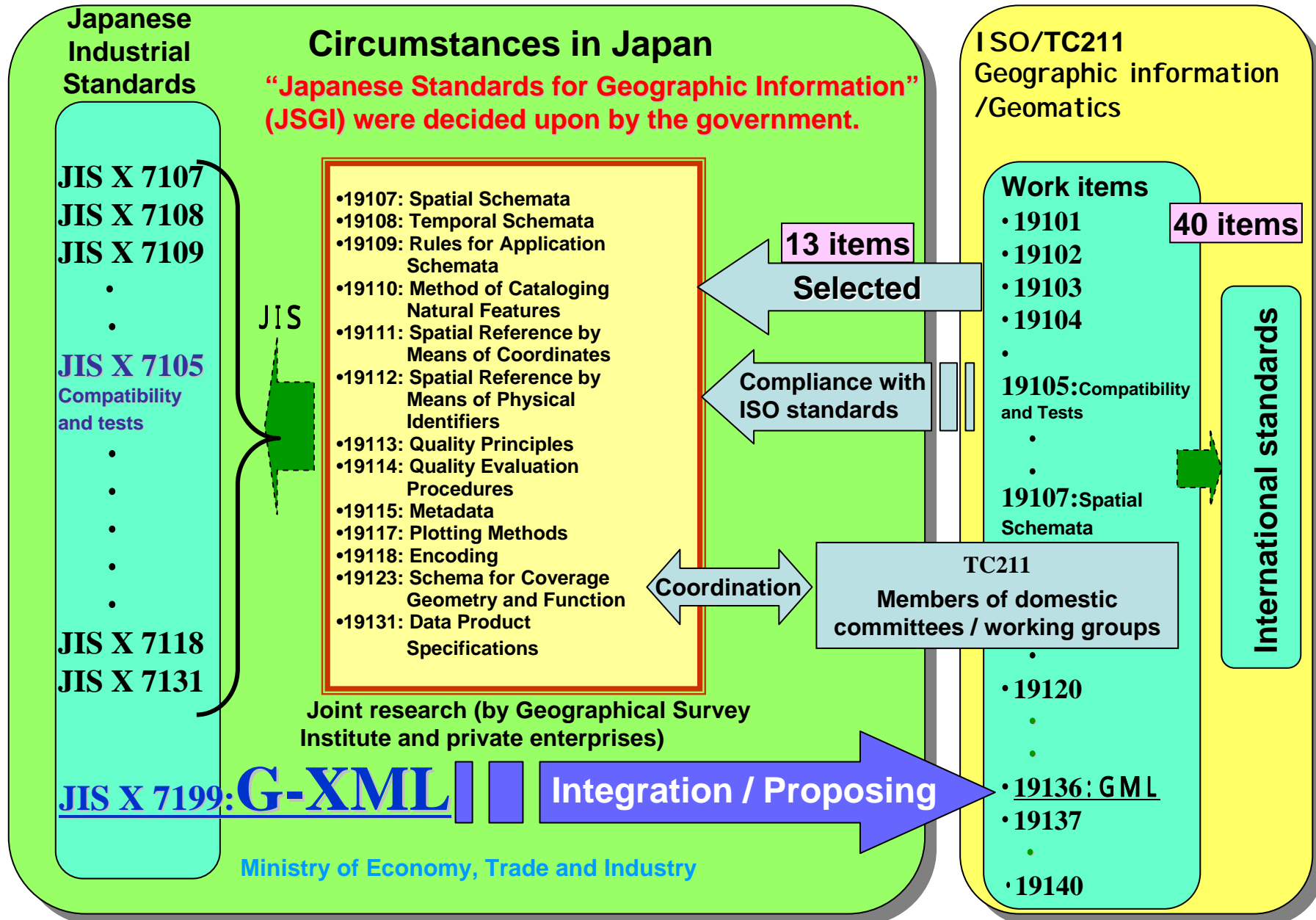
- Initiative efforts made by the government to utilize such standards

- Recent years, there has been a tendency toward increased utilization of these standards by the government, but such efforts need to be further promoted in the future.



Relationship with international standards

International Organization for Standardization



2. Establishment of System and Guidelines

(From the viewpoint of promoting digitization / distribution of geographic information)

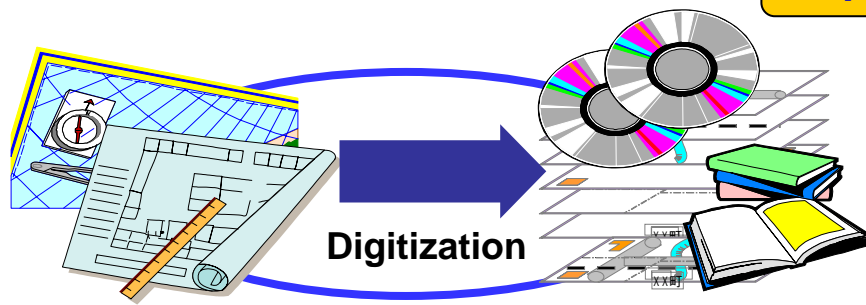
● Promotion of distribution of geographic information

- “Guidelines on Provision of Information by Government” (April 2003)
- Collection of Q&A regarding the above-mentioned guidelines (June 2004)

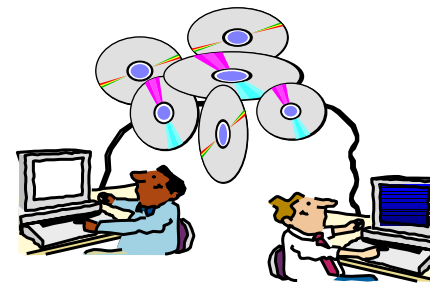
Various problems, such as the following, to be solved

- Protection of personal information
- Infringement of copyright
- Secondary utilization
- etc.

<http://www.cas.go.jp/jp/seisaku/gis/index.html>



Development of setups / guidelines



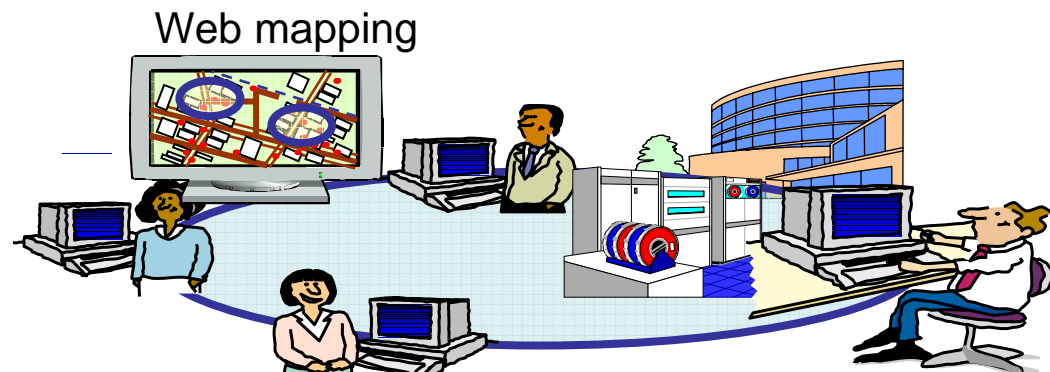
Electronic delivery

Portal site of
Liaison Committee
of Ministries and
Agencies
Concerned with
GIS

3. Promotion of digitization and provision of geographic information

- Matters such as promotion of computerization / provision of NSDI
 - Digitization of spatial data
 - Periodic updating of core geographic information that has been digitalized
 - Promotion of provision of geographic information
 - Clearinghouse

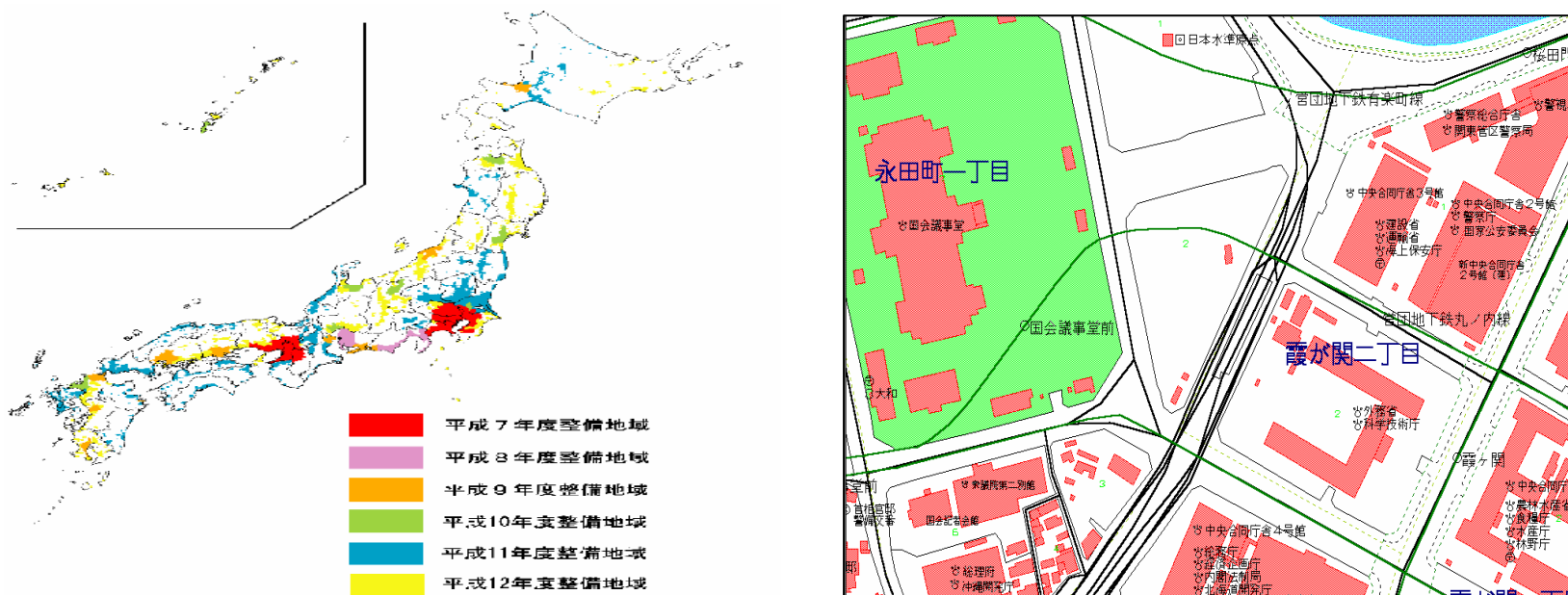
● Internet Provision



Geographic information is provided on the Internet.

Digital Maps 2500 (Spatial Data Infrastructure)

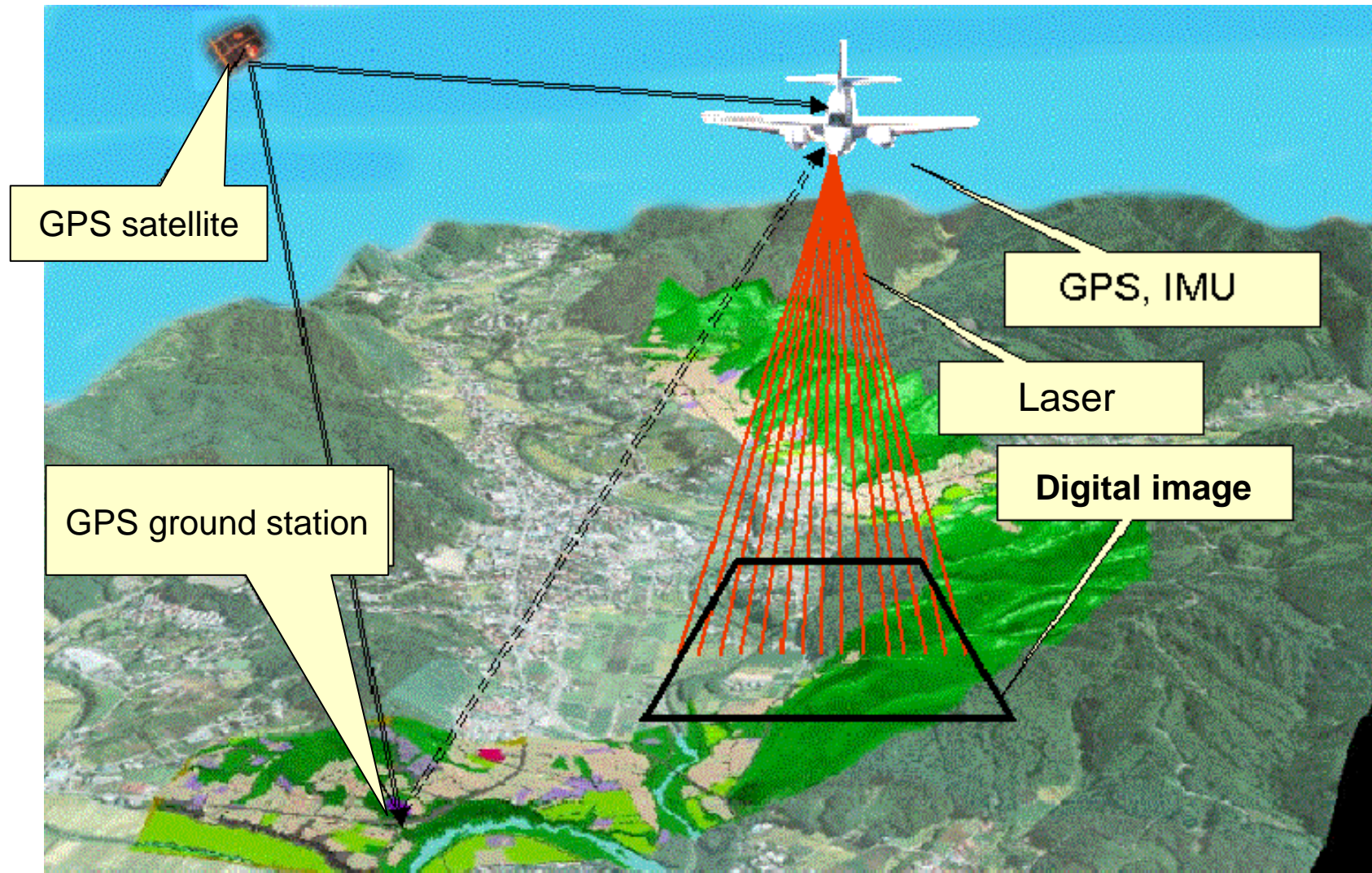
- Development of these maps was completed in FY 2000 for the urban planning areas in the whole of Japan.
- At present, these maps are published in the form of CD-ROM.
- In March 2002, Digital Maps 2500 started to be provided on the Internet.
- These maps conform to the Geographic Information Standards (JPGIS).



This information was obtained by developing spatial data that is frequently utilized in GIS and by providing topological structures (which contain polygon information and network information, among others)

Detailed three-dimensional data were obtained.

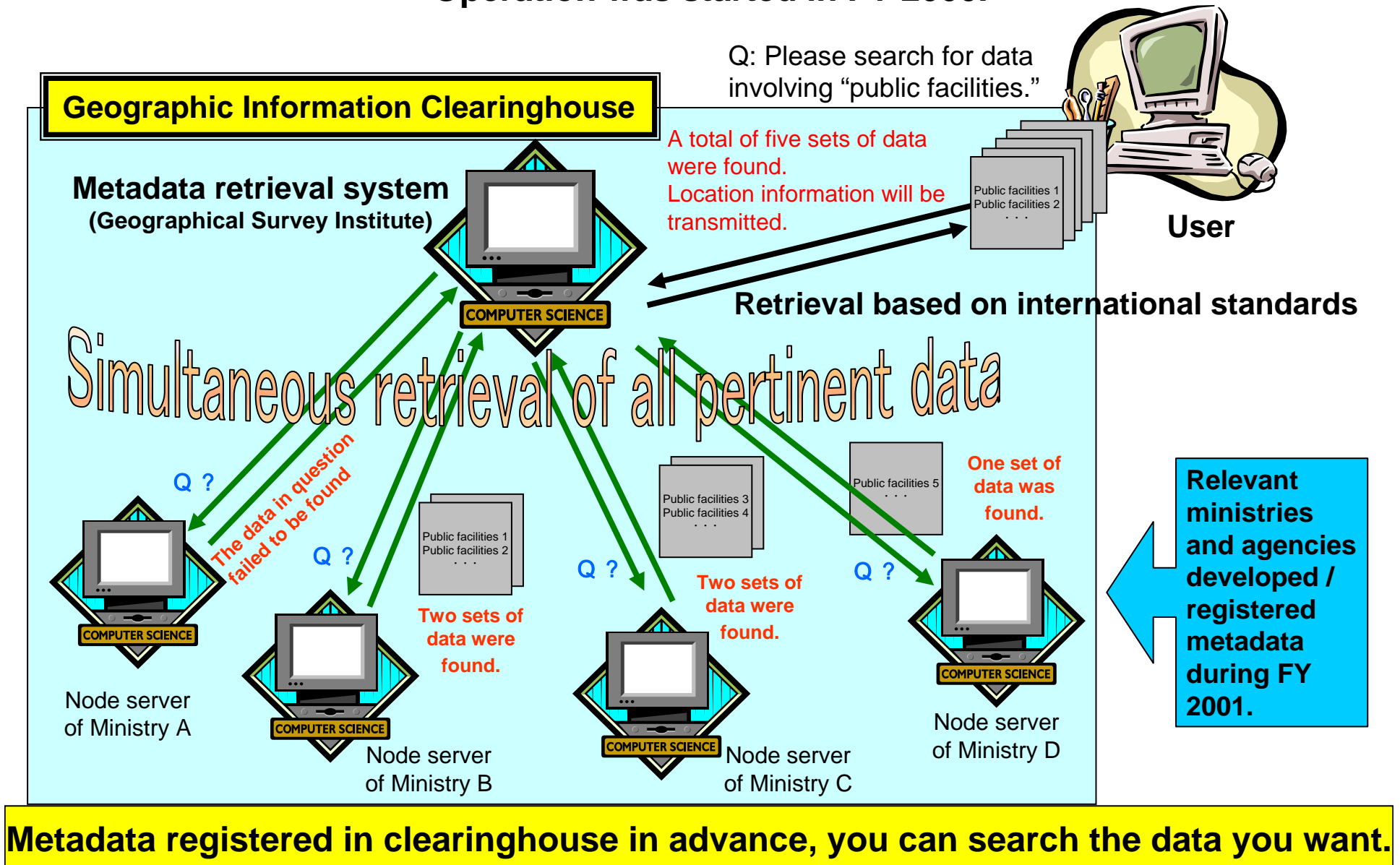
(Acquisition of data)



This is outline of obtaining of detailed three-dimensional data by Laser survey...

Development of metadata and establishment of clearinghouse

~ Operation was started in FY 2000. ~



4. Full-scale use and support of GIS

- **Cooperation with local public bodies and assistance to local areas**

- Introduction status of individual type GIS
- Introduction status of integration type GIS



- Prefectures

FY 2004: 12 entities/47



FY 2005: 14 entities/47

- Municipalities

FY 2003: 301 entities(9.6%)



FY 2005: 297 entities(12.3%)



Development and updating of shared spatial data are points of problem for introduction.

Local public bodies have so many data that cooperation is very important.

- **Enrichment of GIS spreading activities**

- A portal site of the GIS Liaison Committee of Ministries and Agencies was established.

Local financial measures were made.
(Ministry of Public Management, Home Affairs, Posts and Telecommunications)

<http://www.cas.go.jp/jp/seisaku/gis/index.html>

- In 2004, 15 seminars were held through cooperation among ministries and agencies concerned.

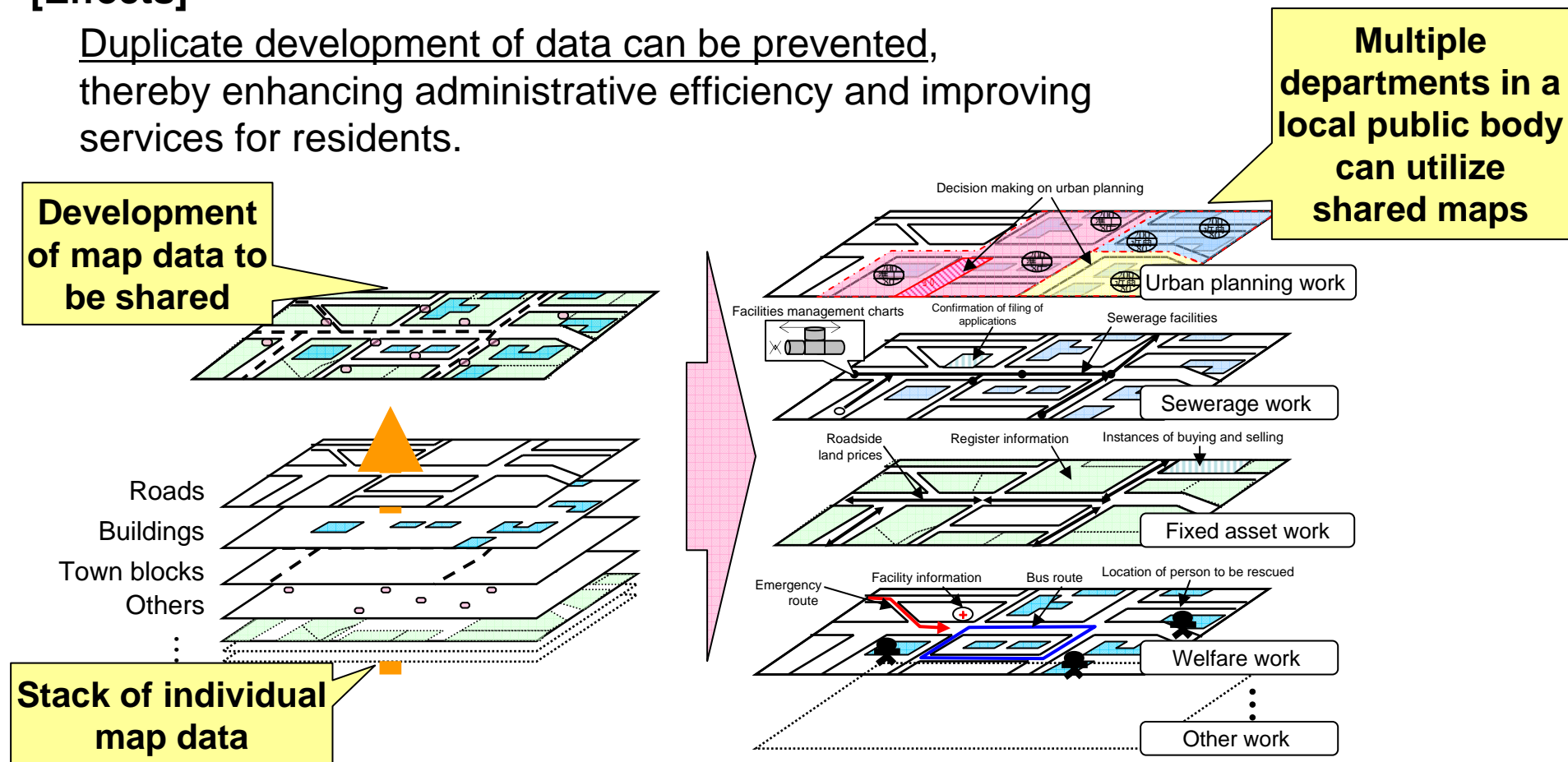
Explanation of integration type GIS

[Definition]

This type of GIS is cross-sectional system such that those map data utilized by multiple bureaus / departments (such as data on roads, town blocks, buildings, and rivers) . They are developed to be shared by multiple bureaus / departments.

[Effects]

Duplicate development of data can be prevented, thereby enhancing administrative efficiency and improving services for residents.

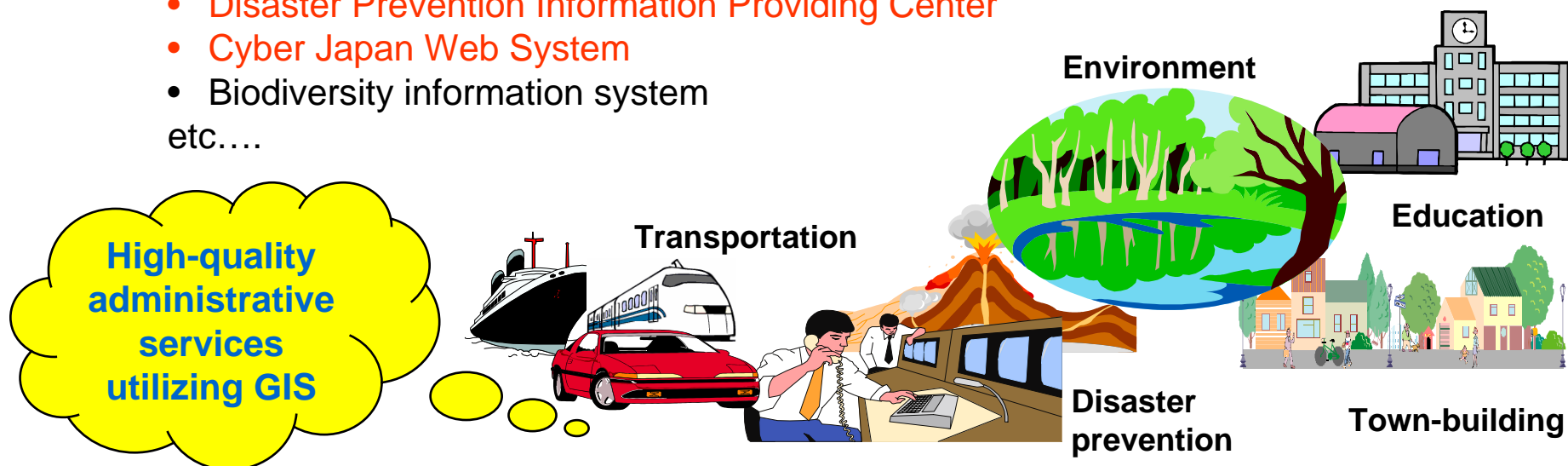


5. Utilization of GIS to improve efficiency of administration and realize high-quality services

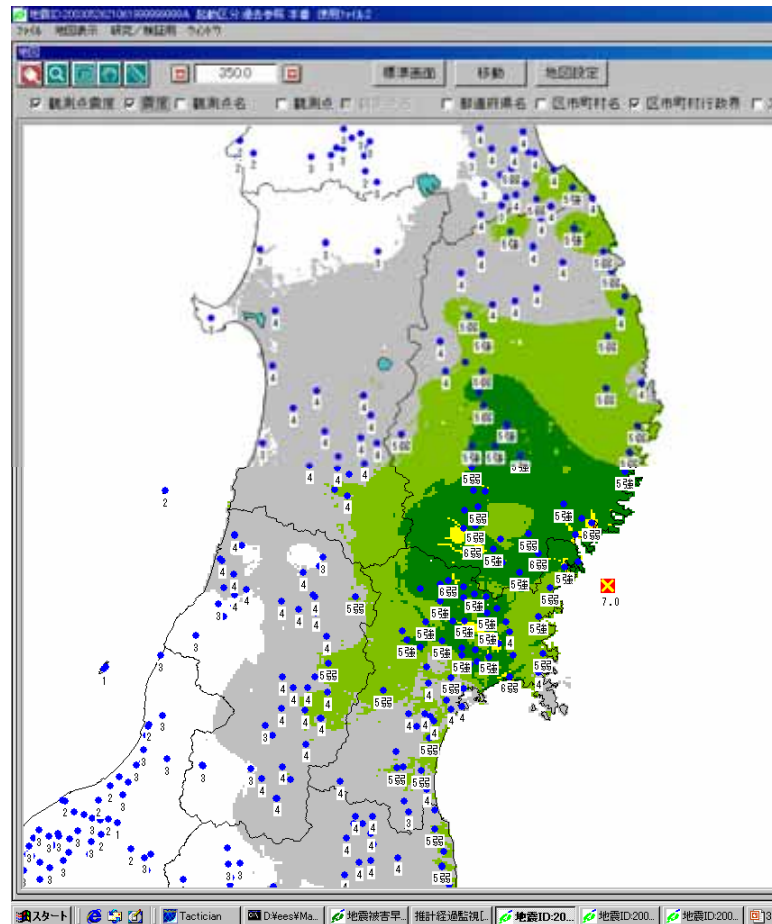
● Realization of high-quality services by using GIS

- Realization of high-quality services is promoted in all administrative fields including disaster prevention, town-building, transportation, environment, and education

- Earthquake disaster prevention information system (DIS)
 - Development of a system in which critical locations for traffic accidents are indicated on maps
 - Statistics GIS Plaza
 - Fire fighting system
 - Forest GIS
 - Disaster Prevention Information Providing Center
 - Cyber Japan Web System
 - Biodiversity information system
- etc....

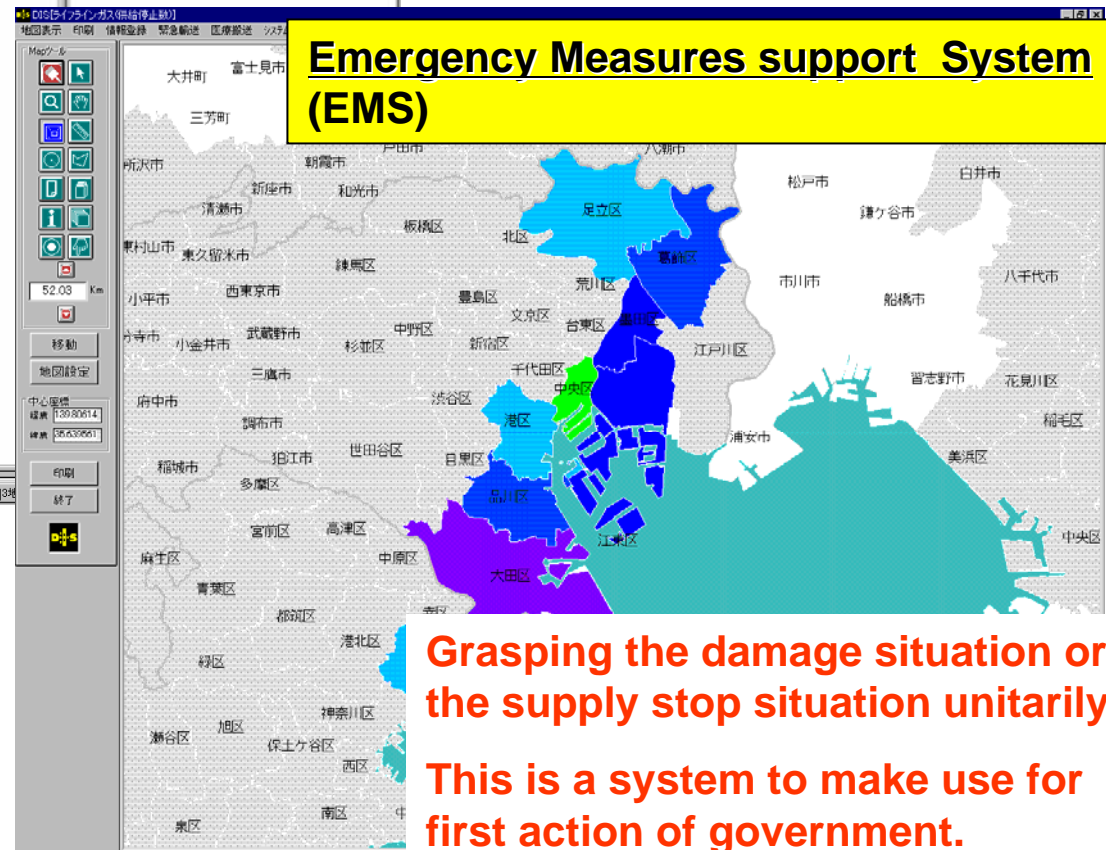


Examples of earthquake Disaster prevention Information System (DIS)



Early damage Estimation System (EES)

The damage will be grasped within 30 minutes from the occurrence of disaster.



Emergency Measures support System (EMS)

Grasping the damage situation or the supply stop situation unitarily.

This is a system to make use for first action of government.

Example of estimation of damage (Seismic intensity distribution)

Information on stop of gas supply by Tokyo Gas Co. Ltd.

3 . Cyber Japan (Future of GIS)

~ Realization of a cyberspace by
means of Cyber Japan ~

Mechanism of “Cyber Japan” = “Denshi-Kokudo”

Integrated use



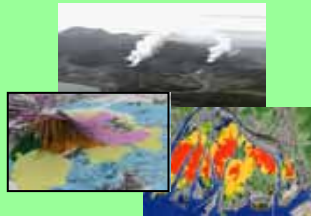
Land
management



City planning



Area
marketing



Disaster
countermeasures



Vehicle
operation
management



Mobile



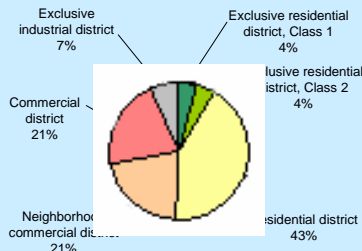
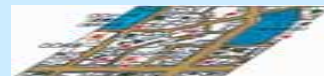
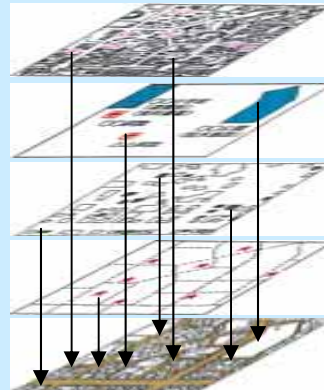
Car navigation
system

“Denshi Kokudo”

Software

Denshi-Kokudo Web system

Superposition, processing,
analysis, and simulation of
geographical information



Data

GSI

Government

Prefectures

Cities, towns

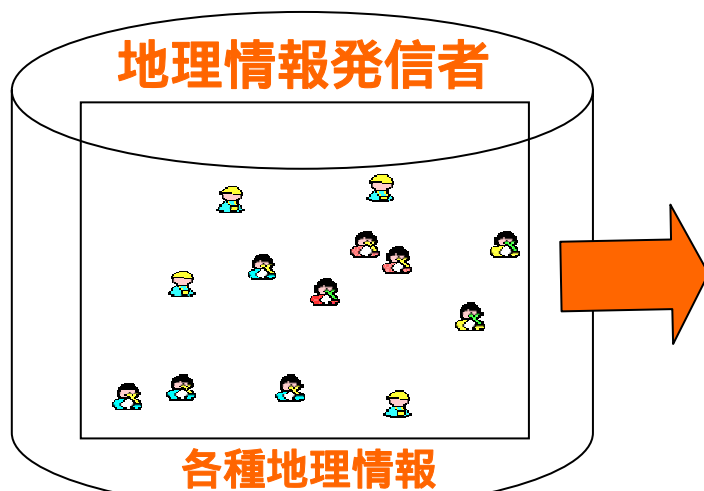
Company

NPO

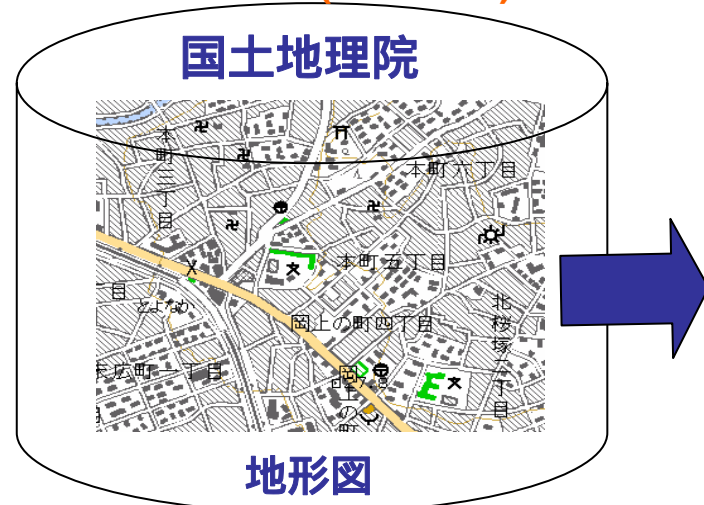
Integration
Internet

Internet

🌐 電子国土の利用イメージ The use of “Denshi Kokudo” 🌐

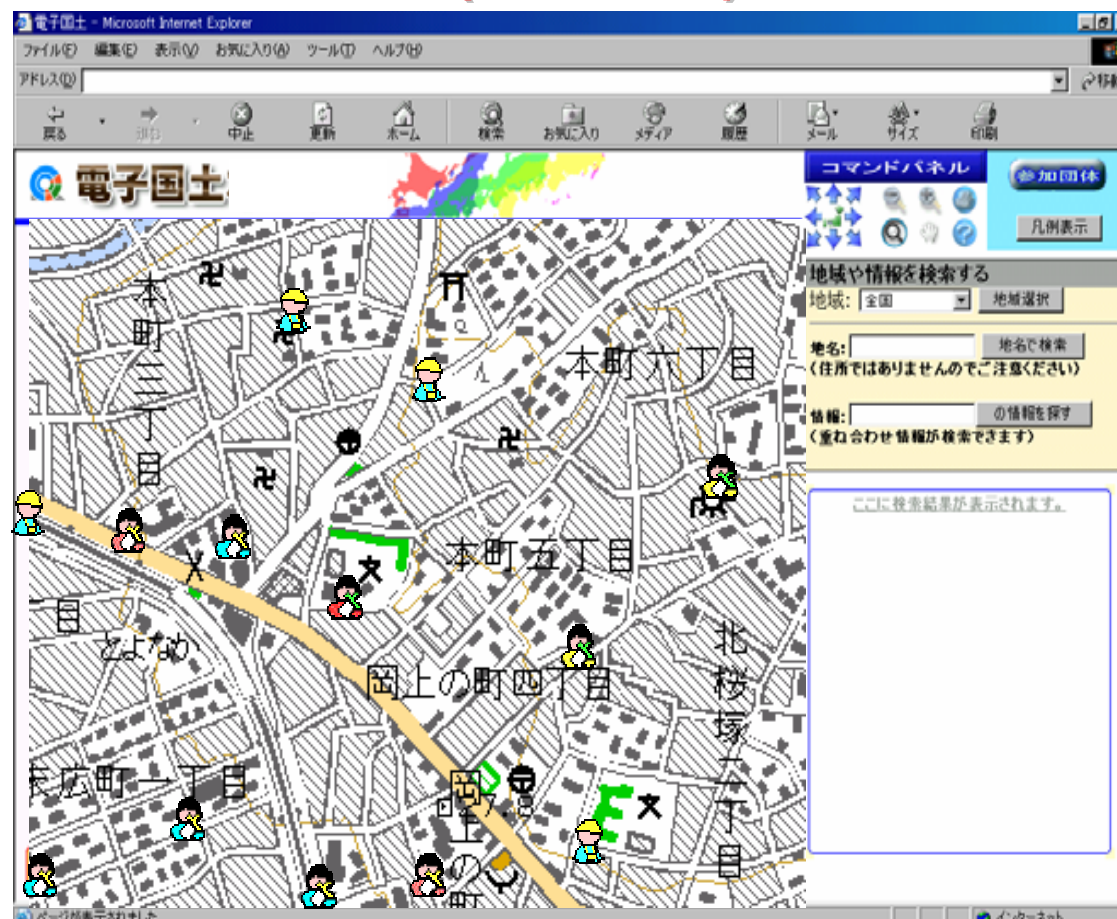


Geographical Information
Provider (サーバー)



Geographical Survey
Institute (サーバー)

User (ユーザー)



電子国土Webシステム

“Denshi Kokudo” Web System

“Denshi Kokudo” Web System

Control panel

電子国土ポータル

Denshi Kokudo portal



地域や地名で
検索できる
Name of a place
reference

2万5千分の1から
2千万分の1まで5種類の
縮尺の地図を提供
Map scale can be
controlled

コマンドパネル

参加団体

凡例表示

地域や情報を検索する

地域: 地域選択

地名: 地名で検索

(住所ではありませんのでご注意ください)

情報: の情報を探す

(おね合わせ情報が検索できます)

ここに検索結果が表示されます。

陸部の地形		水部の地形	行政界	その他
建物等		その他の構造物	緑生	特定地区
基準点・標高		河川 湖沼 海	道路	鉄道
名称	記号			
電子基準点	 74.8			
三角点	 52.3			

凡例の表示
legend

電子
国土
規約
データ

安全・安心マップ作成に利用(security map using Web GIS)



Web GIS of Mitsuke City using Cyber Japan System



Hazard Map

Land Condition Map

Location of school

電子国土Webシステムの応用（その１）

Application of “Cyber Japan” (1)

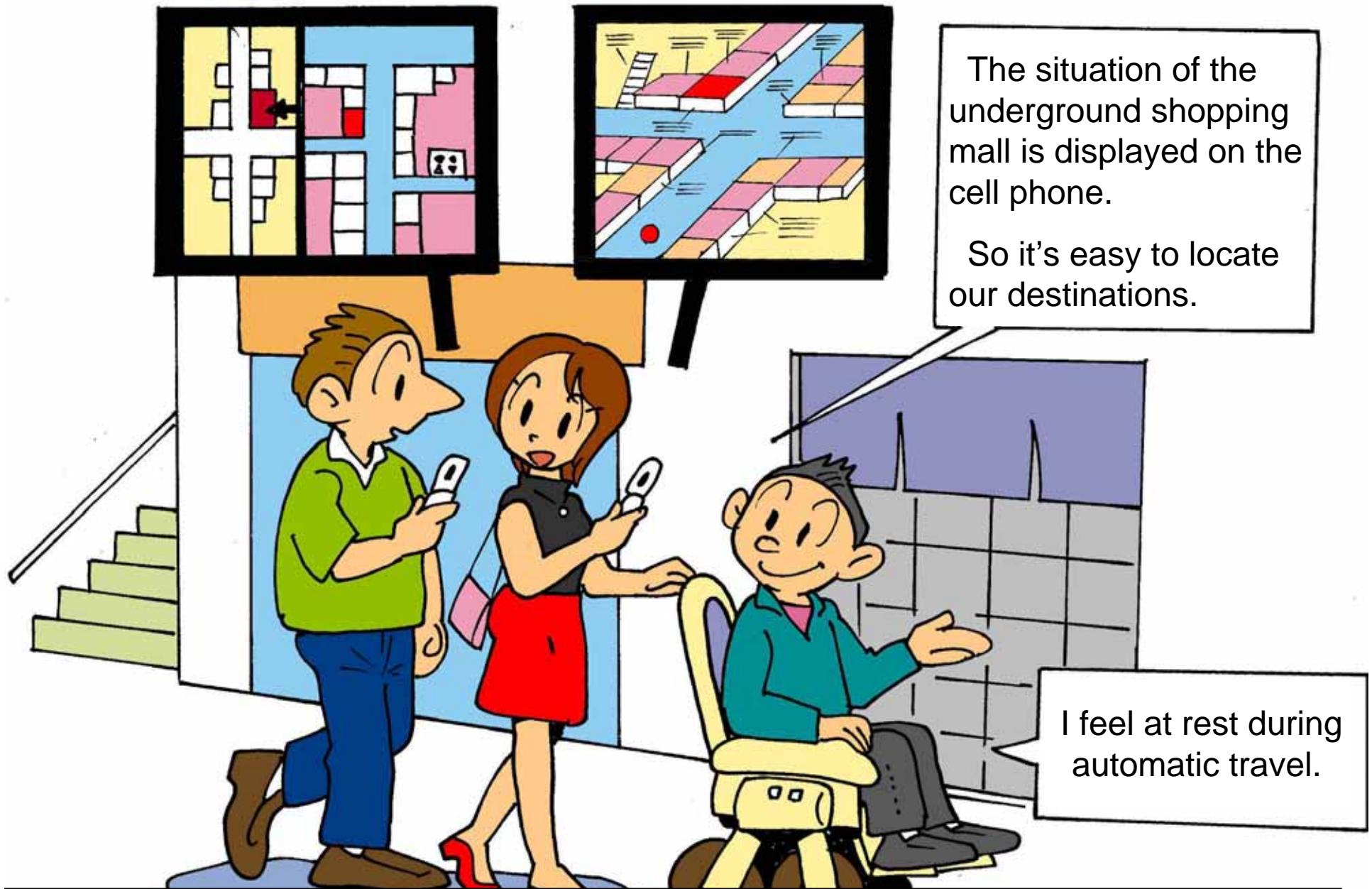
政府の電子申請における添付資料地図作成

The base map for electronic applications

国土交通省電子申請用添付地図作成支援・確認サービス

Attached map making support and confirmation service for electronic application by MLIT

(Ministry of Land, Infrastructure and Transport)



Ubiquitous Society by Cyber Japan