

Construction IT in Japan

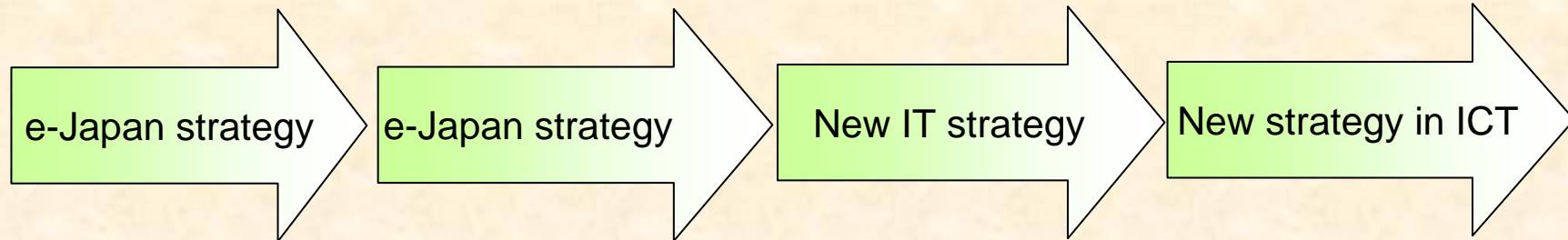
National programs

The 7th Asia Construction IT Roundtable meeting

June 28, 2010

IT Programs of Japanese government

2001 2003 2006 2010



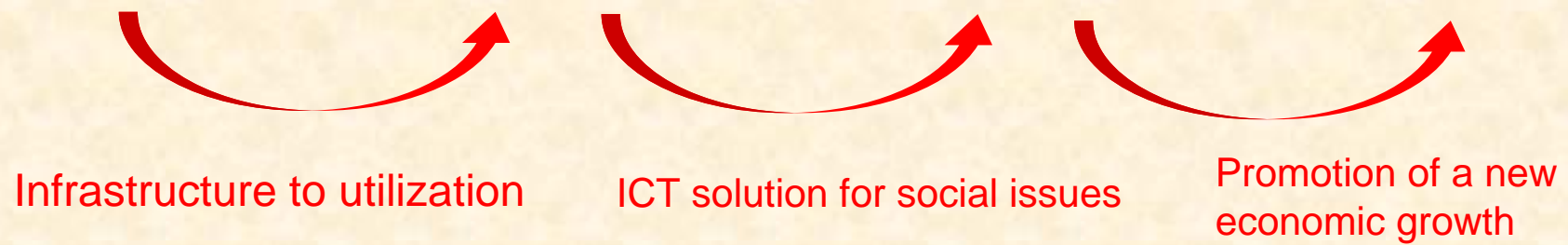
- broad band network
- e-commerce
- e-government
- IT literacy

- medical
- life
- food
- finance
- knowledge
- employment
- public service

- medical
- environment
- safety/security
- ITS
- e-government
- management
- telework
- universal design
- infrastructure
- education
- research/development
- international competitiveness

- realization of e-Government
- re-bonding local communities
- creation of new markets and international expansion

Basic Act on the Formation of an Advanced Information and Telecommunications Network Society



IT Programs of MLIT (Ministry of Land, Infrastructure, transport and tourism)

1. CALS/EC Initiative (1996 ~)

(Continuous Acquisition and Lifecycle Support / Electronic Commerce)

Introducing ICT in public works process aiming to ensure quality and to save cost and time

- Electronic commerce in public procurement
- Exchange and sharing electronic information
- Use of electronic information throughout public works lifecycle

2. Innovation Promotion Scheme (2007)

Long-term strategy initiative for the creation of innovation contributing to the growth with an eye on the year 2025

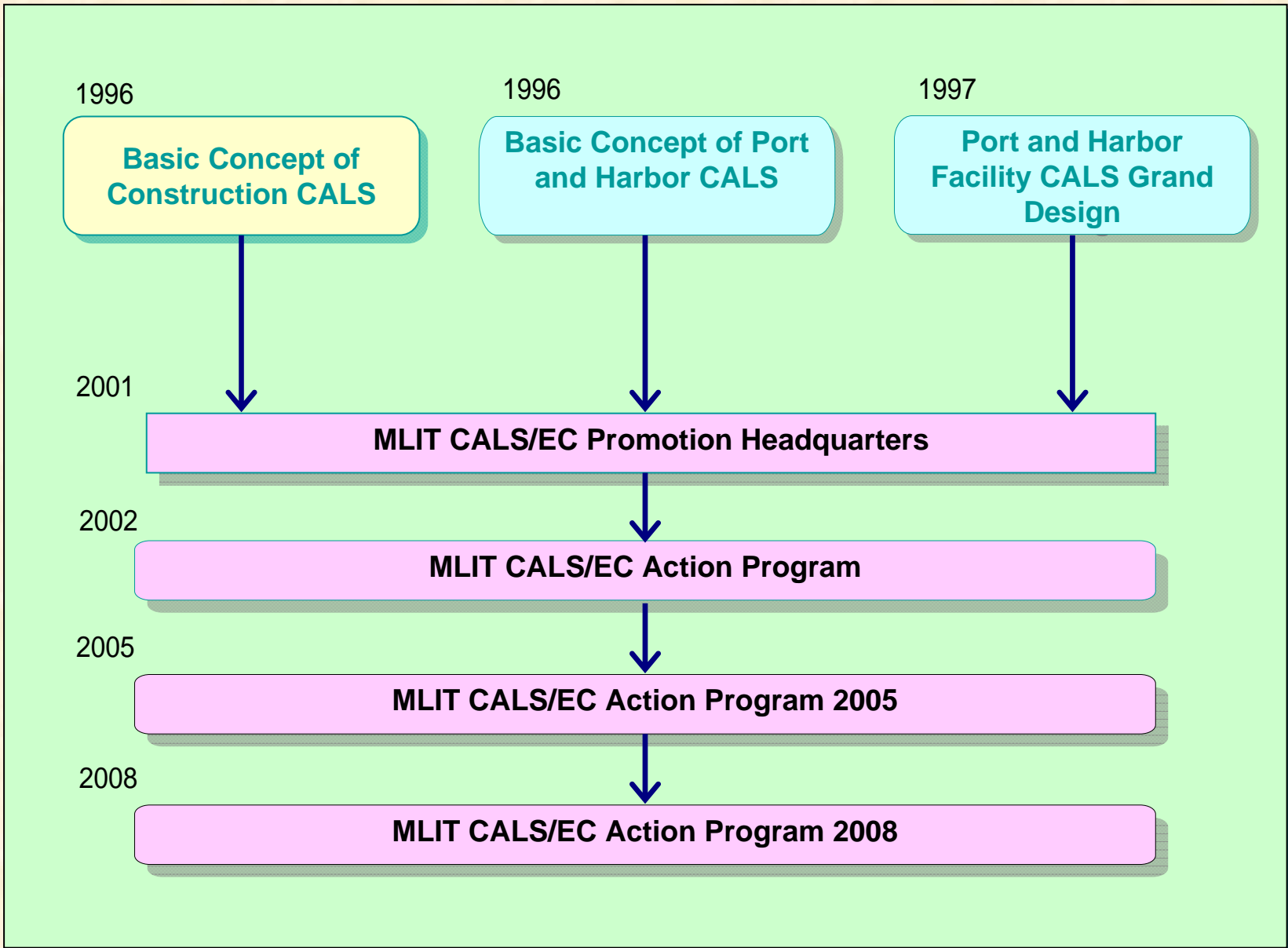
- MLIT version of innovation vision in public works and transportation fields through research and development by incorporating ICT.
- Implementation schedule plan for the target year of 2025.

3. GIS Promotion (2007 ~)

Create an advanced geospatial information utilization society

- geospatial information anytime, anywhere
- obtain accurate information from highly sophisticated analyses

CALS/EC implementation programs



Targets of the Action Program 2008

Target Easy contracting through e-procurement process

Target Smoother communication between governments and contractors

Target Use available electronic data throughout surveys, planning, design, construction and maintenance

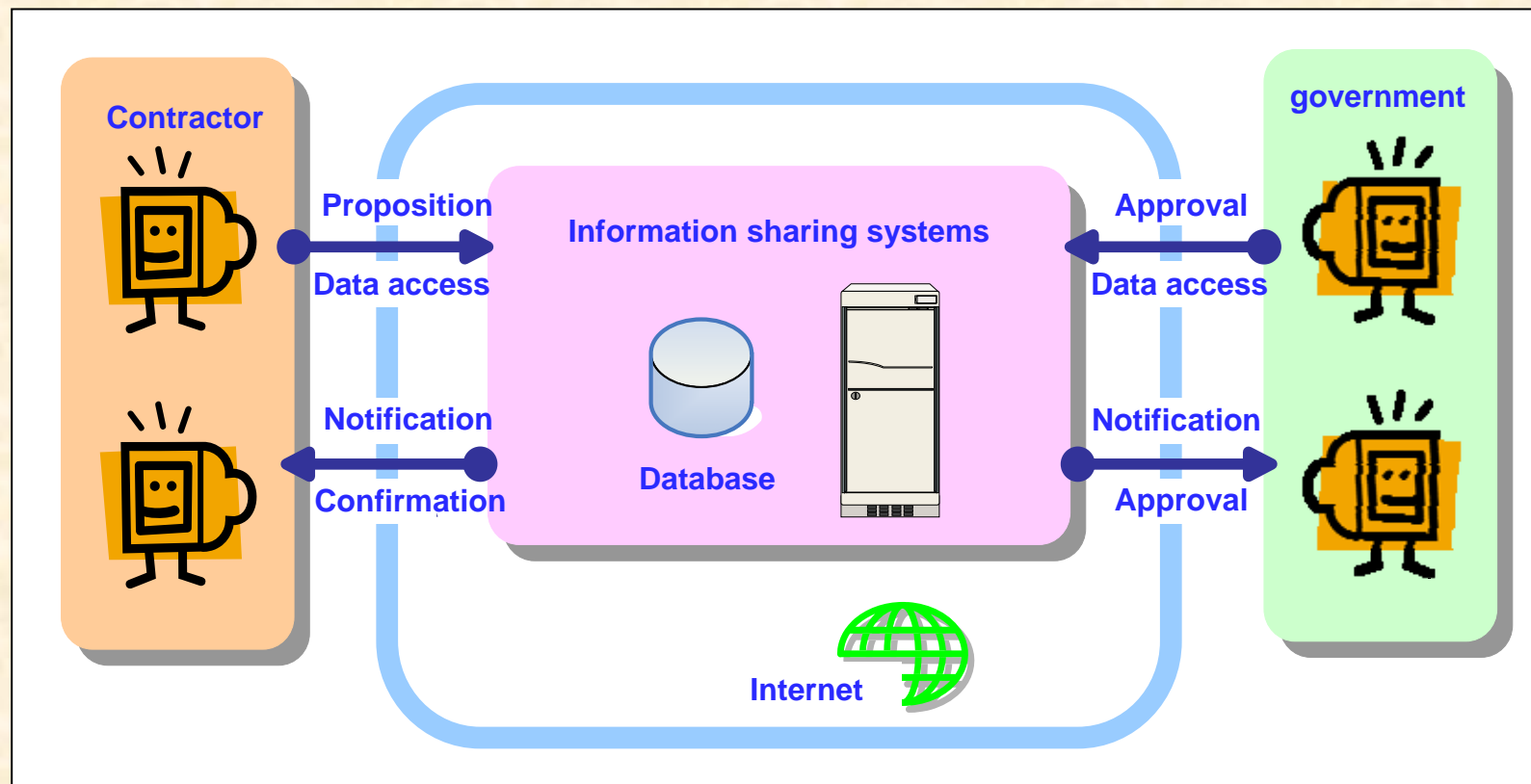
Target Improve the quality of works by promoting the IT (or Intelligent) construction system

Target Develop IT base inspecting technology with electronic delivery

Target Promote CALS/EC

Target Smoother communication between governments and contractors

- Achieve smoother communication between governments and contractors by using an information sharing system



Target Use of available electronic data throughout surveys, planning, design, construction and maintenance

- All necessary documentation delivered electronically
- Development of electronic 3-D data system utilized throughout all phases of the construction works

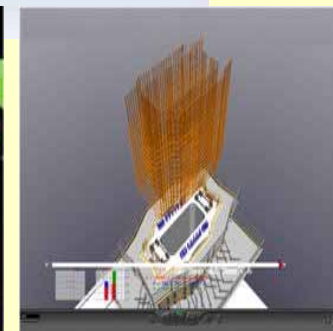
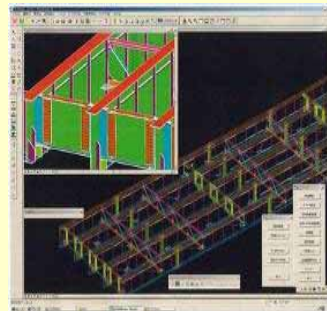
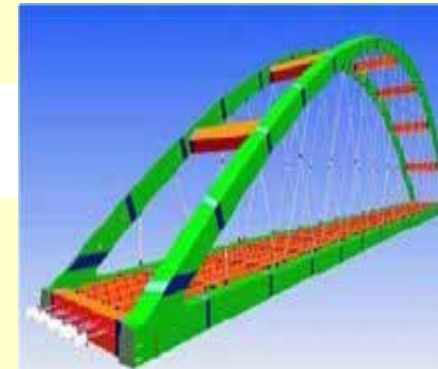
Introduction of 3-D
CAD data



3-D data obtained

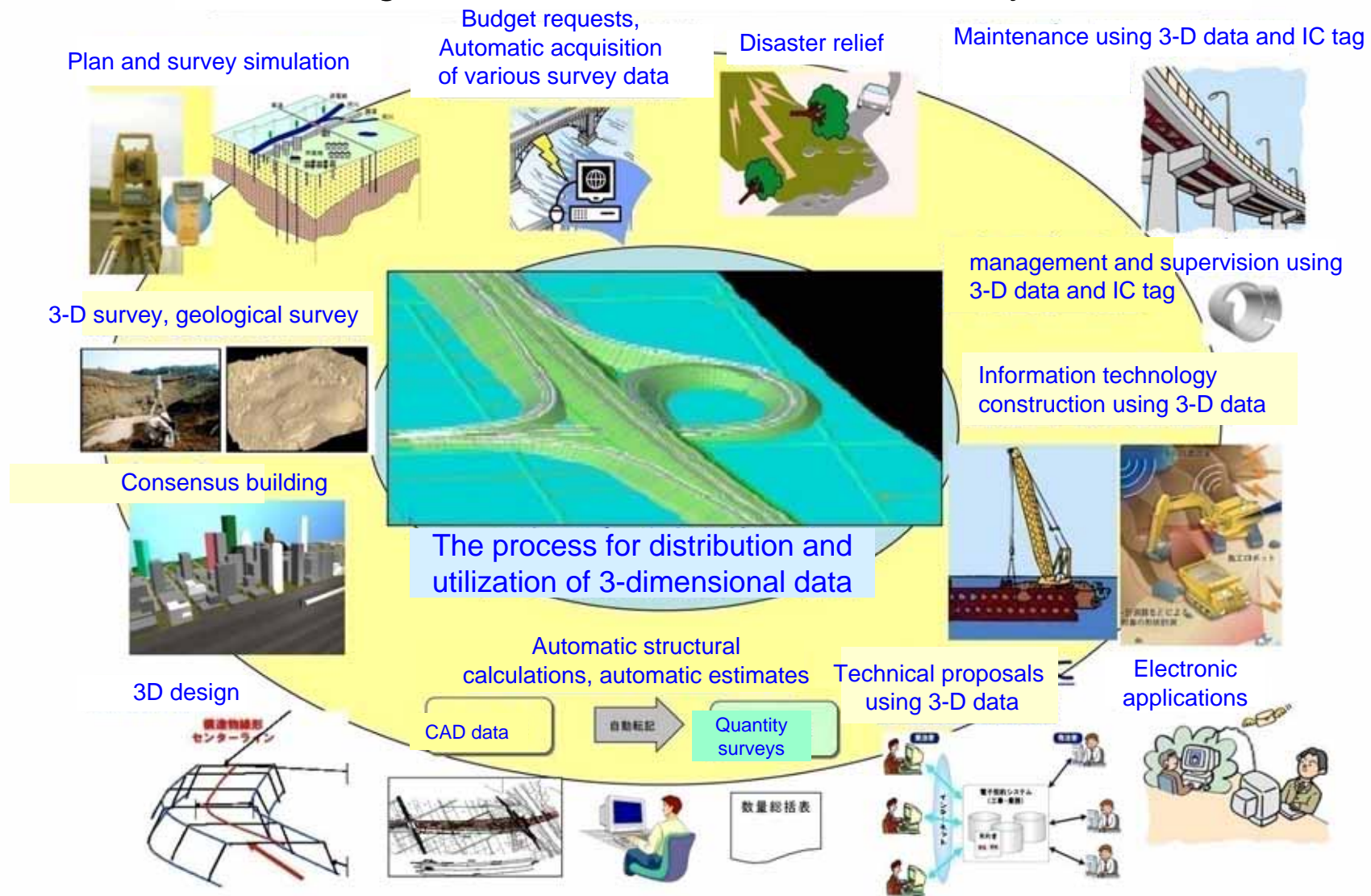


Model works



AP2008 Involved in Setting Productivity Improvement Goals

Image of 3-dimensional Production System



Target Improve the quality of works by promoting the IT (Intelligent) construction system

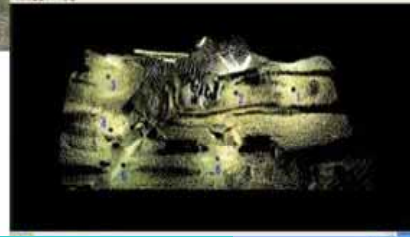
- Aim to improve the quality of works and reduce costs by making effective use of computing in construction

● Surveying by TS

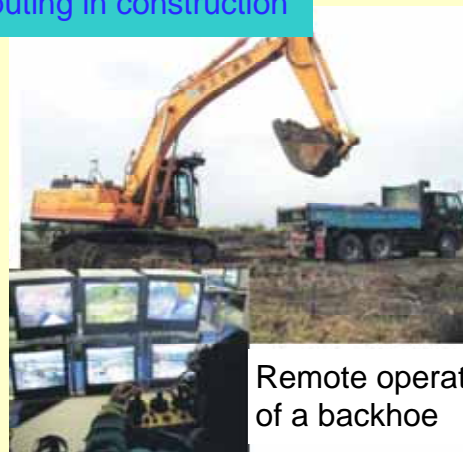


Surveying using a 3-D scanner

3-D display of surveying data

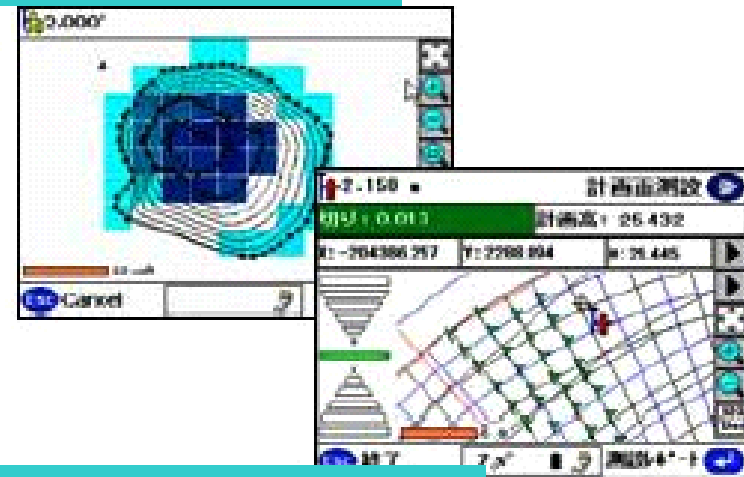


● Computing in construction

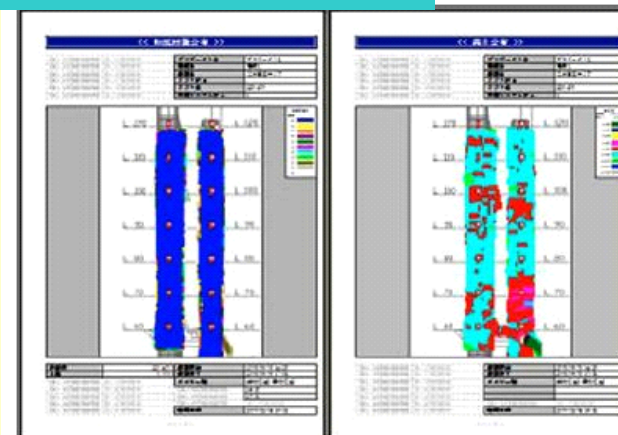


Remote operation of a backhoe

● As-built measurement

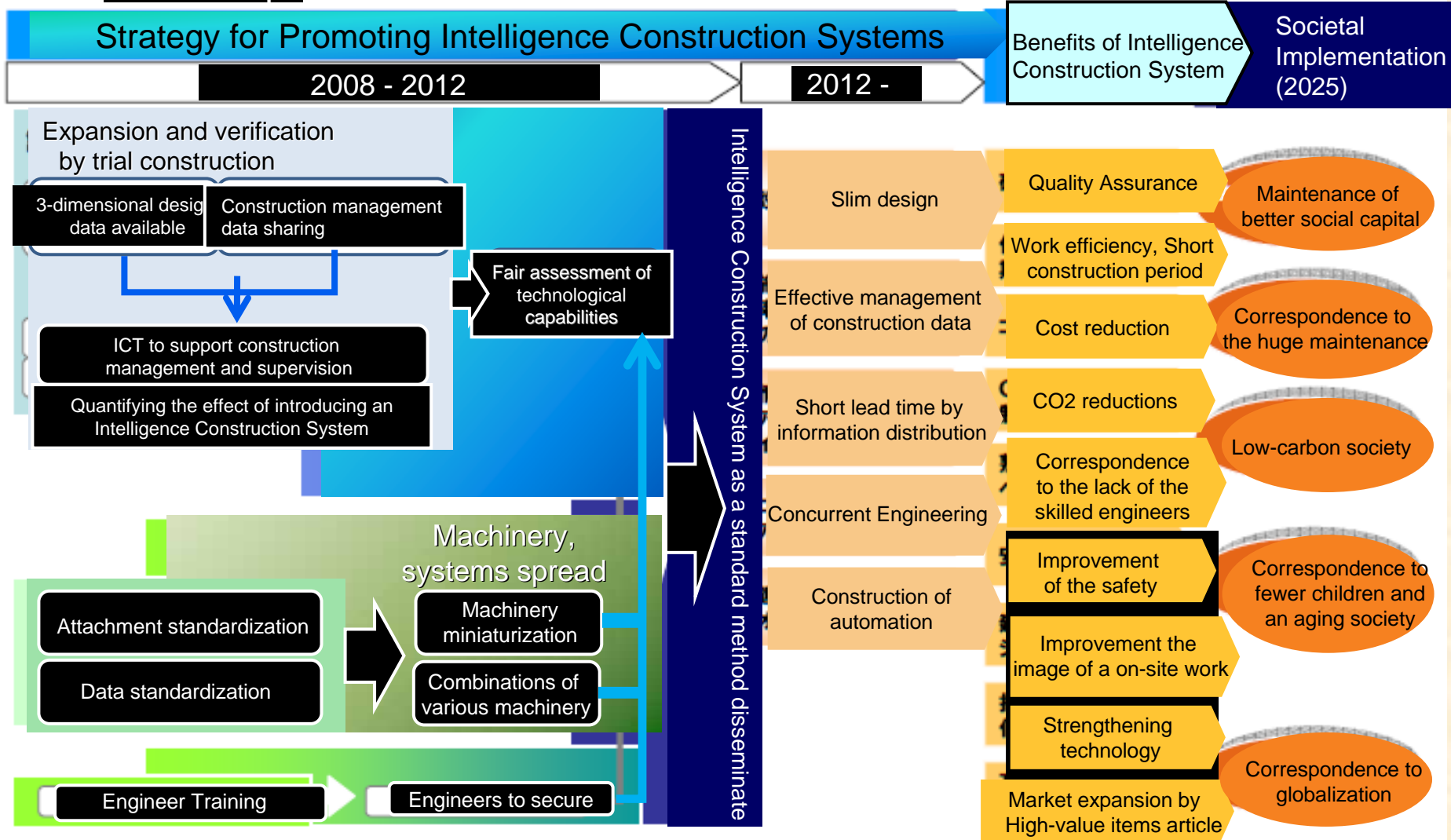


● Assessing surface compaction



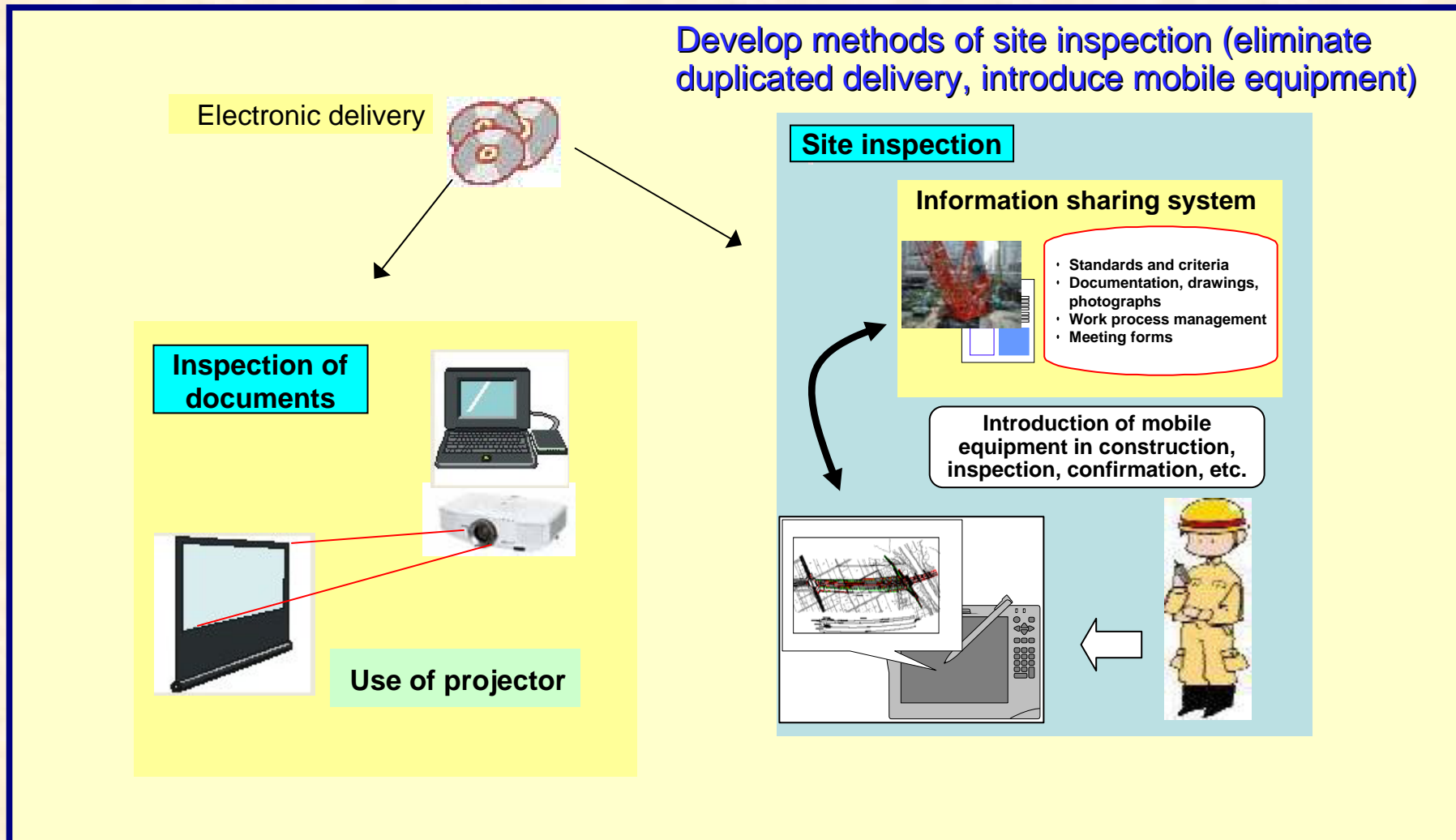
IT (Intelligent) Construction Roadmap

Roadmap



Target Develop IT base inspecting technology with electronic delivery

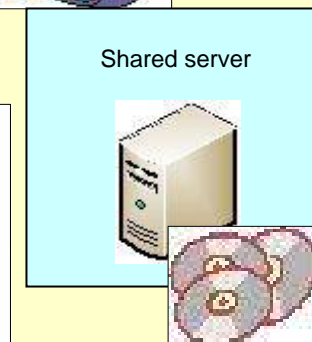
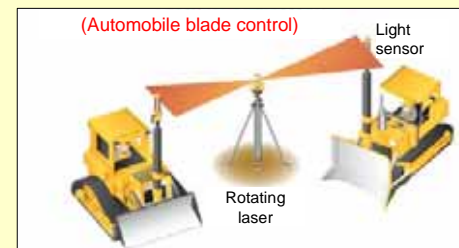
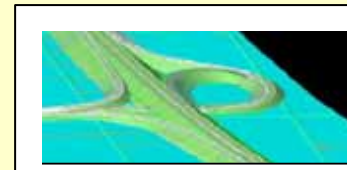
- Develop methods of site inspection to eliminate duplicated paper-electronic delivery, and save energy in inspection of documents



Target Promote CALS/EC

- Promote the CALS/EC through systems of training and qualification, etc.
- Improve engineer's CALS/EC literacy

Training of engineers for CALS/EC diffusion Develop related technical standards

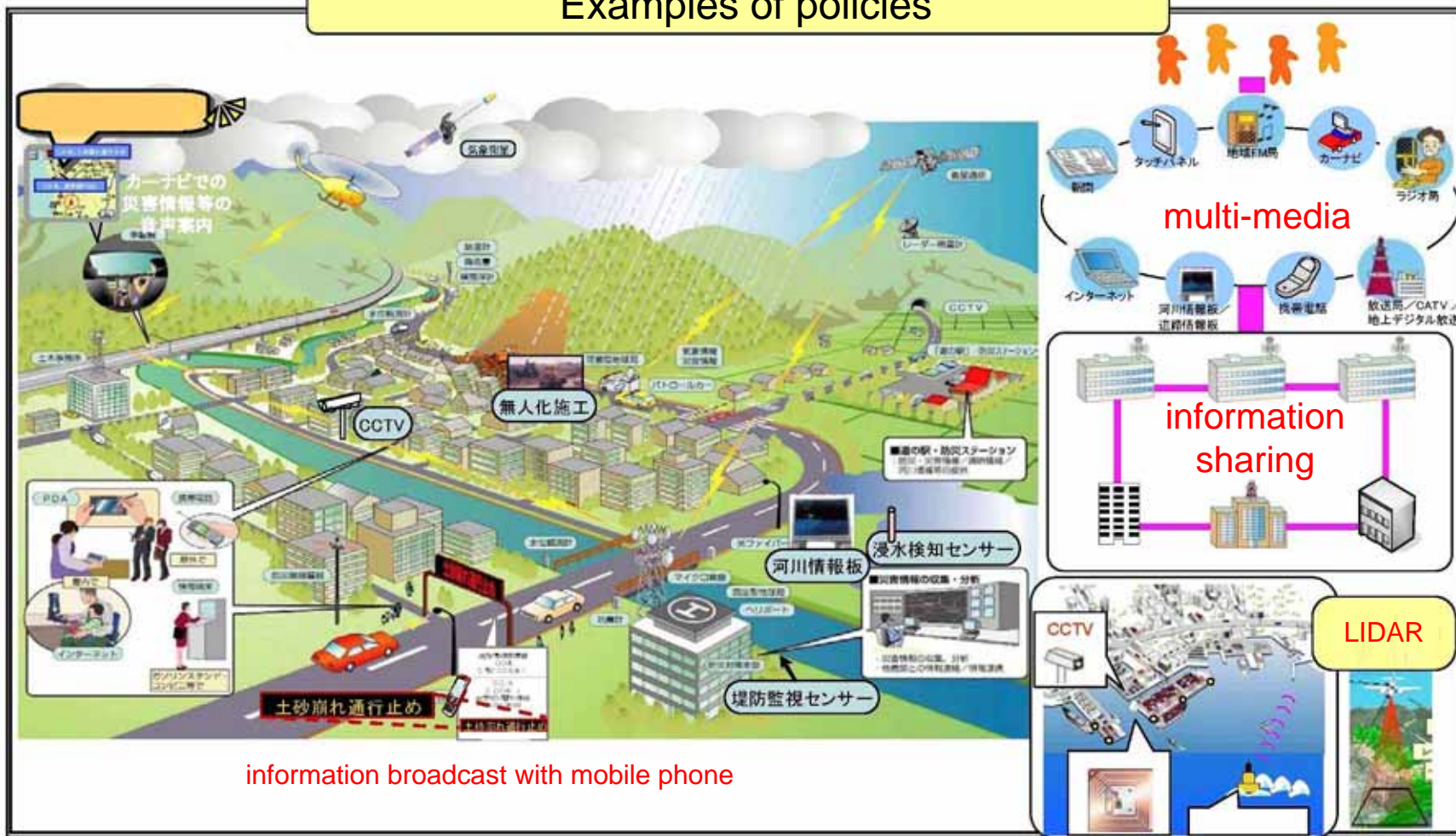


MLIT Innovation Promotion Scheme

- May 2007: released from the Ministry of Land, Infrastructure, Transport and Tourism (MLIT)
- ICT was recognized as a major tool for promoting innovation. ICT-based innovation considers possibilities regarding the Land, Infrastructure and Transport sectors, including land, infrastructure construction, and international/regional transportation.
- Implement goals and measures for FY2025 and formulate time schedules thereof.

Creation of Hazard Resistible Society

Examples of policies



Extract from the Innovation Promotion Scheme

9. Efficiency of Infrastructure Management and Improvement of Productivity

(1) Common basis for the development of an information-sharing platform

A geospatial information platform is built as a common base to promote CALS and share various information related to Land, Infrastructure, and Transport administration.

- Geospatial information sharing and utilization
 - Maintenance and update of the map information that forms the base
 - Building a **geographical information platform**
 - Development of **seamless position identification** technology
- Information sharing and cooperation that utilizes **CALS / EC**
 - Building **XML database**
 - Building **information-sharing platforms** such as a registry and portal-site

(3) Efficiency and Sophistication of Construction

By utilizing advanced ICT, the production management of construction improves without being inferior to the manufacturing industry. As a result, the productivity of the construction industry greatly improves.

- Optimization of overall construction production
 - Next-generation CAD data standardization
 - Development and promotion of information management systems for each construction process
- Promotion of information technology for construction and sophistication of material procurement
 - Development of standard for ICT-enabled management and supervision
 - Development and spread of robot technology in construction site

GIS Promotion

2007: Basic Act on the Advancement of Utilizing Geospatial Information

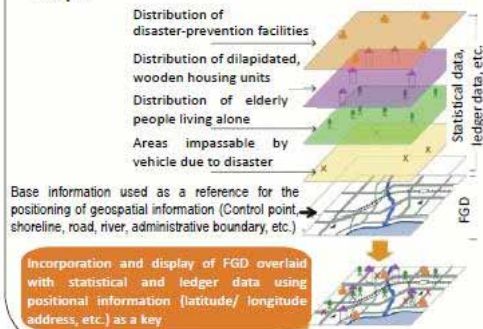
2008: Basic Plan for the Advancement of Utilizing Geospatial Information.

- Use of GIS and Space-based Positioning, Navigation and Timing
- Create an advanced geospatial information utilization society
- Surveys and research for formulating rules related to the general development, updating, provision and distribution of geospatial information
- Promotion of the standardization of geospatial information
- Development and updating of Fundamental Geospatial Data (FGD)

Goal of the Plan

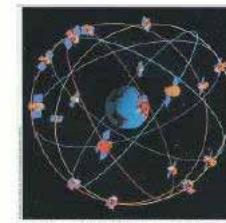
Geographic Information System (GIS)

Information system that provides visual presentation and highly sophisticated analyses of digital geospatial information processed comprehensively on electronic maps



Space-based Positioning, Navigation and Timing (Space-based PNT)

Through signals transmitted from satellites, acquisition of positional and time information and, based on the said information, acquisition of routes, etc. to the destination

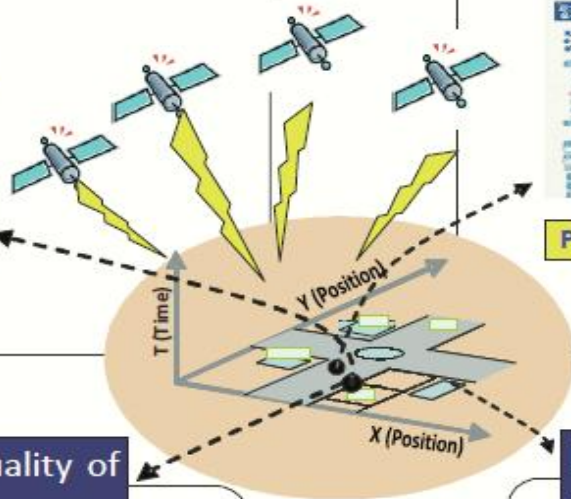
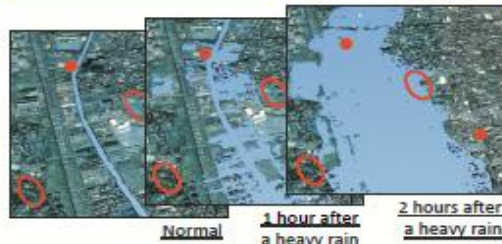


Realization of an advanced geospatial information utilization society
 where people can utilize necessary geospatial information anytime, anywhere and obtain accurate information derived from sophisticated analyses for their activities

Promoting utilization, development preservation, etc. of the national land

- Utilizing GIS for the formulation of the national land plan
- Utilizing Space-based PNT for the management and preservation of remote islands
- Especially in the field of disaster prevention, the coordinated use of GIS and Space-based PNT is expected to work in understanding disaster situations, etc.

Simulation of flooding by heavy rain

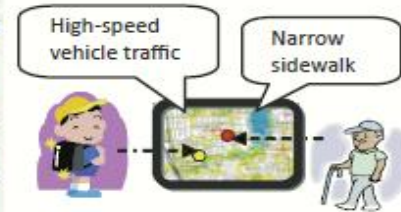


Enhancing safety, security and convenience of people's lives

- Providing public facility information and administrative information through a "one-stop" service system
- Providing sophisticated commercial services, such as transportation support service for elderly people



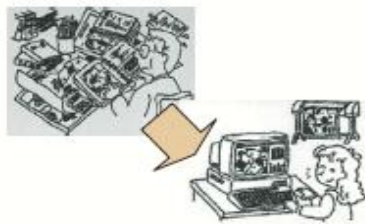
Public facility search



Transportation support for elderly and vulnerable people

Enhancing the efficiency and quality of administration

- Cost reduction by sharing base map data
- Advanced approaches, such as integration of opinions and information relating to community development activities, which GIS and electronic conference rooms are interlinked



Development and growth of new industries and services

- Increased business opportunities by expanding the content-distribution network
- Expectations for the development of services that combine the functions of mobile phones and Space-based PNT



Thank you !!

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