EU-Japan Corporation Workshop on ITS, Tokyo

Probe Data Collection and Shared Information Platform

May 15, 2012

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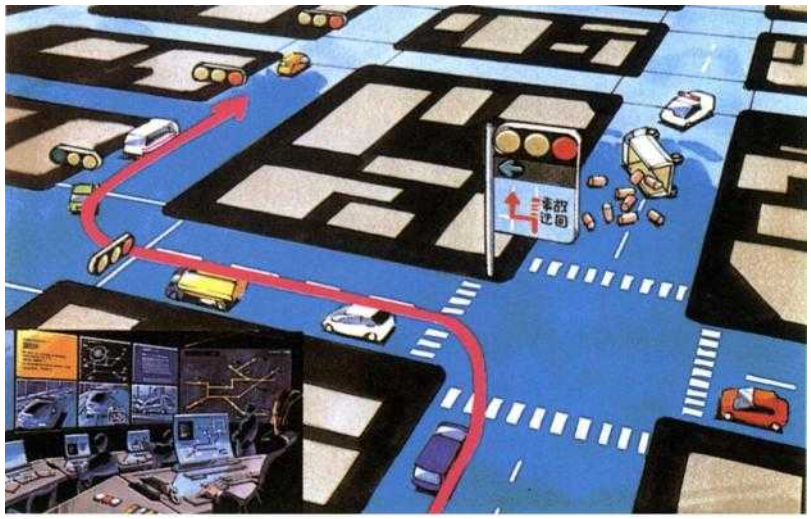
President, ITS Japan

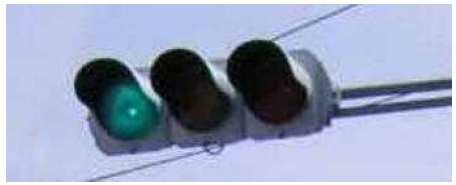
Conventional traffic management system

For safety and smooth flow, traffic signals are systematically controlled by measuring and predicting traffic flow.



Vehicle Detectors

Traffic Control Center

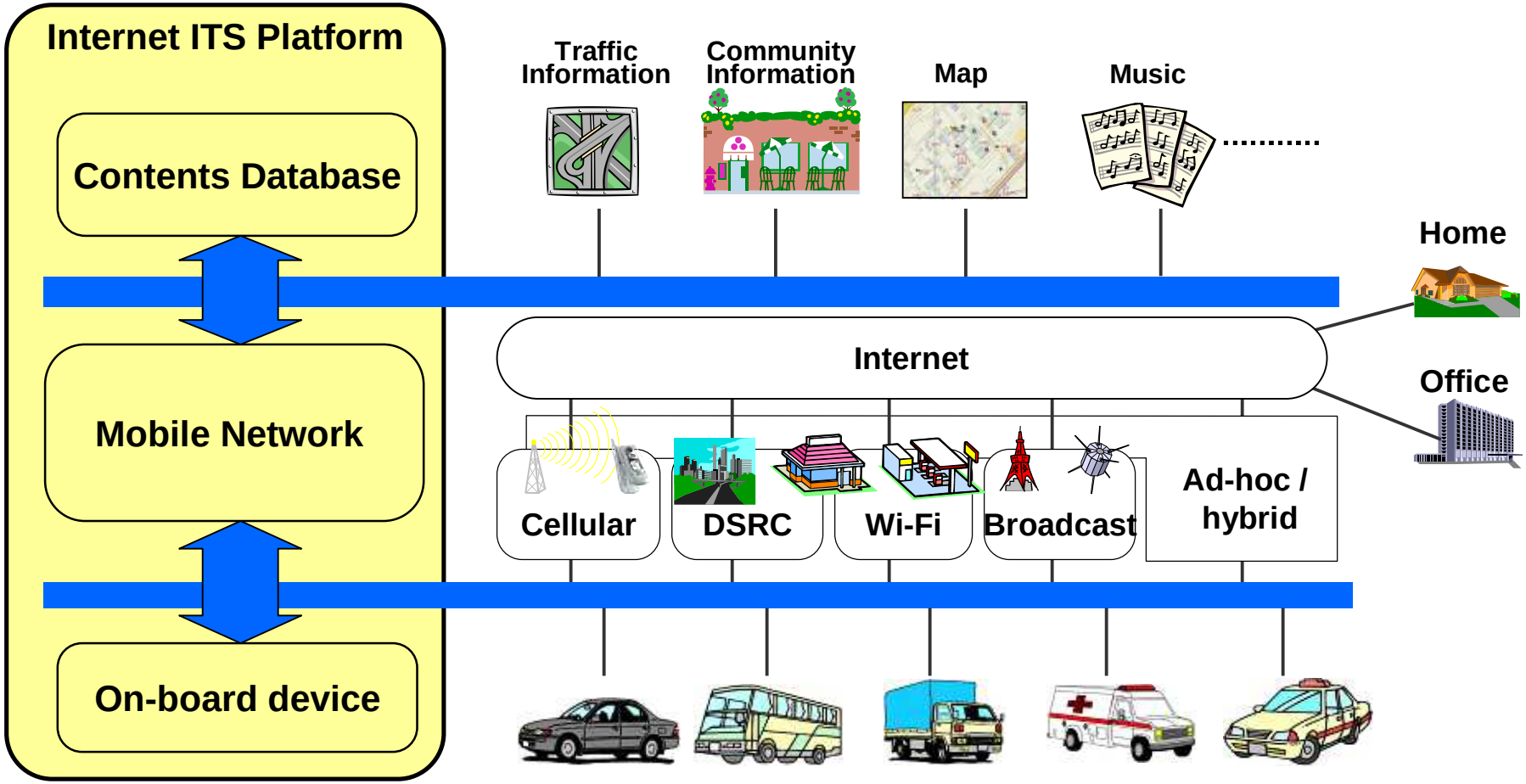


Traffic Signals

Variable Message Signs

Concept of Internet ITS (2001)

Open platform of mobile network, on-board device, and contents to create new paradigm of mobile services with new players



Source: Internet ITS Consortium

Early trials in Nagoya

Taxi probe experiment (Nagoya, 1,500 taxis, 2001-)

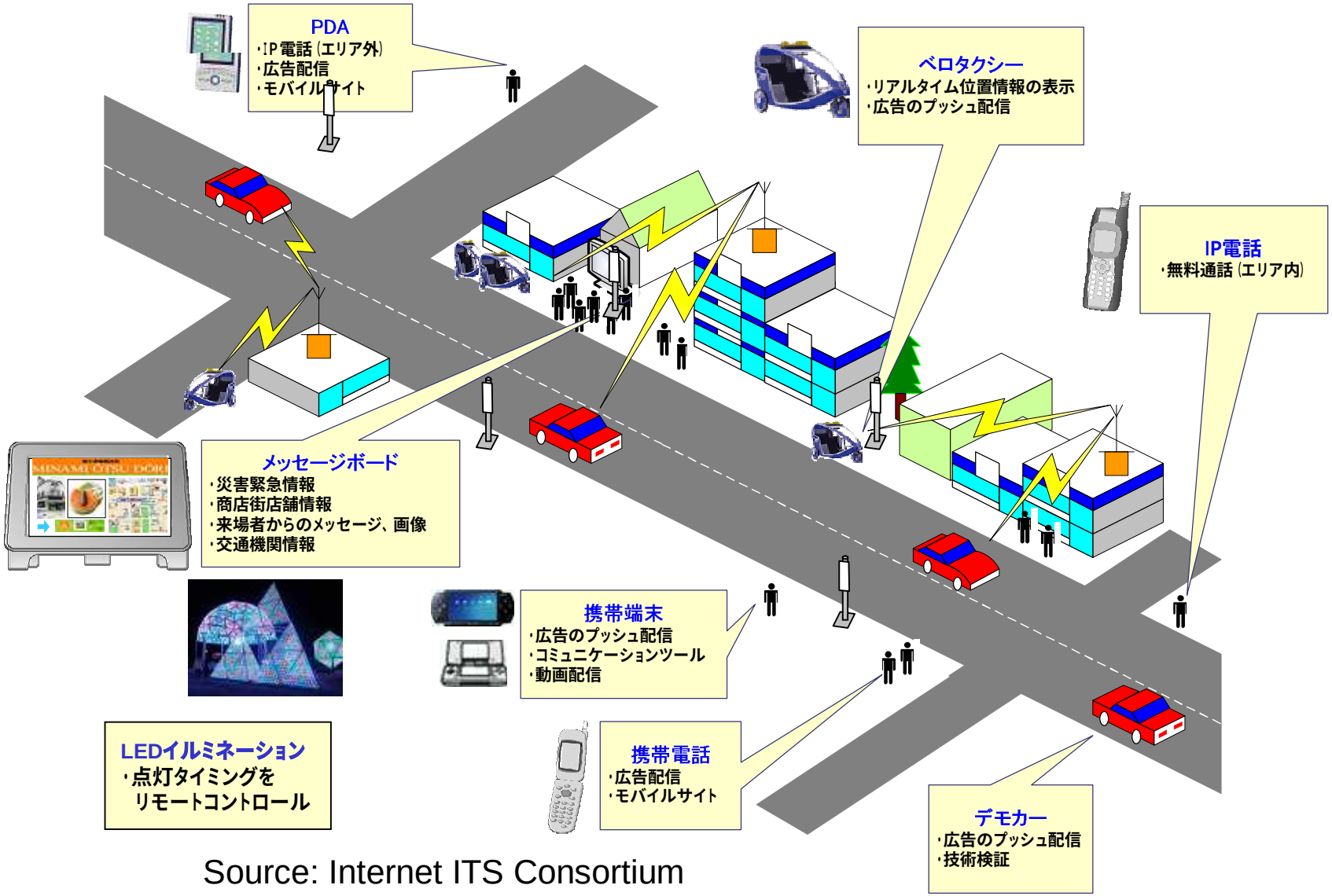
Speed, Congestion

Taxi tracking

Source: Internet ITS Consortium

Demonstration of various services

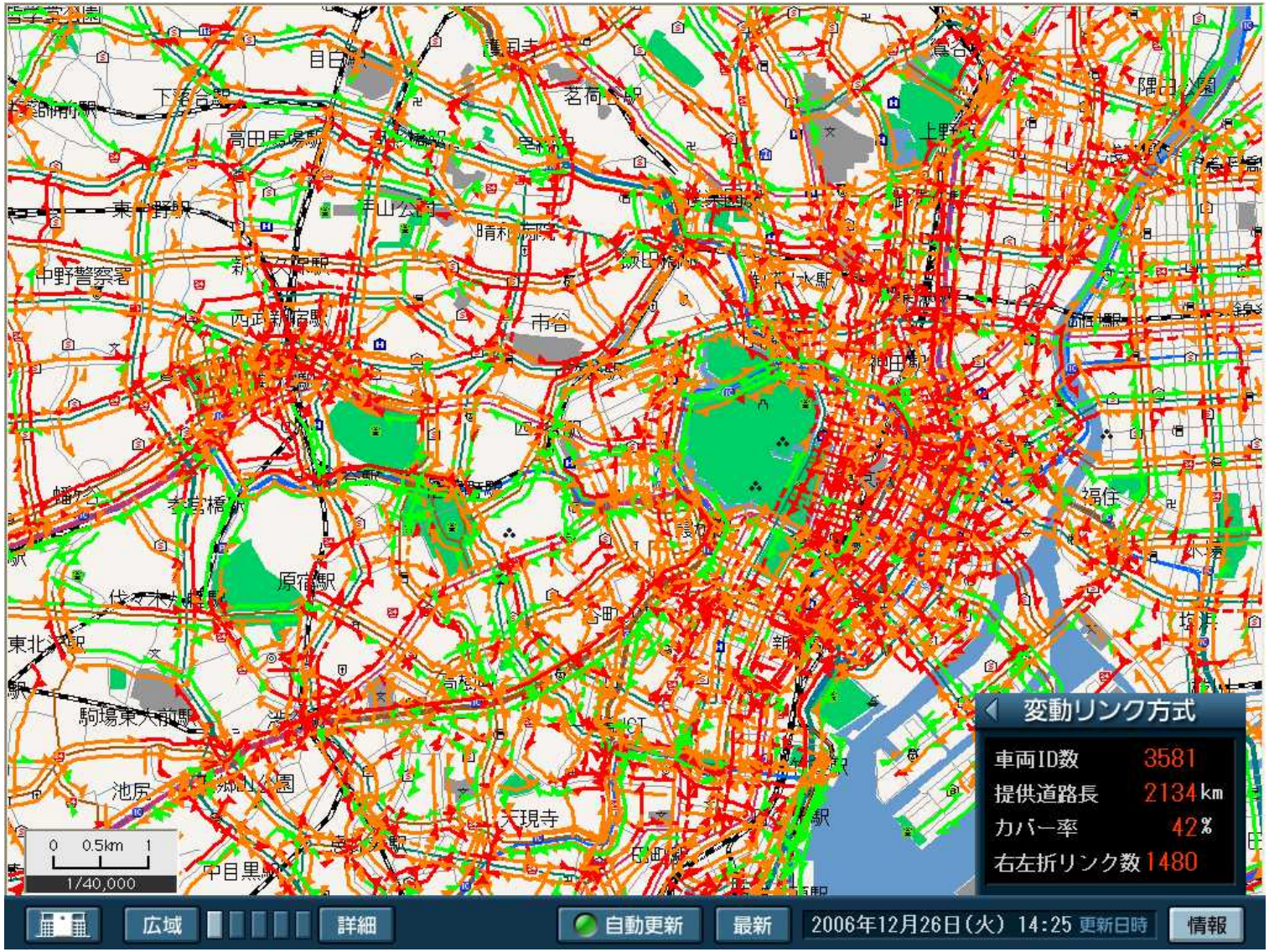
Internet ITS Avenue (Nagoya, 2005)



Source: Internet ITS Consortium

Probe data from taxis

Field Operation Test in Tokyo (8,500 taxis, 2007)



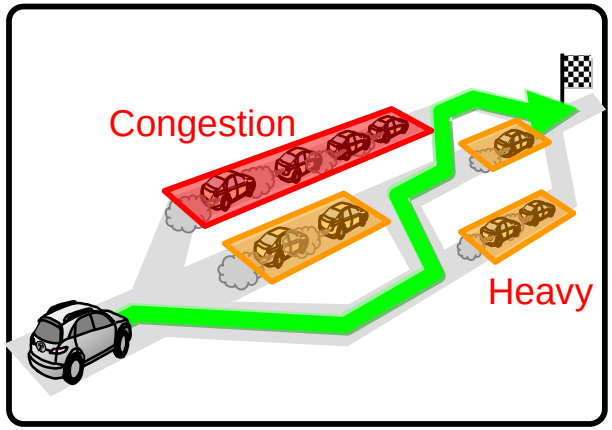
Source: COSE

Dynamic route guidance with probe

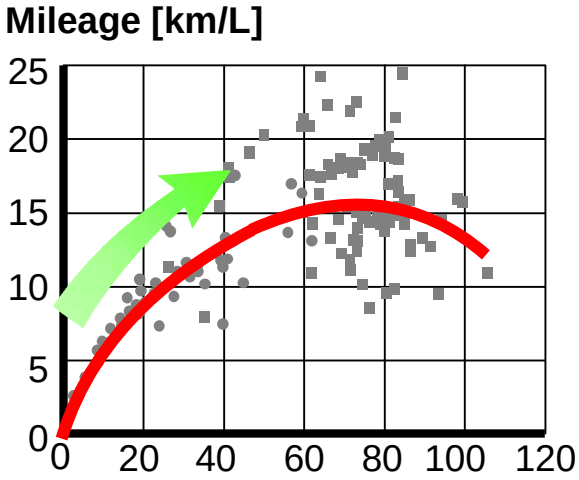
Result of Field Evaluation Test in Tokyo

(CARWINGS by NISSAN)

- Increased traffic date volume by 60% with probe cars
- Reduction of travel time by 20%
- Reduction of CO2 emission by 17%



Travel Time Reduction



CO_2 Reduction

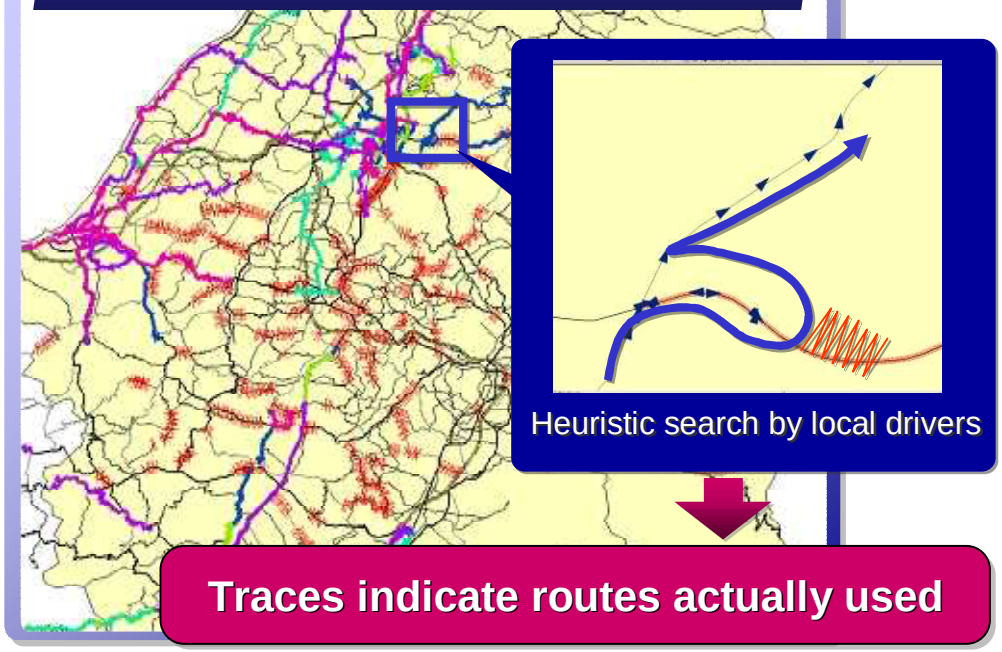
Source: Nissan Motor Co., Ltd.

Contribution to disaster relief operation

Traces of local cars indicate passable routes.

(internavi Premium Club by HONDA)

Mid Niigata Prefecture Earthquake in 2004



From a project at National Research Institute for Earth Science and Disaster Prevention

The Iwate-Miyagi Nairiku Earthquake in 2008

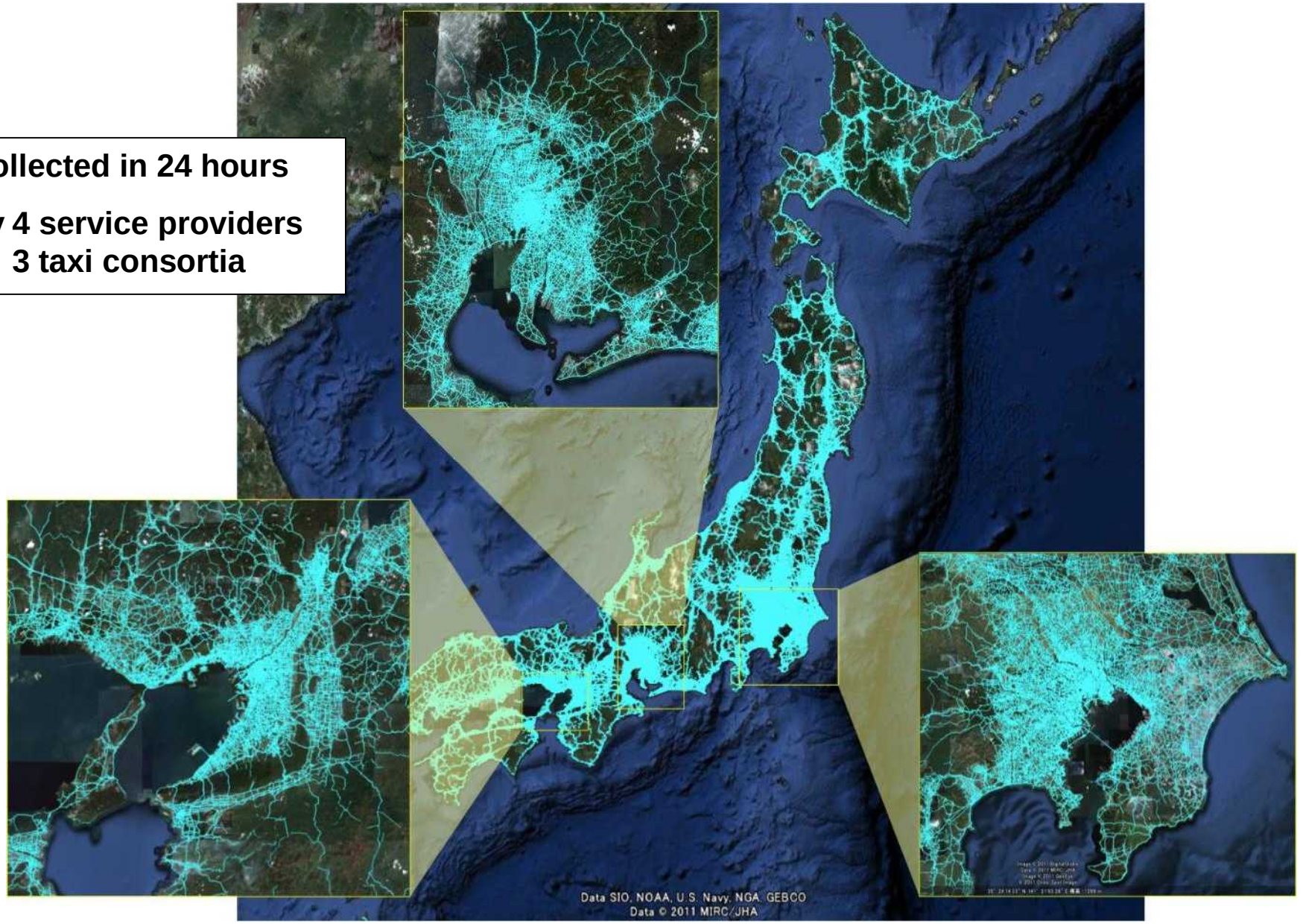
Road closure data: JARTIC, VICS Center

Source: Honda Motor Co., Ltd.

Probe data collected by private sector

Collected in 24 hours

by 4 service providers
3 taxi consortia



Intelligent traffic management system

Conventional Traffic Information System

Fixed sensor data

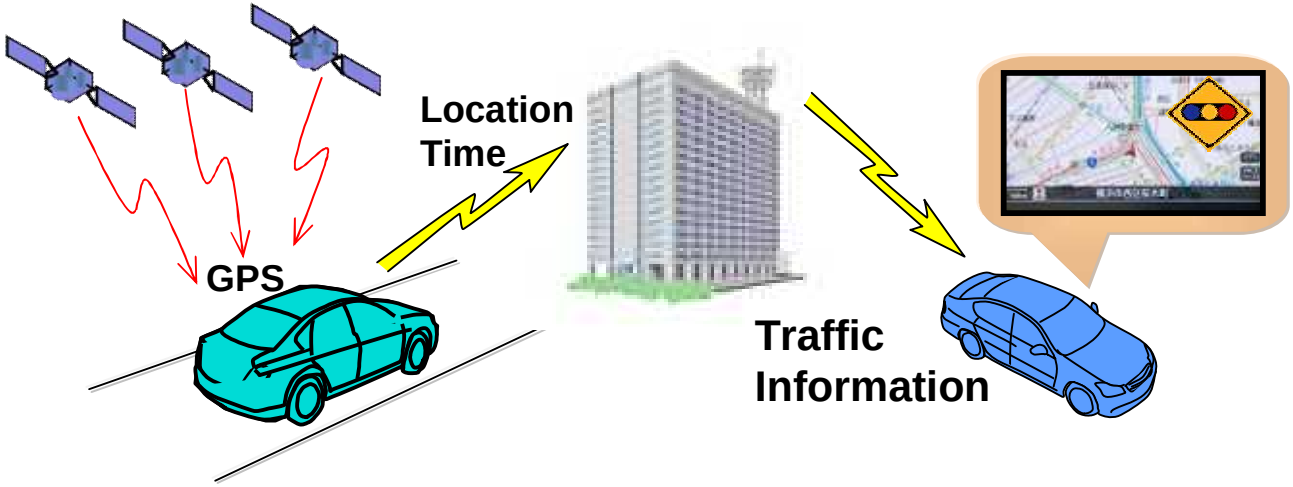
Central Tokyo

Traffic Control Center

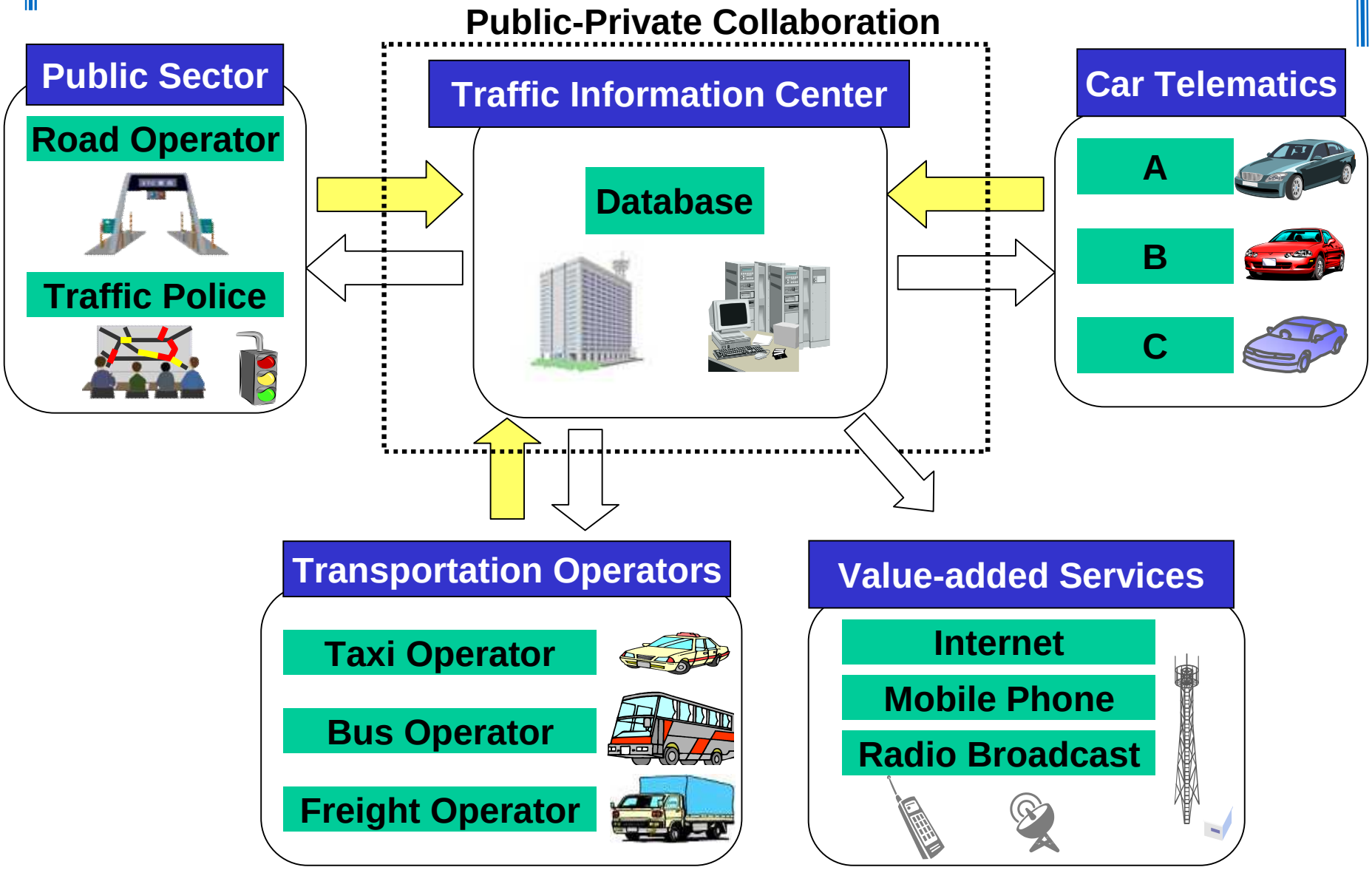
Mobile Device based System

Probe Data

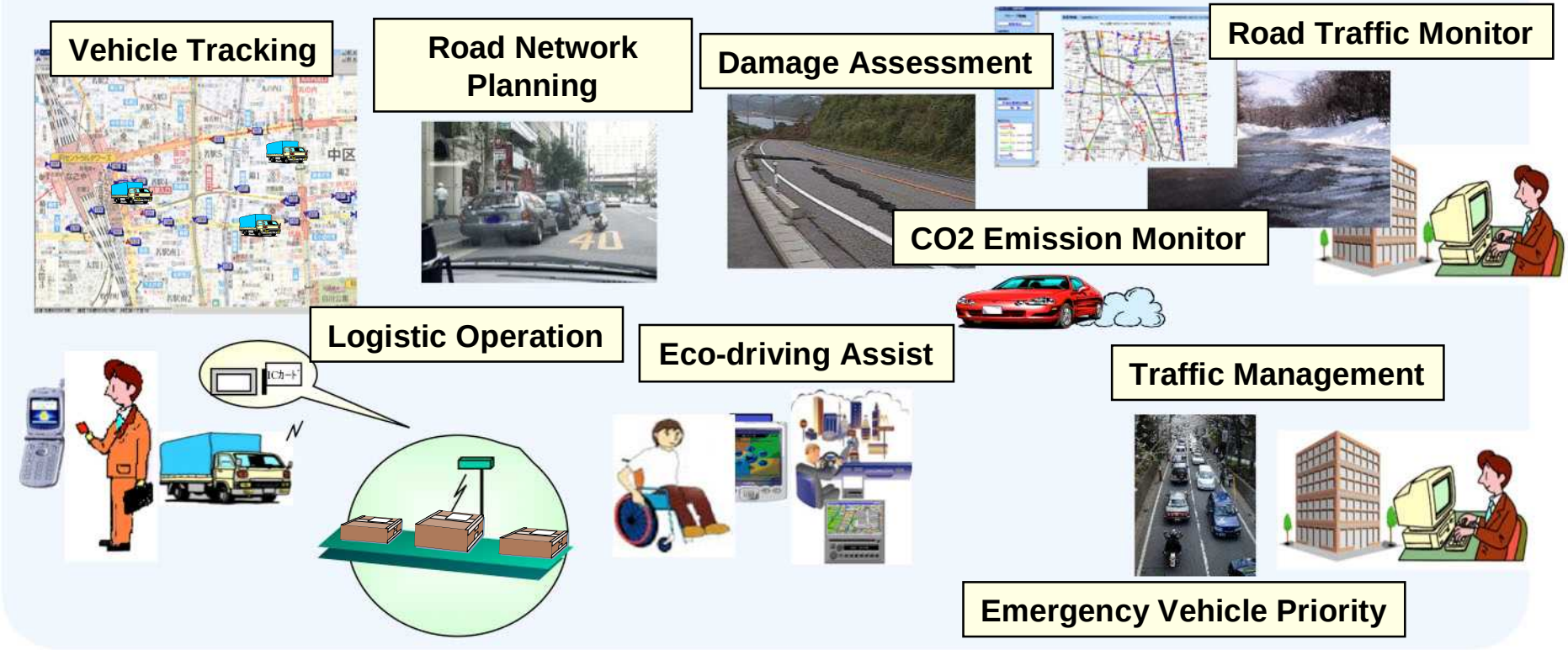
Central Tokyo



Traffic information platform



Anticipated services



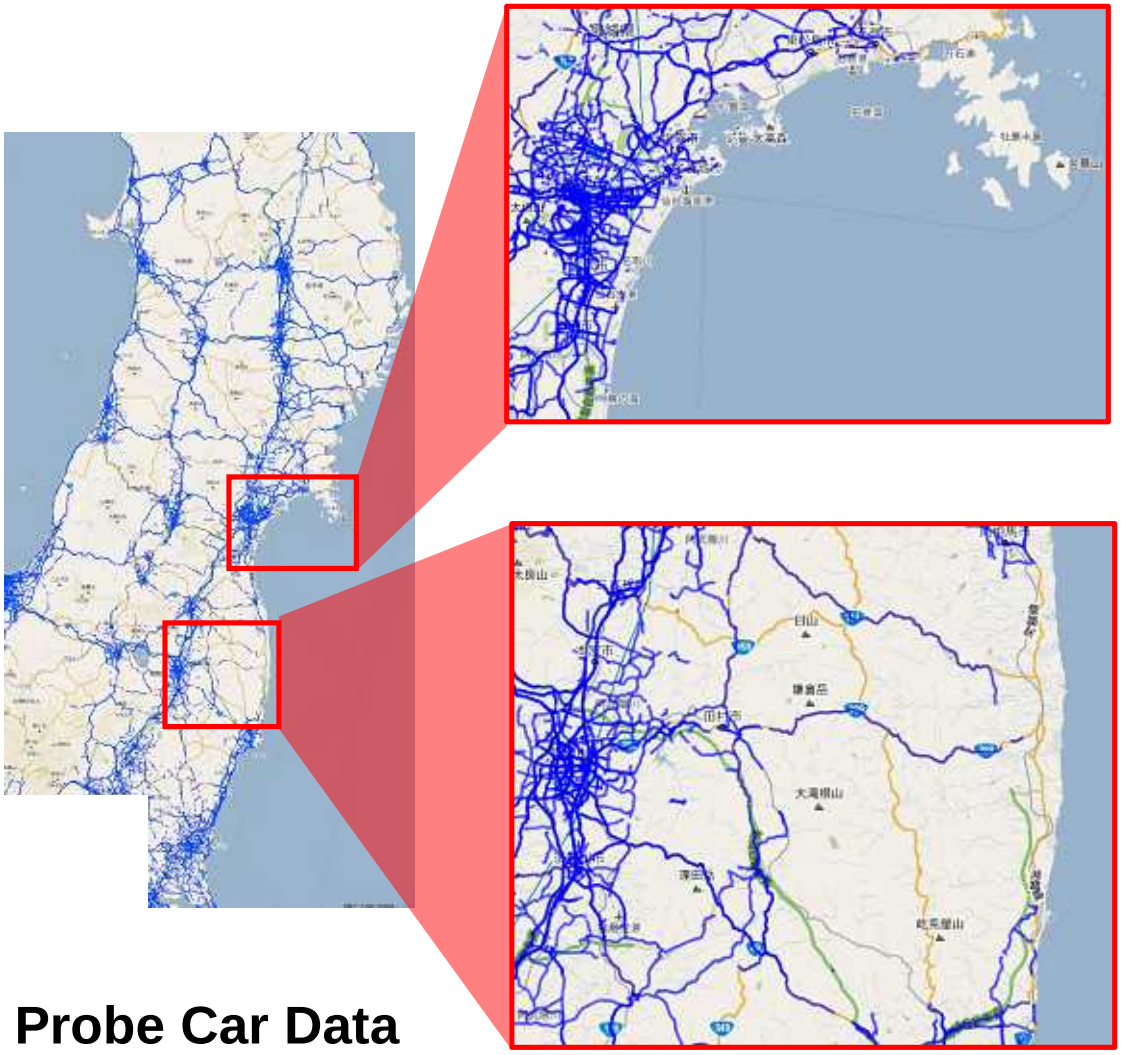
Concept: - Shared database and interface

- Ubiquitous and high speed network connection
- Vehicles as network terminals with physical mobility

Probe data for rescue and recovery

Road Closure Information

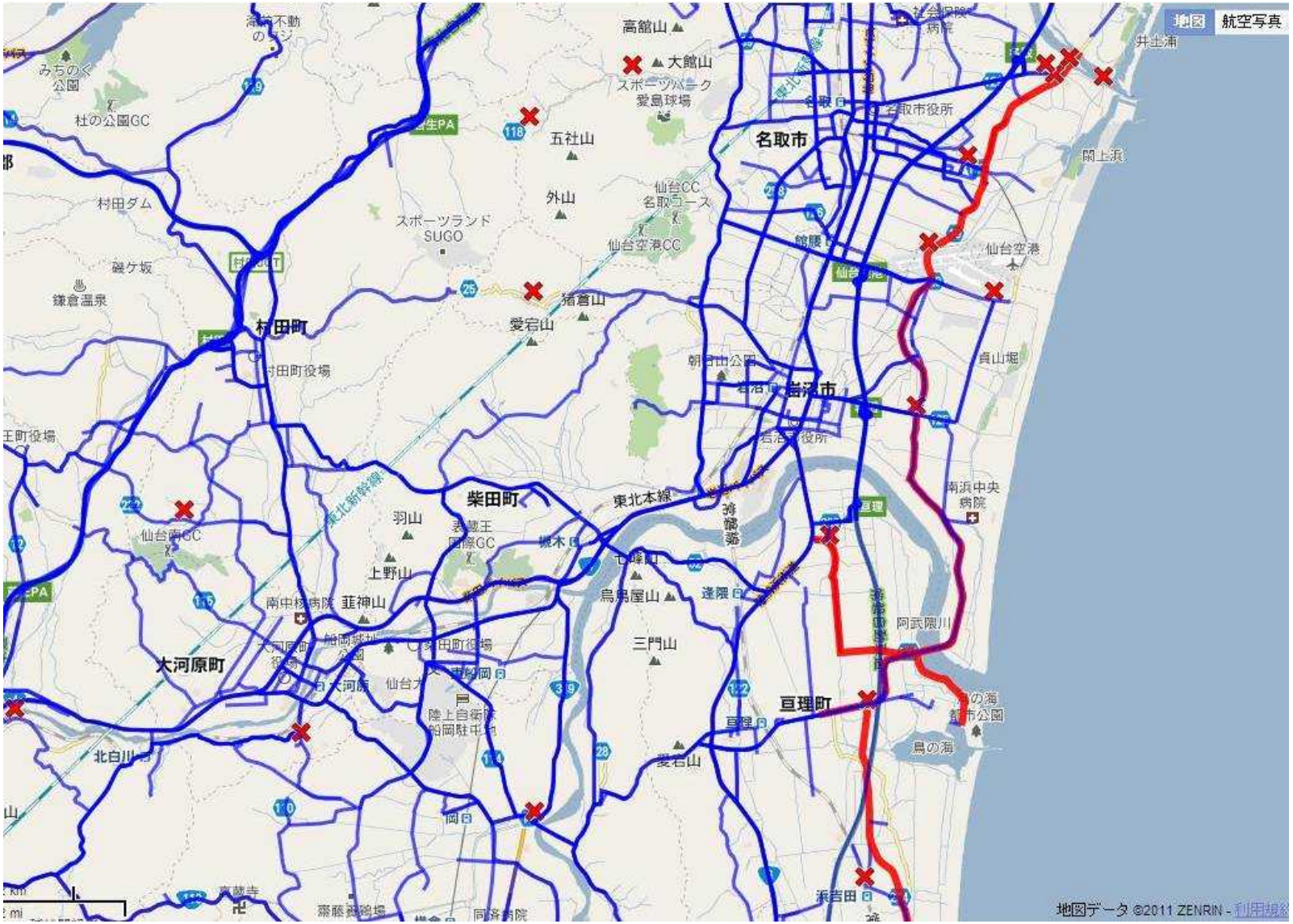
Source:
Ministry of Land, Infrastructure, Transport and Tourism



Probe Car Data

Source: Honda, Pioneer, Toyota, Nissan

Probe data with road closure information



Networked people help each other

Crisis Response website opened in two hours by Google Japan

Service	Contents
Person Finder	All data entered by individuals become publicly available, and viewable and usable by anyone.
Shelter Resident Lists	Emailed photos are uploaded to a photo album and scanned to be made searchable in Person Finder.
YouTube Message	Video messages from the evacuees are shared at the YouTube site.
Shelter information	Shelter locations, water and food distribution, and local resources portal map are shared.
Probe Car Data Map	Routes actually used on the previous day are shown on the map.

Source: Nippon Keizai Shinbun, April 3, 2011

Dependable platform

for both emergency and daily operation

1. Information hub designed and operated by communities

Open access to the vital information by the community leaders

Technical and financial assistance for municipal government

Framework for cooperation and mutual support among communities

2. Platform for collaboration with commercial services

Open still secure information management and access control

Means for the general public to verify reliability of the information

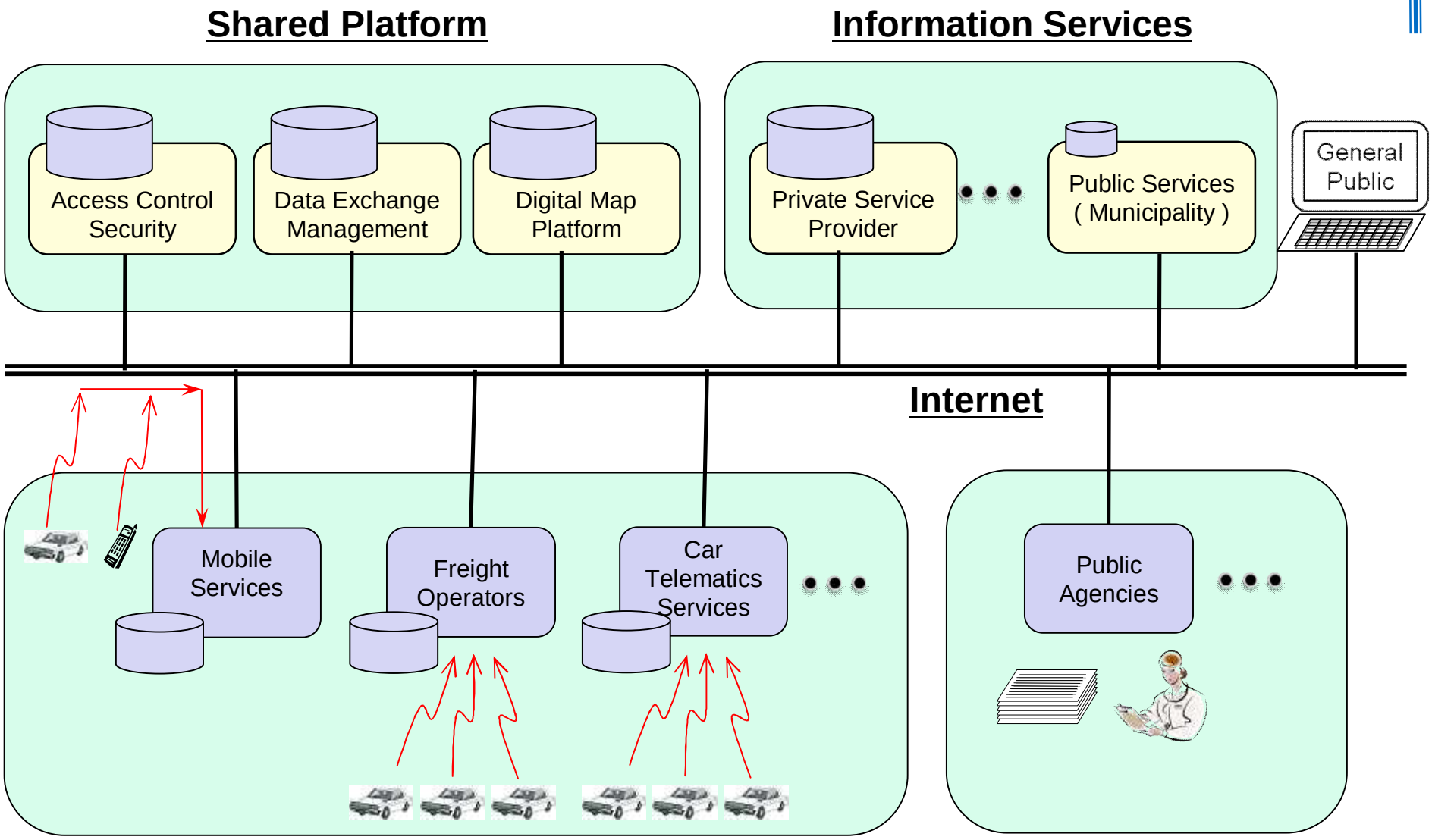
3. Effective daily services dependable in emergency

Integrated and redundant information services across the sectors
- Government services, mobile phone, social network, etc.

Utilization of procurement and delivery system in private sectors
- Convenience store and on-line shop operation

Institutional arrangement for cooperation and regular drills

Proposed framework



Integrated approach

	Disaster	Green Mobility	Energy
Society	Public investment	Multimodal transportation	Smart grid system
Community	Close ties with neighbors	Traffic management Connected vehicles	CEMS: Cluster or Community energy management system
Individuals	Awareness Skills to survive	Low emission vehicles Eco-driving	HEMS: Home energy management system BEMS: Building energy management system

To maximize collective effectiveness:
integrated approach with shared information platform