



# **Policy for Cooperative ITS**

**- Japan's approach for road vehicle cooperation  
of safety and environment -**

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- 1. ITS Policy Measures in Japan**
- 2. Evolution of cooperative ITS**
- 3. Cooperative vehicle safety system enters the field operation phase**

# Current situation of traffic problems

## 1. ITS Policy Measures in Japan



Go for it  
Together with us

SMARTWAY 2007

- ITS will use IT to resolve problems that could not be fully corrected by conventional policy measures.

### Traffic congestion

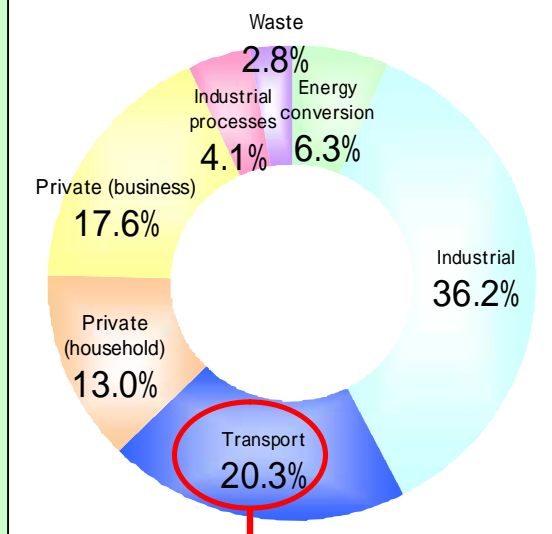


Congestion status of Tokyo Metropolitan Expressway



### Environmental burden

#### Carbon dioxide emissions



Train - Airplane -  
Coastal ship

**90% comes  
from vehicles.**



### Traffic accidents



Chuo Expressway

# Spread of car navigation systems, VICS, and ETC

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- A cumulative total of 26M car navigation systems, 18M VICS units, and 17M ETC units have been shipped. (Total vehicle ownership is 79 M.)

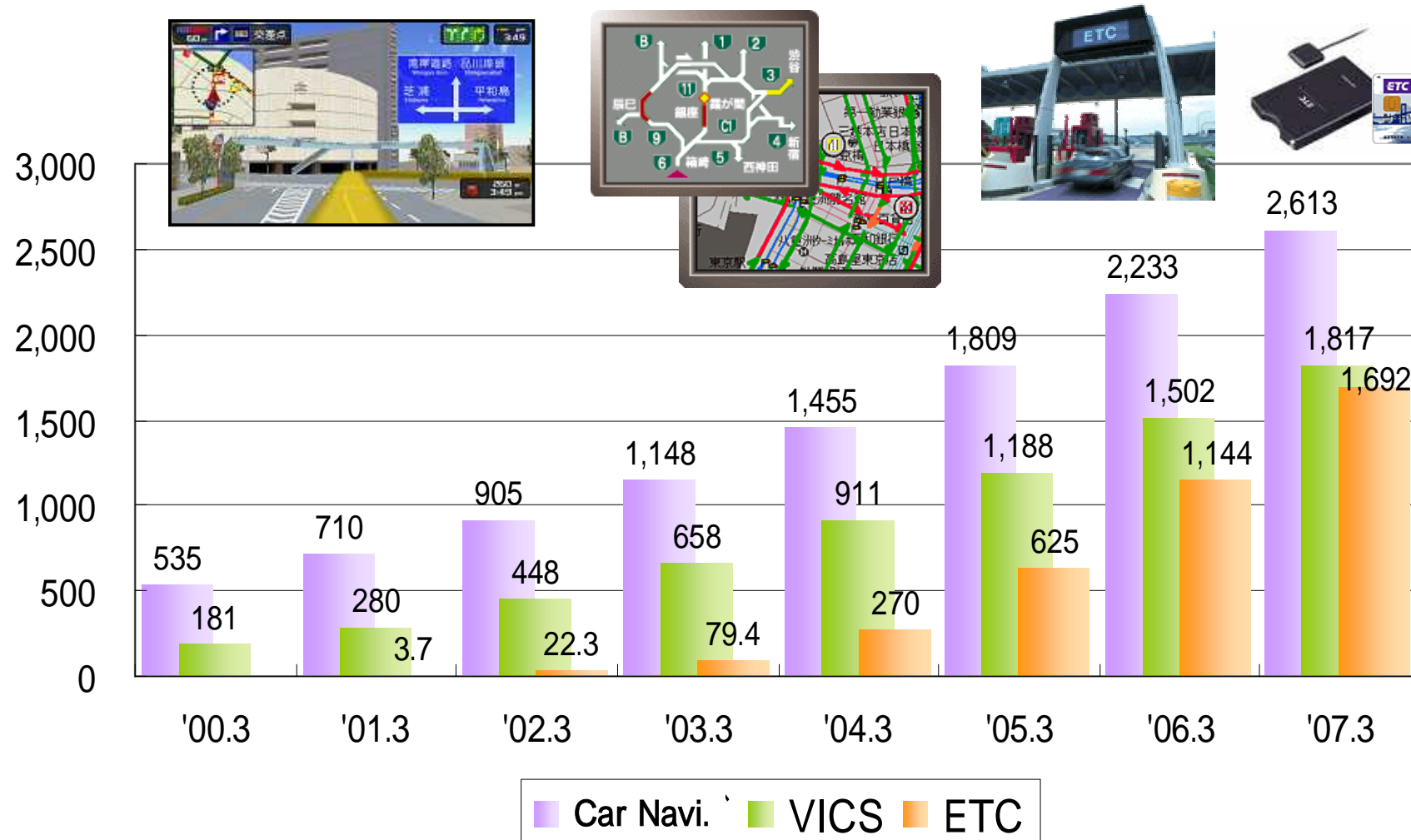


Fig. Cumulative total numbers of car navigation systems, VICS, and ETC units shipped

# Emerging benefits: VICS

## 1. ITS Policy Measures in Japan



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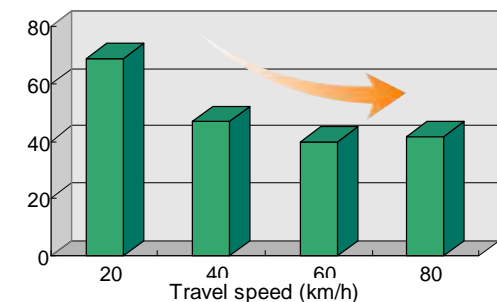
SMARTWAY 2007

- Appropriate route guidance ensures smoother traffic flow in a limited road network.

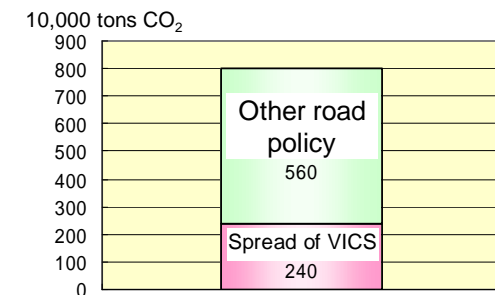
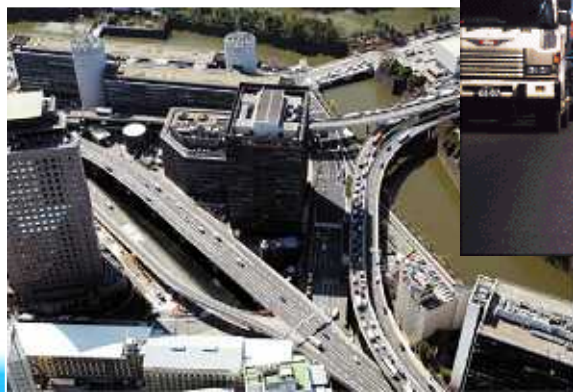


 Congestion  
 Jam  
 Smooth

### CO2 emissions Travel speed



VICS will produce a reduction of 2.4M tons in CO2 emissions by 2010



Reduction in carbon dioxide emissions  
Fig. Reduction in carbon dioxide emissions under road policy

# Emerging benefits: ETC

## 1. ITS Policy Measures in Japan



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Together with US

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- 30% of congestion on expressways occurs at tollgates.
- Congestion at tollgates on the Tokyo Metropolitan Expressway has been eliminated through an increased rate of ETC utilization.

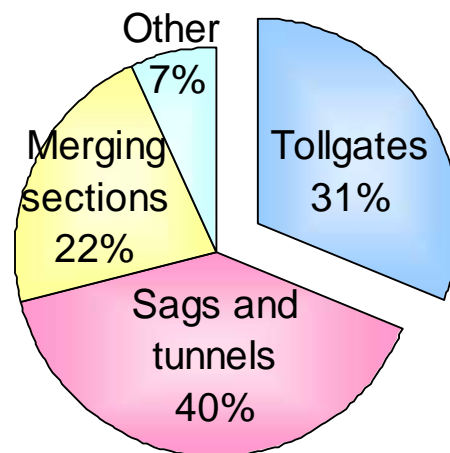


Fig. Cause of traffic congestion on expressways

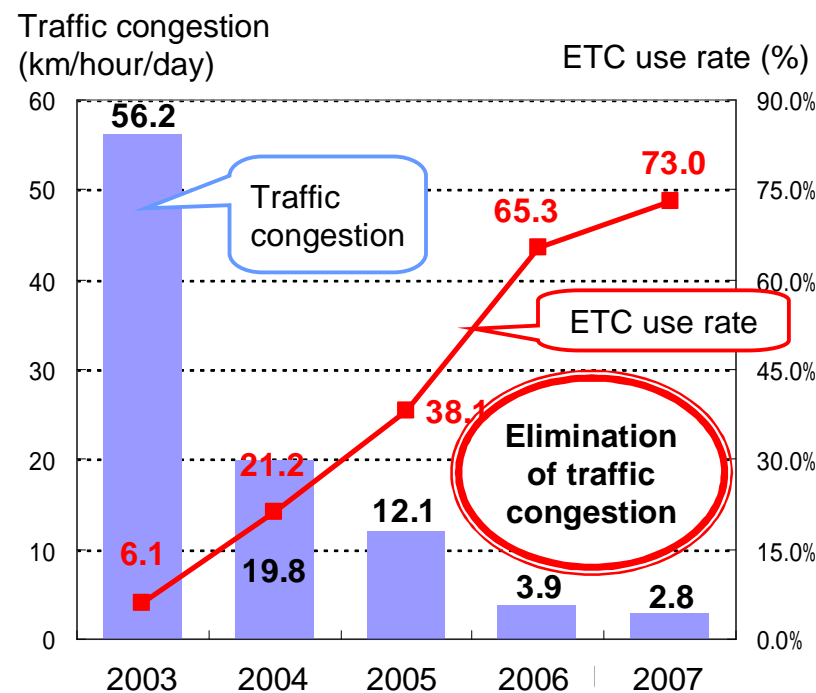


Fig. Status of traffic congestion

(10,000 t-CO<sub>2</sub>/year)

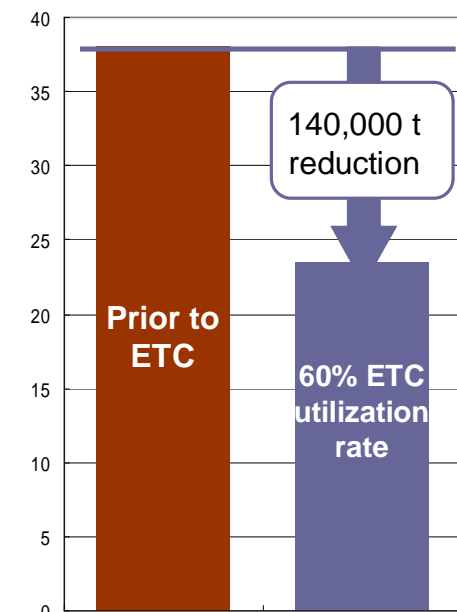


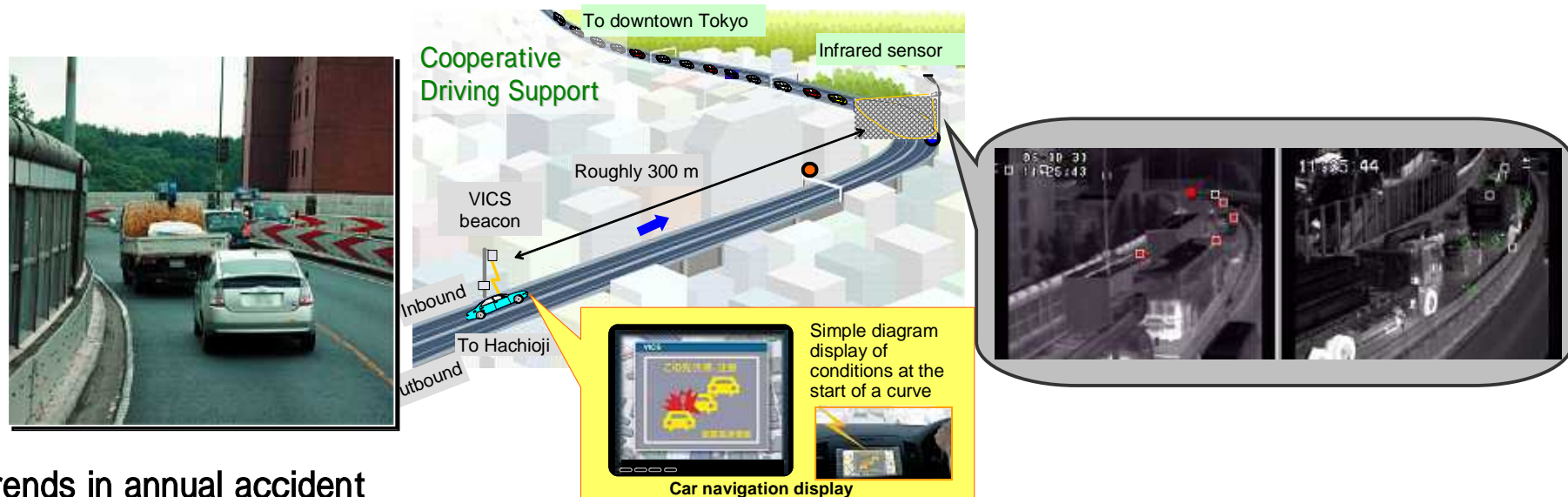
Fig. ETC utilization rates and reduction in carbon dioxide emissions

# Emerging benefits: Safety

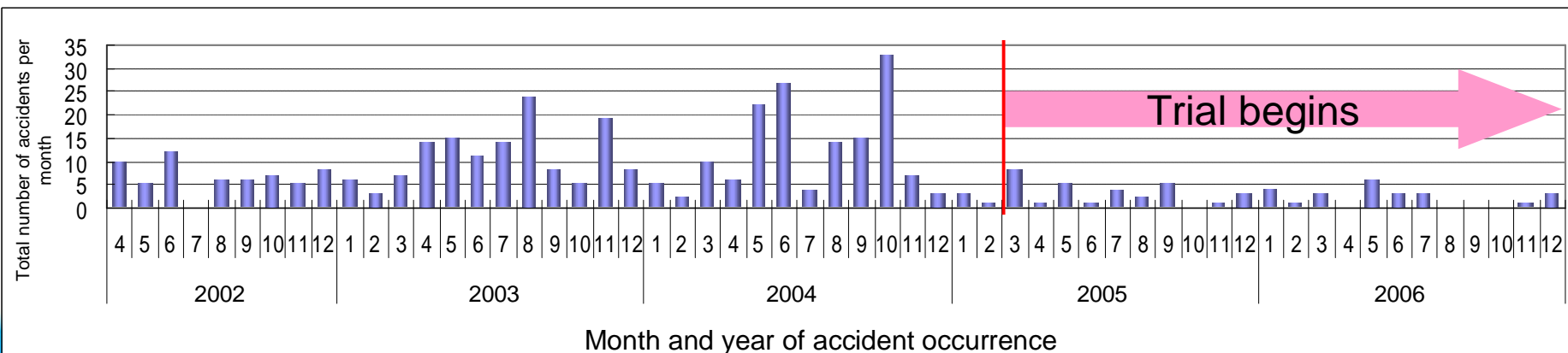
## 1. ITS Policy Measures in Japan



- Roadside sensors are used to detect stopped vehicles beyond a curve, and drivers are alerted by road-vehicle communications.
- Accidents have been reduced by about 80%, B/C=10.



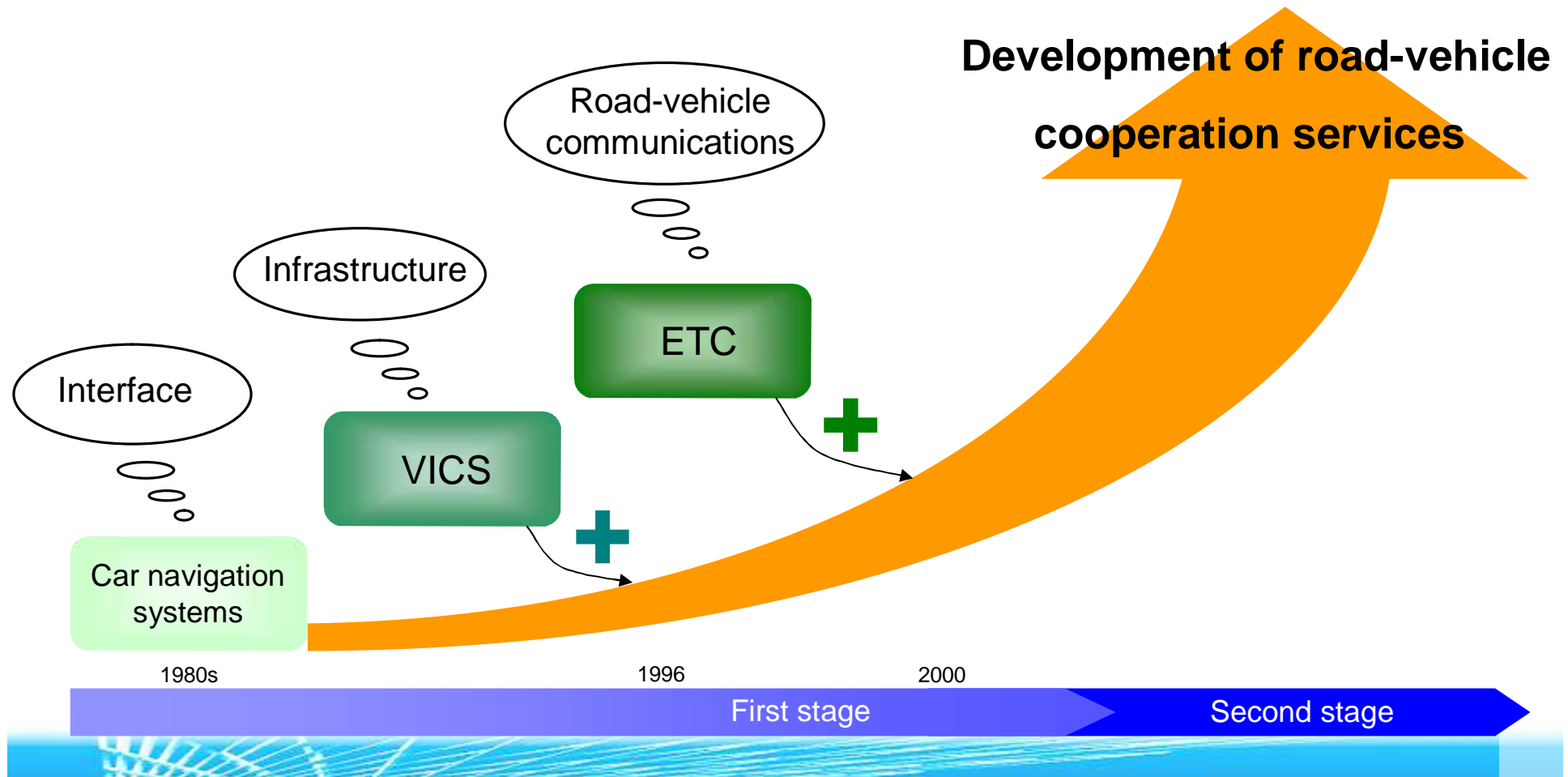
Trends in annual accident



# Stepwise development



- We are building a platform for the realization of road-vehicle cooperation services through stepwise development.



# Open platform

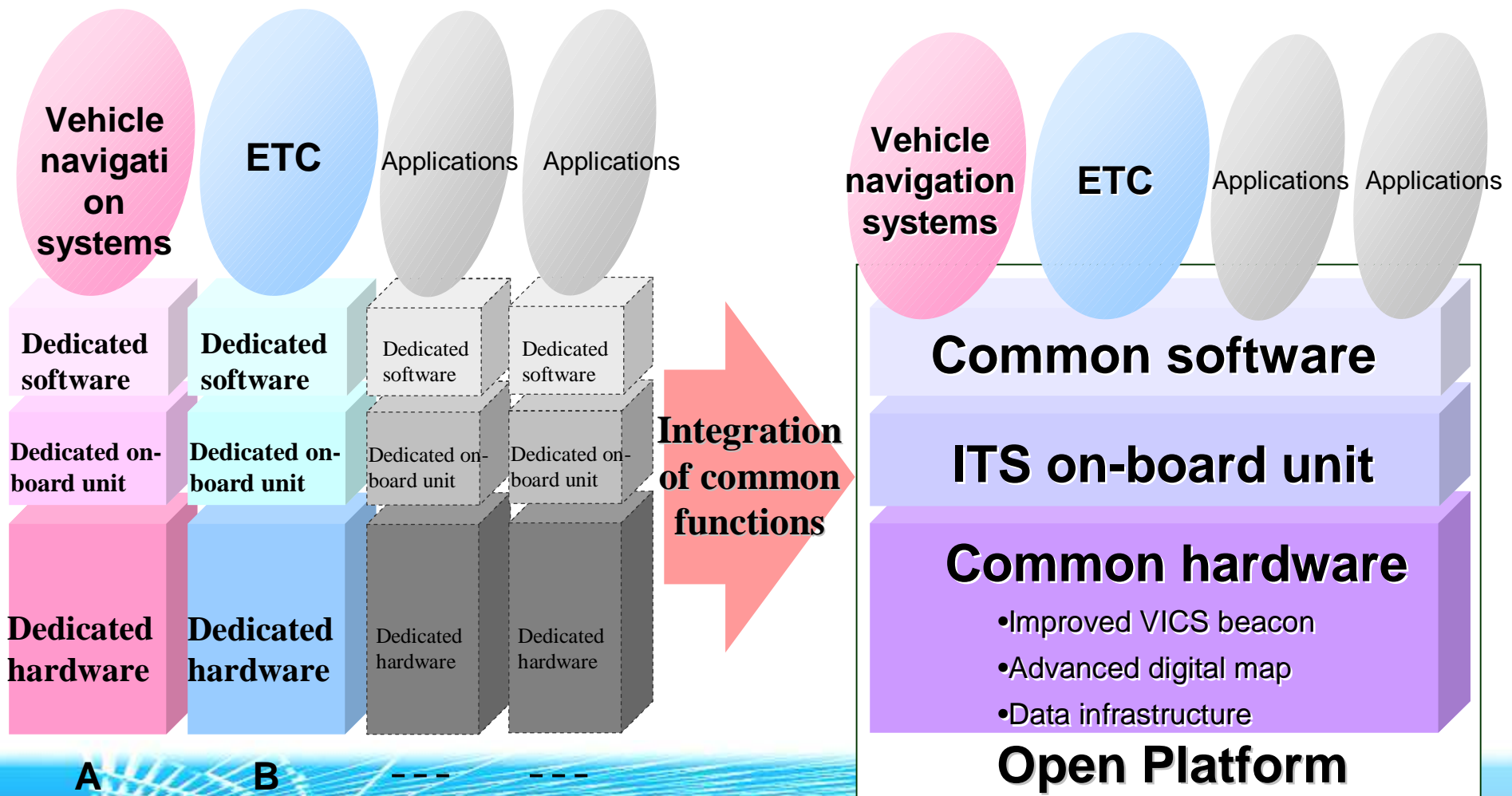
## 2. Evolution of Cooperative ITS



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- We are promoting an open platform to integrate the common functions needed to support a variety of applications.



# ITS on-board units

## 2. Evolution of Cooperative ITS



- A variety of applications can be provided using a single OBU.
- These OBU use a communications format which has been popularized through ETC, and a HMI that has been popularized through car navigation systems.



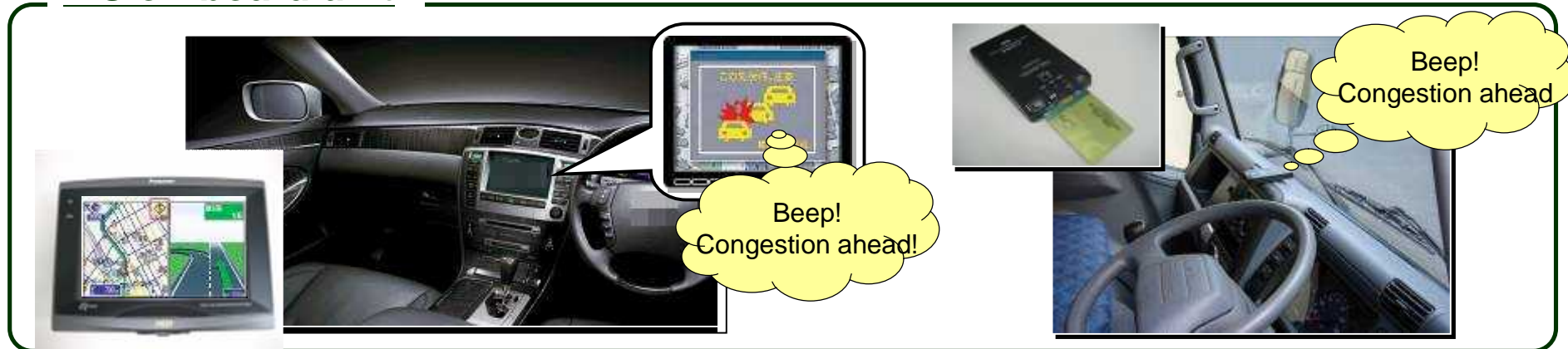
# Next-generation road services

## 2. Evolution of Cooperative ITS



- Two types of ITS OBU : Single ITS OBU provide information as audio only; and ITS OBU linked with car navigation systems provide information in both audio and visual form.

### ITS on-board unit



### Driving assistance systems

Providing information on obstacles ahead



Merging assistance



Providing information on conditions ahead



# Achieving the world's safest road transportation

3. Cooperative vehicle safety system enters the field operation phase

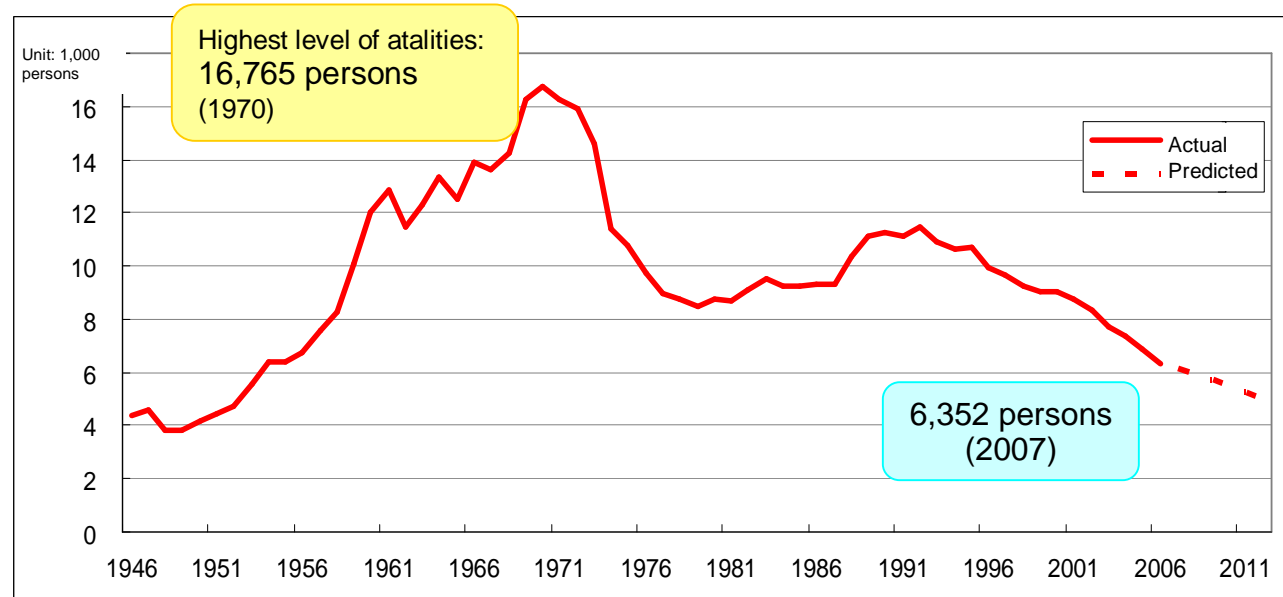
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- Our goal is to reduce the number of traffic accident fatalities to fewer than 5,000 by the end of 2012
- The world's safest road transportation through Cooperative driving safety support systems

## New IT Reform Strategy

Achieving the world's safest road transportation:

- Reducing traffic accident fatalities to fewer than 5,000 -



Reducing traffic accident fatalities to fewer than 5,000 by the end of 2012FY!  
(IT Strategic Headquarters)

Trends in traffic accident fatalities

# Public road testing

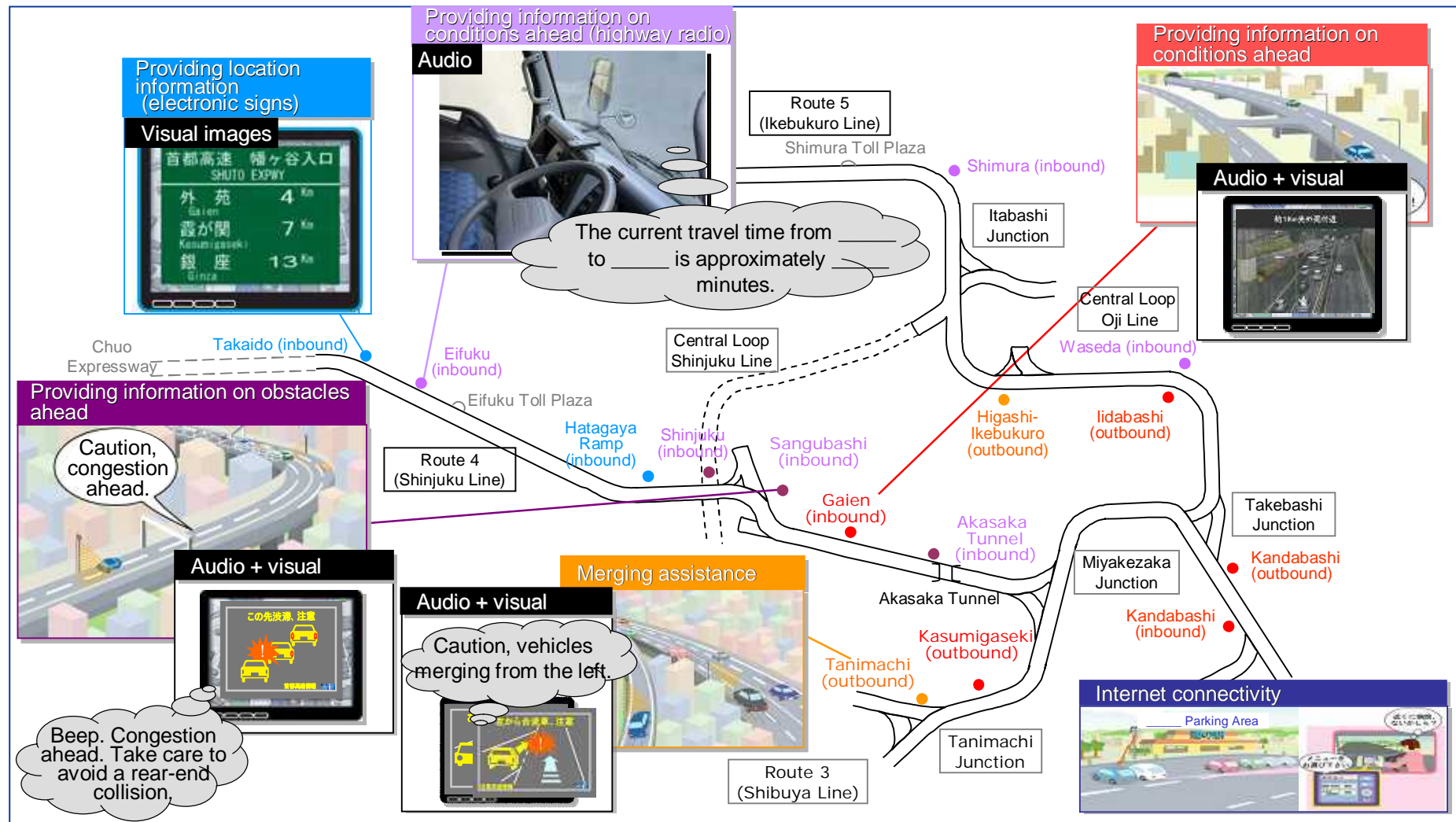
## 3. Cooperative vehicle safety system enters the field operation phase



Go for it  
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- Testing began in May 2007 with the cooperation of 31 private companies



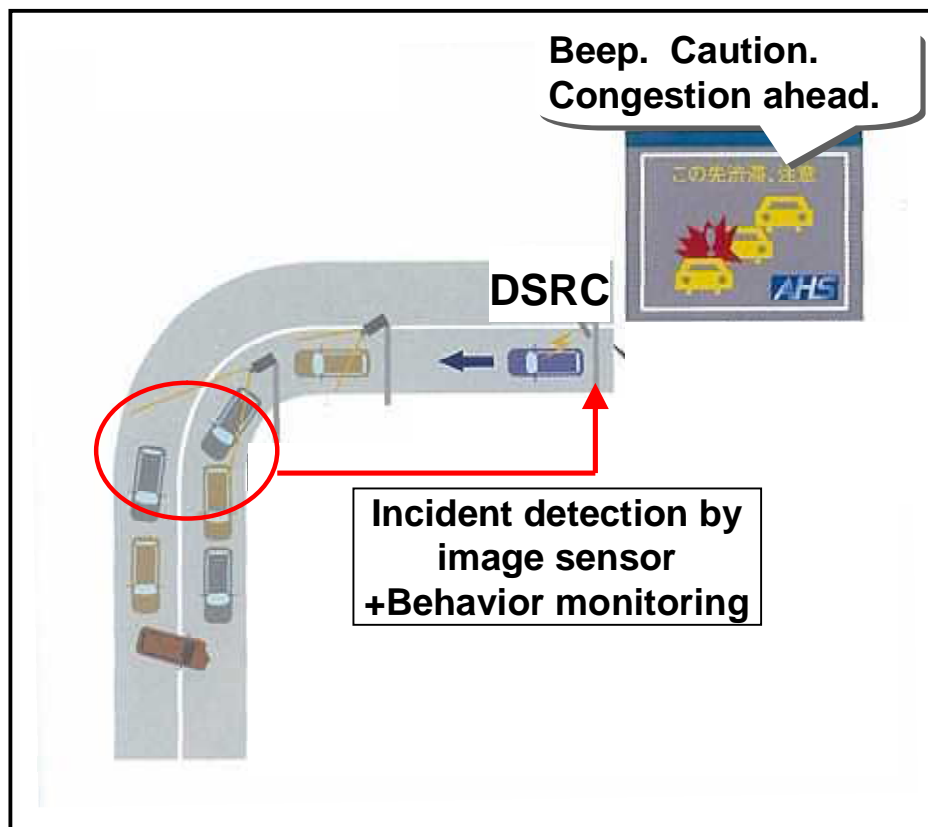
## Providing information on obstacles ahead



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- Roadside sensors detect stopped vehicles beyond a curve.
- Drivers are alerted using pictures and voice announcements.



# Support for merging

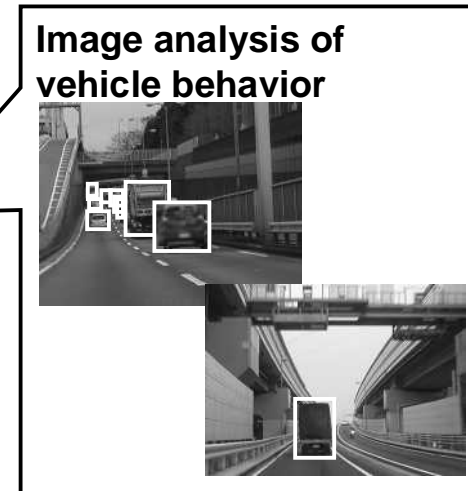
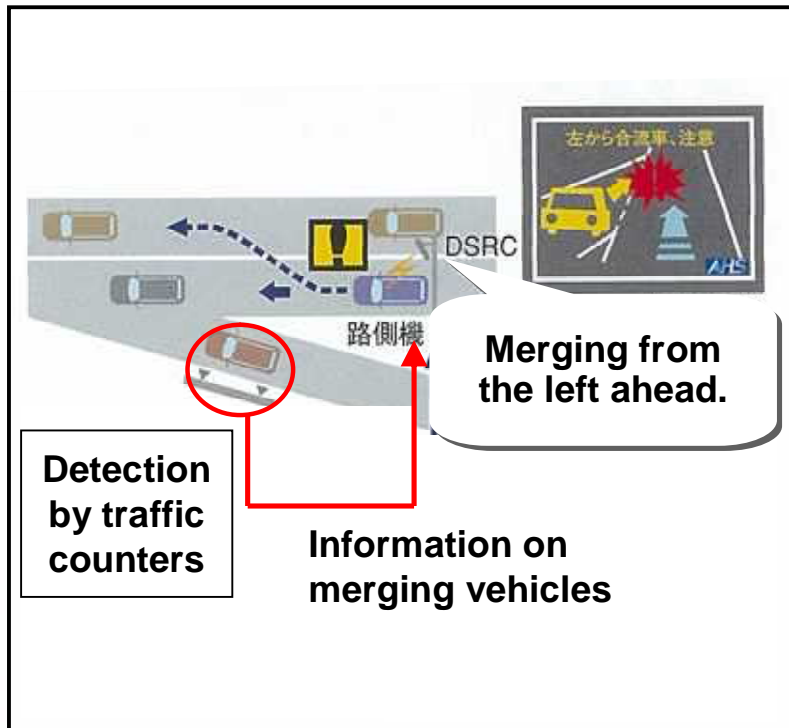
## 3. Cooperative vehicle safety system enters the field operation phase



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- The presence of vehicles approaching the merge point is detected from the roadside



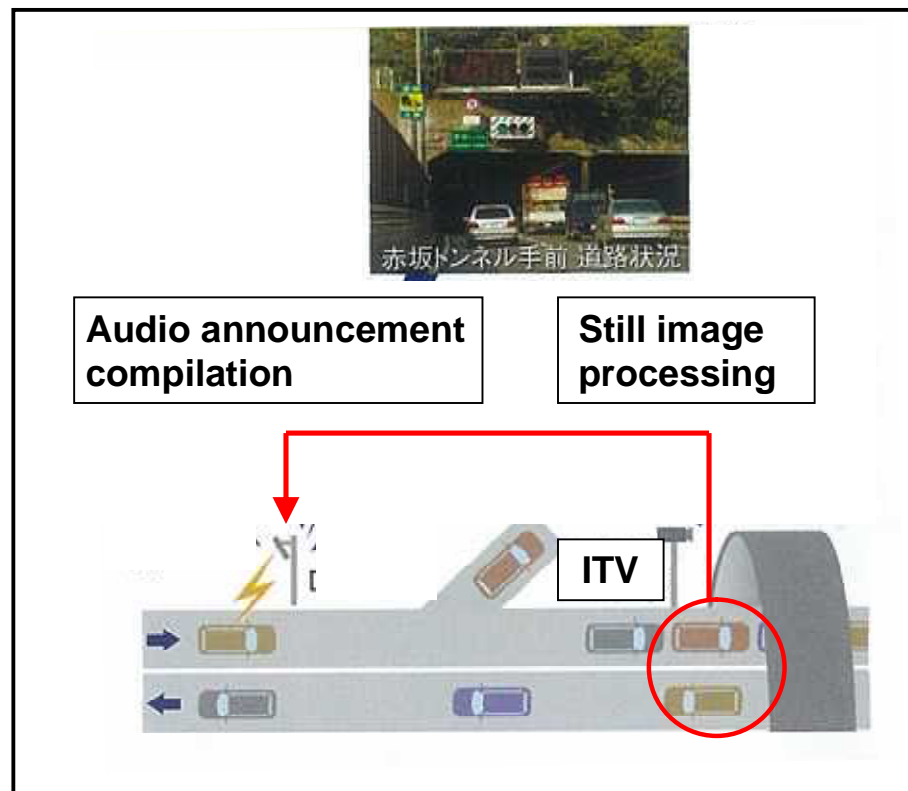
## Providing information on conditions ahead

3. Cooperative vehicle safety system enters the field operation phase

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- Camera images of tunnels and locations of frequent congestion are provided as still images



# Smartway2007 demonstration



## SMARTWAY 2007

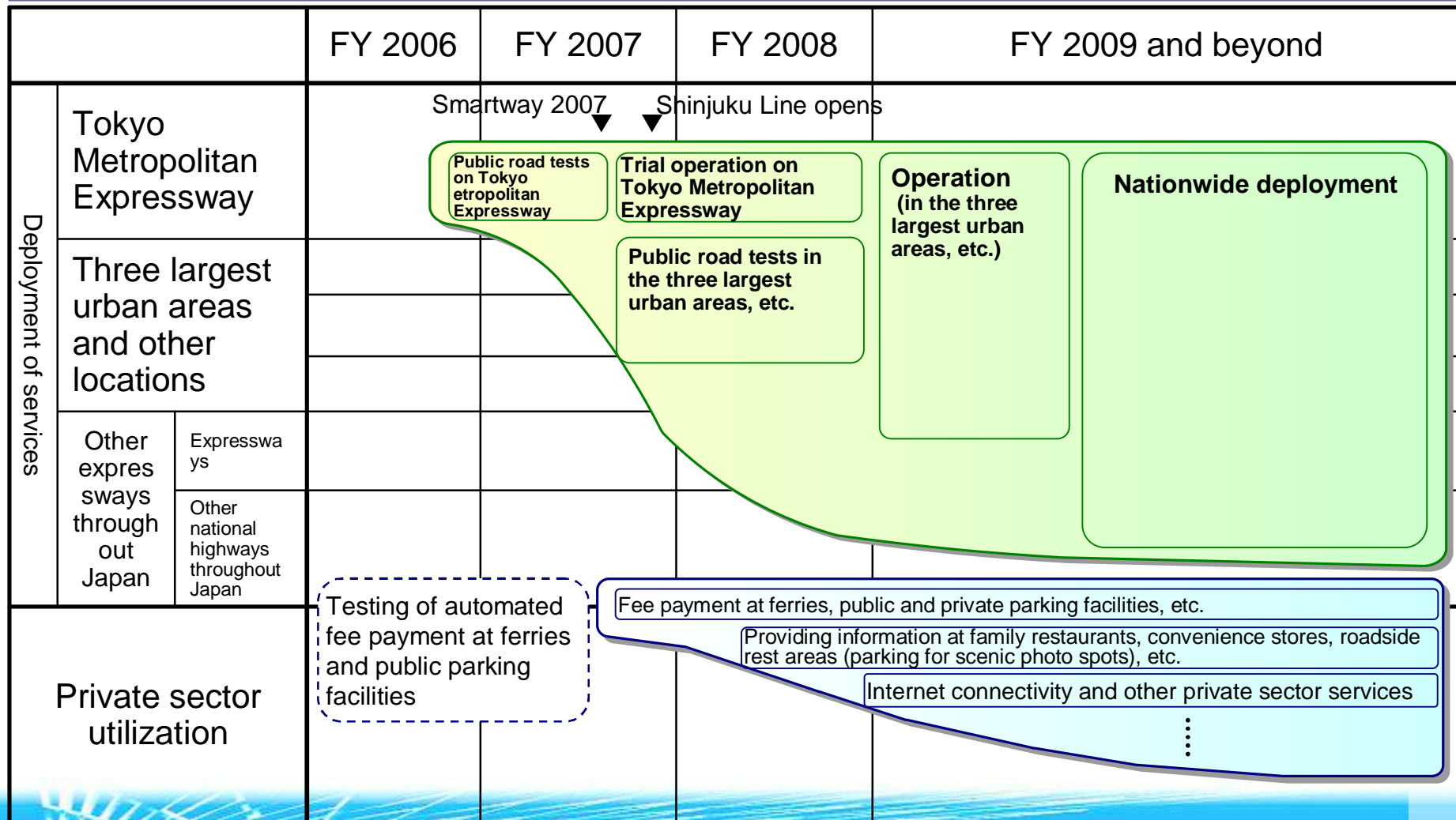
Technical Tour in Tokyo  
Oct. 15-17, 2007



# Scenario for the deployment of new road-vehicle cooperation systems



- Active promotion of systems to support safe driving, including public road tests in Japan's three largest urban areas, based on test results.
- Successive deployment of other ITS services as well.



- 1. Traffic accidents are a problem common to every country in the world. Japanese experience and technical expertise can help to reduce traffic accidents worldwide.**
- 2. Integration through open platforms will bring about widespread use of the system and lower costs.**
- 3. Public-private sector cooperation is indispensable for deploying a safe system that integrates various road/vehicle systems.**

**Thank you**

