eSafety
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Japanese Awareness Activities on the Next Generation ITS Services

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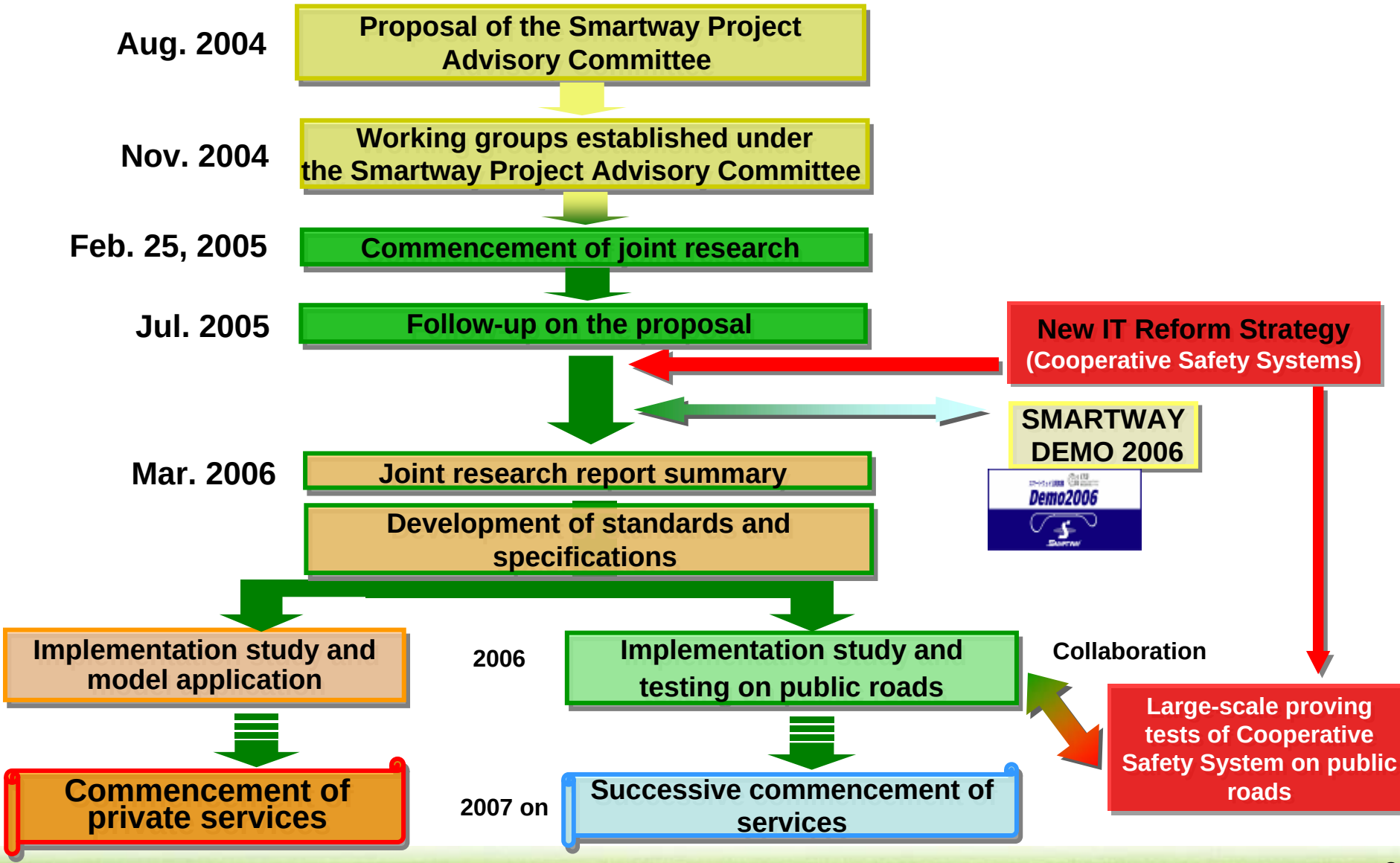
1. Work Flow on the Second Stage ITS

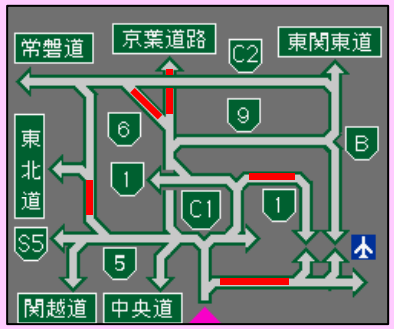
Flow of Realization



1. Work Flow on the Second Stage ITS

Service goals

(1) Information provision services along roadways



Provision of easily understood road traffic information

(2) Information connection services at roadside rest area

Providing road information at rest areas, service areas, parking areas, etc.

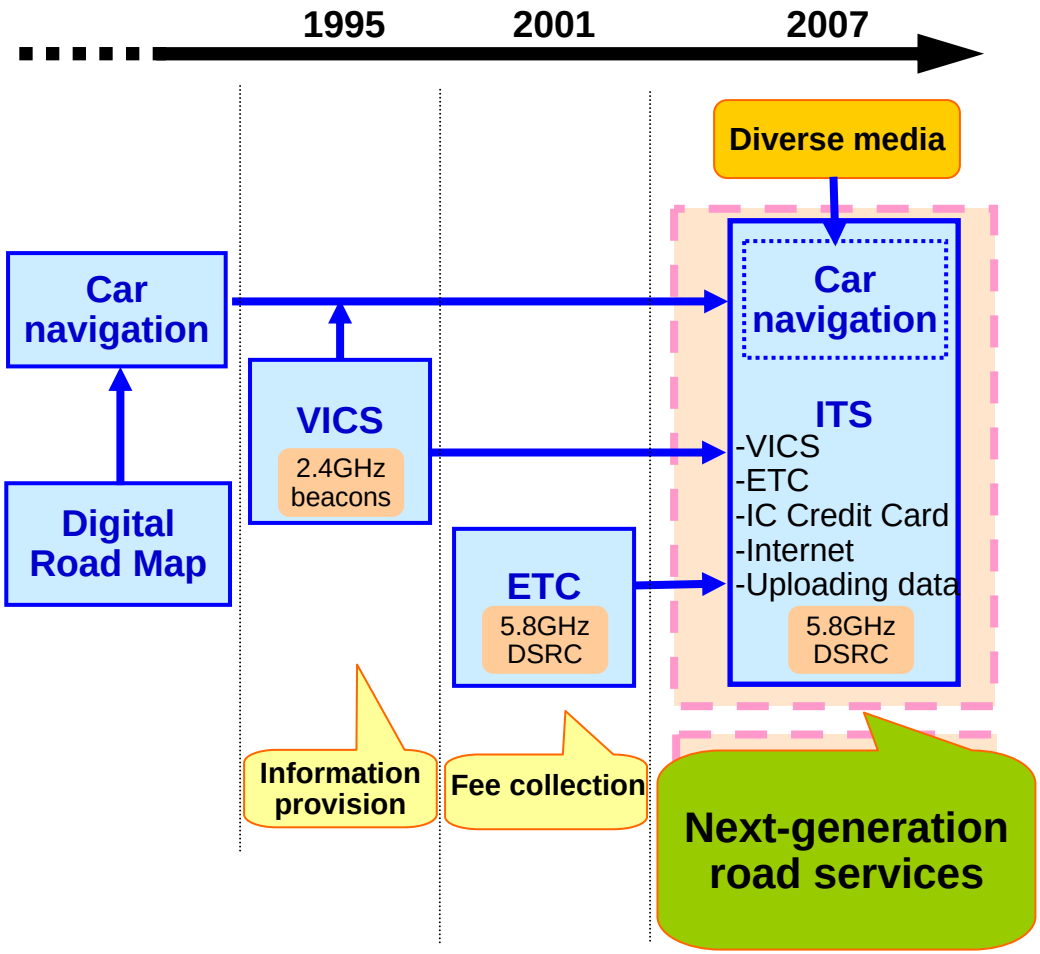
(3) Public parking lot payment services

Payment of fees at public parking areas

Entry/exit control at public parking areas

1. Work Flow on the Second Stage ITS

Platform Deployment Strategy



Services promoted by the public sector

- Next-generation roadway services
- Information provision services along roadways
- Information connection services at roadside rest area
- Public parking lot payment services

Deployment of private services

- Information services
- Payment services for gasoline stations, drive-thru establishments, etc.
- Recreational services
- Vehicle diagnostic services

and many others

2. Public-Private Joint Research

Promotion of public-private joint research

- A public recruiting was held for private firms to participate in joint public-private research.
- 23 companies with relevant expertise and experience have participated, and a cooperative research office was established.
- Joint public-private research is being actively promoted with the goal of full-scale realization of ITS services in 2007.

Dec. 2004 - Jan. 2005	Public recruiting for joint research
Feb. 2005	Commencement of joint research
July 2005	Interim report
February 2006	Smartway Demo2006
March 2006	Joint research report
March 2007 (planned)	Specifications formulated
October 2007 (planned)	Smartway 2007

DSRC Forum Japan's President Watanabe and Road Bureau Director-General Taniguchi hang the sign for the Intelligent Transport Service Cooperative Research Office.

AISIN AW CO.,LTD. Clarion DENSO
FUJITSU FUJITSU TEN FUJITSU FUJITSU LABORATORIES
HITACHI Inspire the Next JRC Japan Radio Co.,Ltd.
KENWOOD MITSUBISHI ELECTRIC MITSUBISHI HEAVY INDUSTRIES, LTD.
NEC NISSAN NTT DoCoMo OKI
Panasonic ideas for life PARK24 Co.,Ltd. Pioneer
SUMITOMO ELECTRIC TOKICO TECHNOLOGY LTD.
TOSHIBA TOYOTA INFORMATICS xanavi

Companies participating in joint public-private research

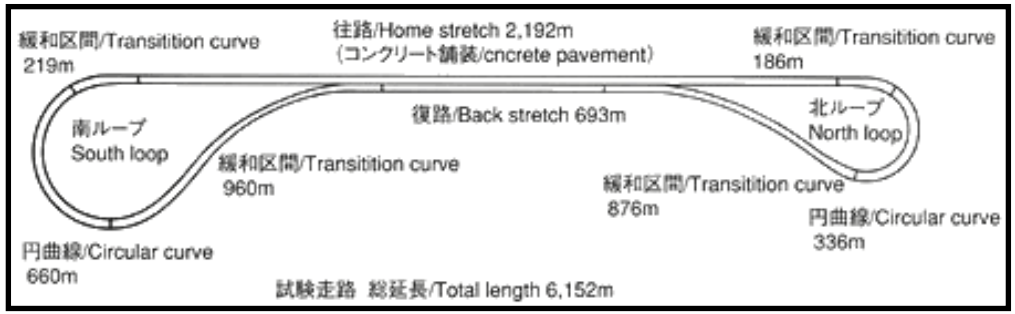
3. Demo 2006

1) Outline of Smartway Demo 2006

Dates: February 22 to 24, 2006
Place: Test Course at NILIM
DEMO events:

- **Test Ride Demo**
- **Tour Demo**

1000 guests were present



Director-General for Roads, Hiroaki Taniguchi Presents a Greeting at the Opening Ceremony

View of the DEMO Opening Ceremony

DEMO Car

3. Demo 2006

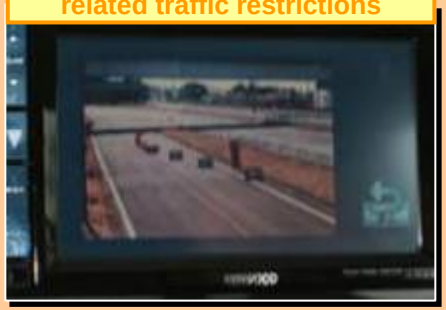
2) DEMO Events

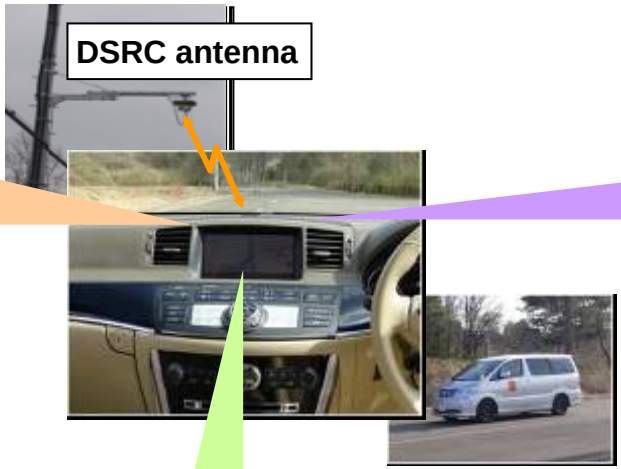
(1) Information Provision Services along Roadways

Provision of still picture information

Congestion

Information on construction-related traffic restrictions

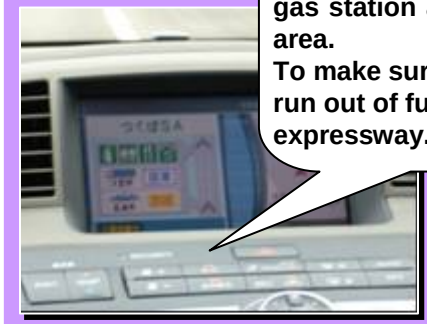




Provision of cautionary and warning information

Provision of voice information

Drivers on the expressway are warned of road surface icing. It is at a junction about 1 kilometer ahead.



You are approaching a service area. There is a gas station at this service area.
To make sure you do not run out of fuel on the expressway.

3. Demo 2006

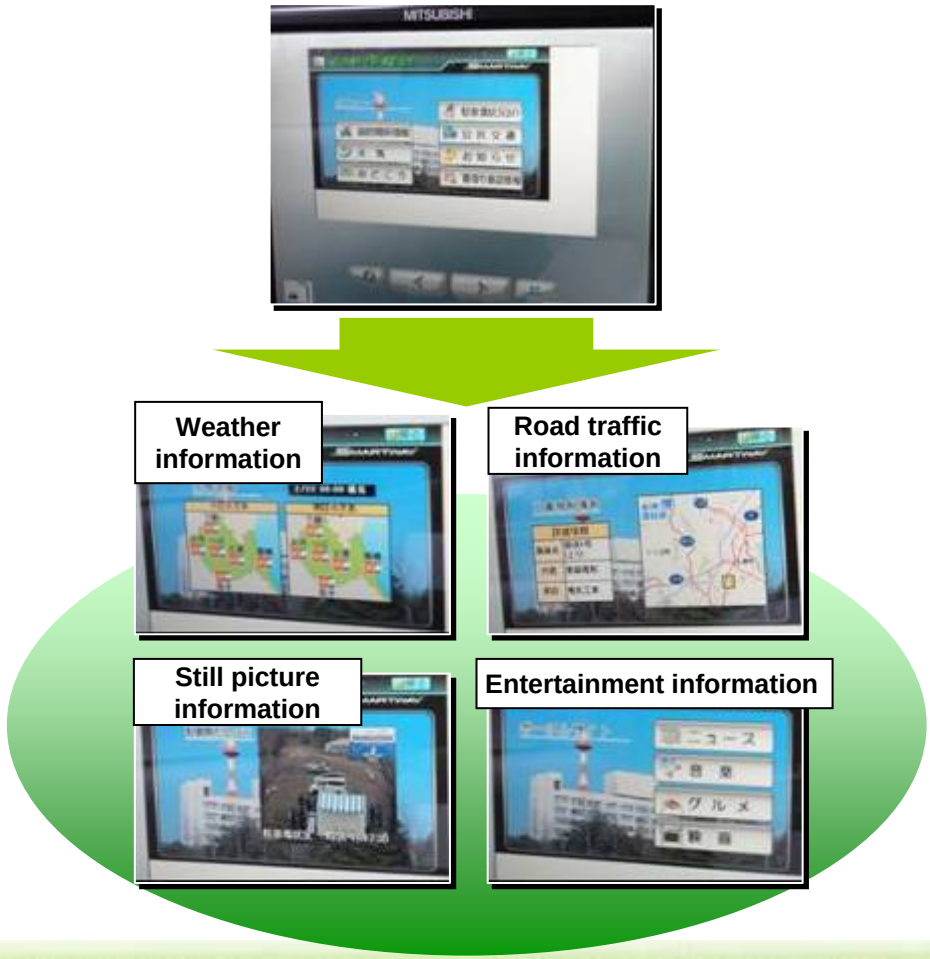
2) DEMO Events

(2) Fee payment service at public parkings

DSRC antenna

ITS OBU

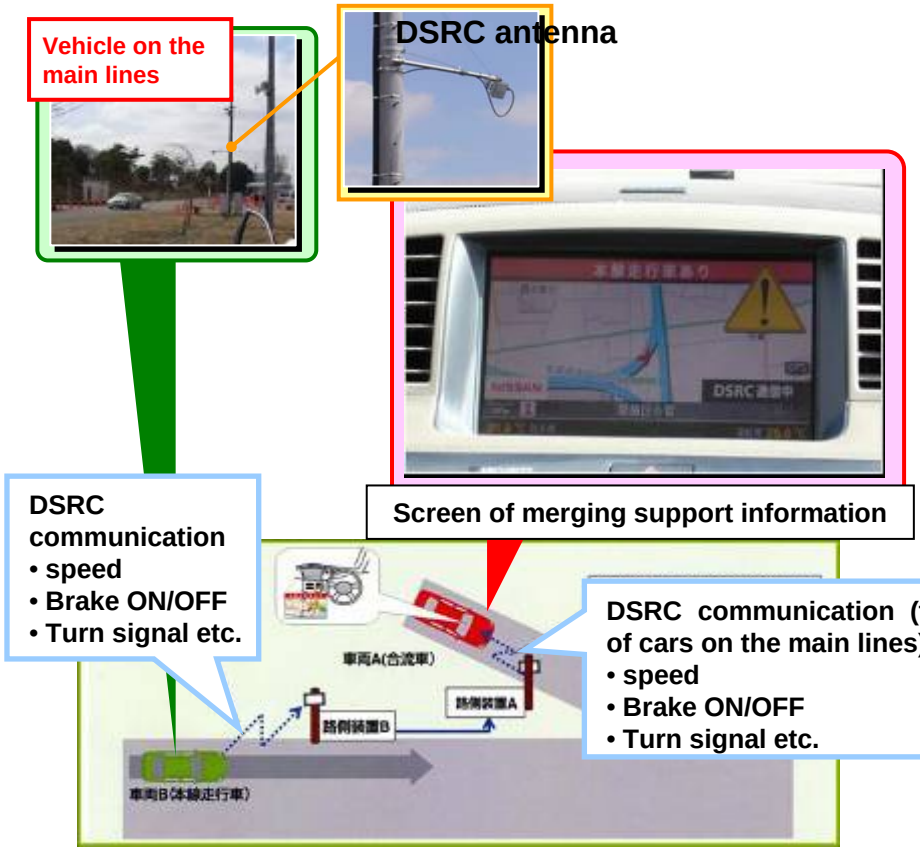
(3) Information connection services at roadside rest areas etc.



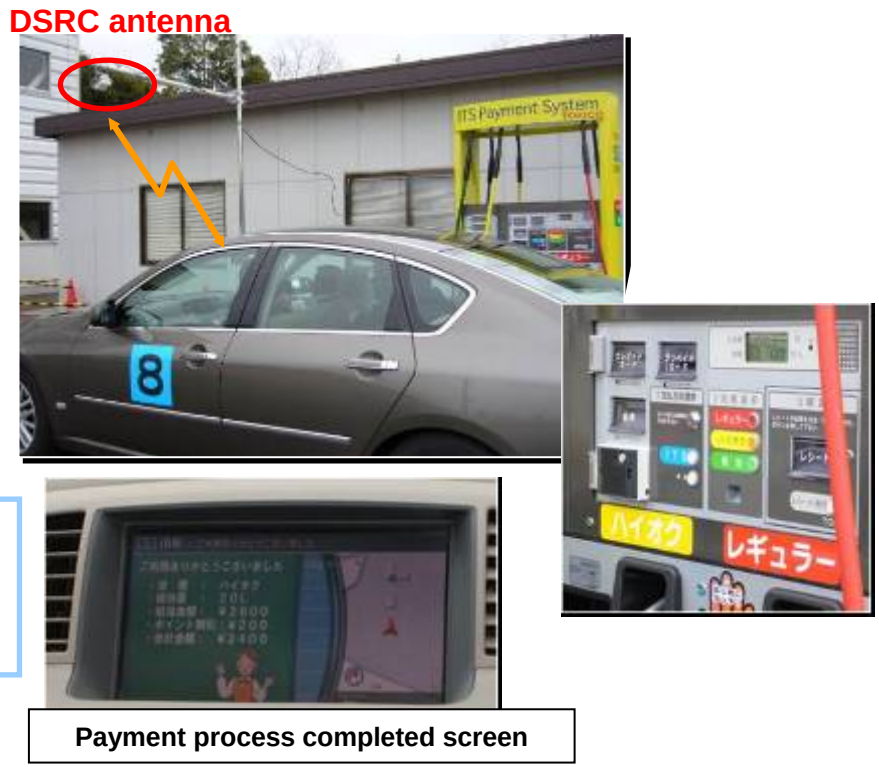
3. Demo 2006

2) DEMO Events

(4) Merging support service



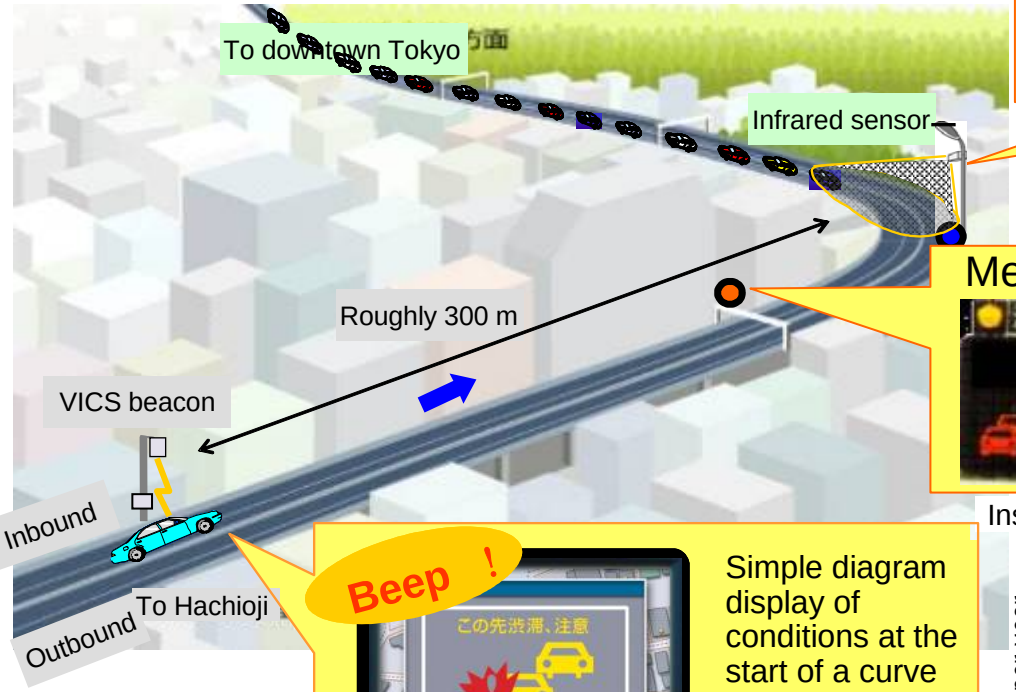
(5) Gas station payment service



4. Test in Metropolitan Expressway

2) Overview of Field test at Sangubashi

[Test Summary]



Sensors detect traffic congestion, standing vehicles and slow-traveling vehicles

Message sign

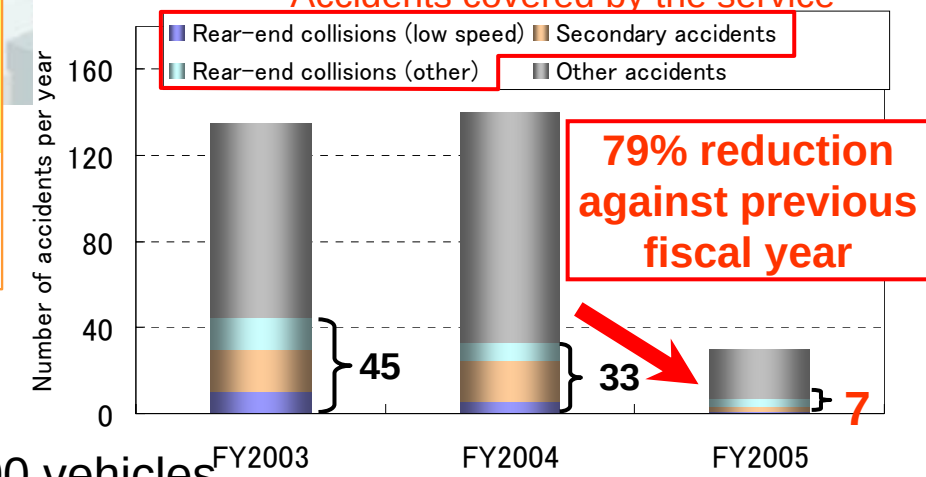
Installed on April 27

Roughly 10% of vehicles are equipped with three-media VICS-compatible car navigation systems

Simple diagram display of conditions at the start of a curve

Car navigation display

Accidents covered by the service



79% reduction against previous fiscal year

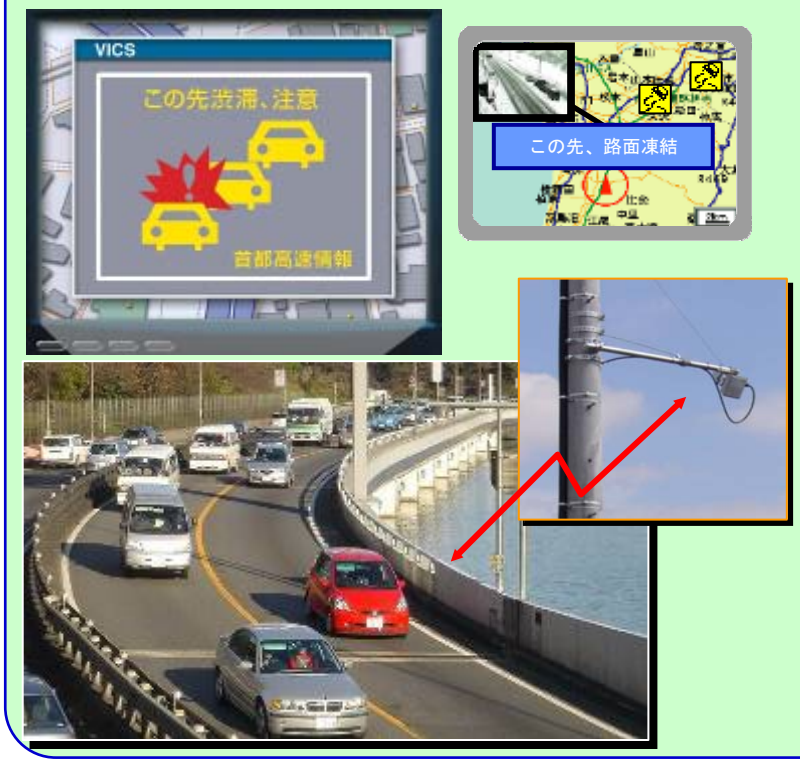
Curve section
-Curve radius: 88 meters
-Traffic volume (toward Tokyo): About 460,000 vehicles

New IT Reform Strategy for Traffic Safety

IT Strategic Headquarters

Director-General : Prime Minister

Cooperative Safety Systems



New IT Reform Strategy(excerpt)

(January 19, 2006, IT Strategic Headquarters)

‘ The world’s safest road traffic environment reducing traffic fatalities to 5,000 or below ’

‘ Reduce the number of traffic fatalities and serious injuries by deploying Cooperative Driving Safety Support Systems ’

Milestones

by FY 2008	Large-scale verification testing
from FY 2010	-Deploy Systems throughout the country -Promote the widespread use of on-board equipment

5. Future Approach

1) Deployment of safe driving support measures

Relationship between three next-generation highway services and safe driving support

Information provision services along roadways

Services to support safe driving

(1) Forward obstacles alert **Field test at Sangubashi**

(2) Unusual conditions ahead alert

(3) Road environment alert

(4) Support for merging

(5) Digital road map data based services

(6) Collecting and providing probe data

(7) Sags sections assistance

Information connection services at rest area

Providing information at road stations rest areas, service areas, parking areas, etc. to support drivers

Public parking lot payment services

Using general parking facilities, etc. to provide rest spaces

Using various types of communications media

Support for pedestrians, etc.

5. Future Approach

3) Future testing of services to support safe driving

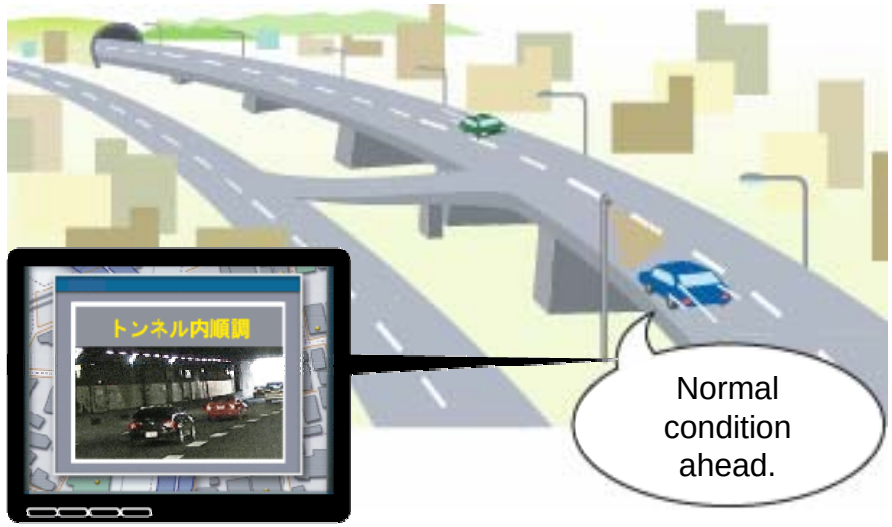
(1) Information provision on forward obstacles

- As hazards are identified, obstacles beyond the curve are detected from the roadside.
- Through road-vehicle communications, information is provided to drivers just before the curve, using voice and simple pictures

(2) Information provision on unusual conditions ahead

- Information on road conditions near tunnels and merging roads is collected by sensors, etc. and steadily sent to drivers using voice and images, etc.
- Information is also provided by text and voice in unusual conditions

Providing information on obstacles ahead



Providing information on unusual conditions ahead

5. Future Approach

(3) Information provision on the road environment

- Understandable information is provided on weather conditions and road surface conditions, using voice and images.

Providing information on the road environment

(4) Support for merging (evaluation of feasibility)

- The presence of vehicles approaching the merge point is detected from the roadside.
- Using road-vehicle communications, information is provided to drivers just before the point.

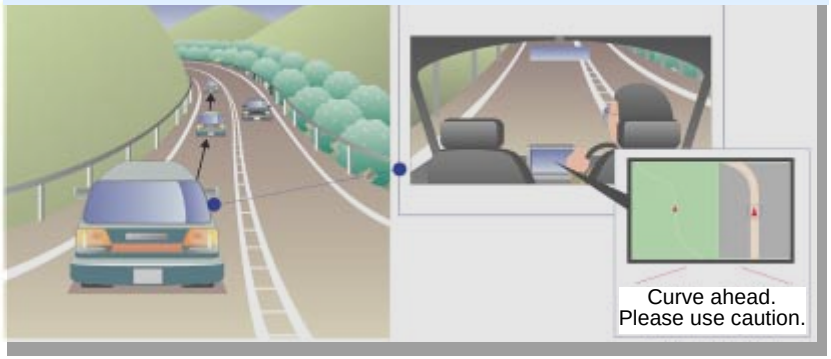
Support for merging

5. Future Approach

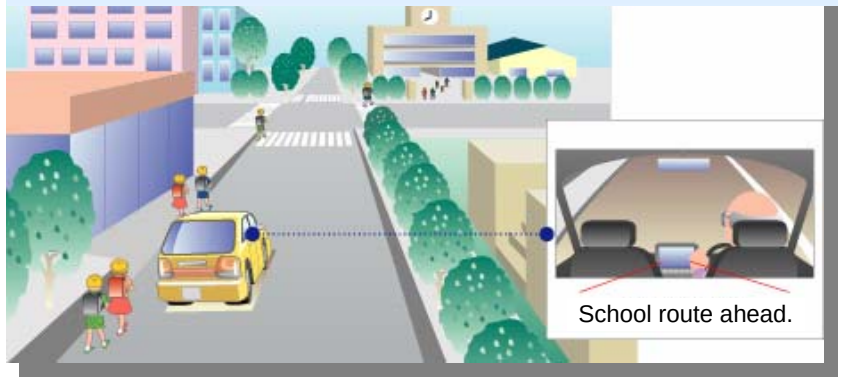
(5) Information provision with Digital Road Map data

- To enable the provision of information based on vehicle position and speed, road structure information (including curves) is added to the digital road maps.
- To enable the provision of information for the relative ease of roads use, road maps for comfortable driving of the ease of use are added to the digital road maps.

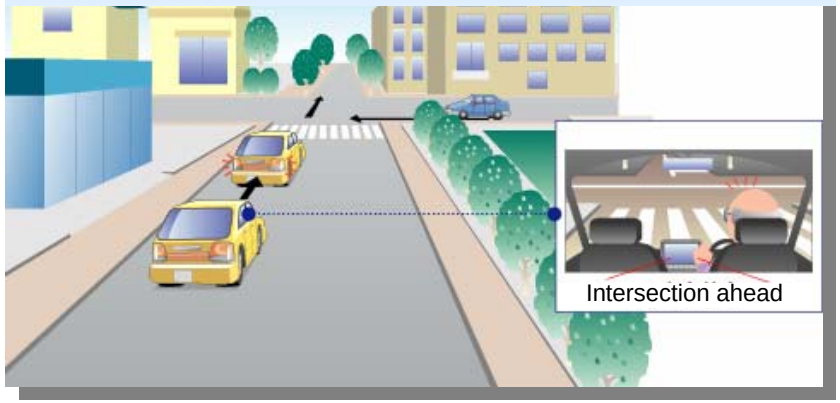
Support for prevention of hazards when entering curves

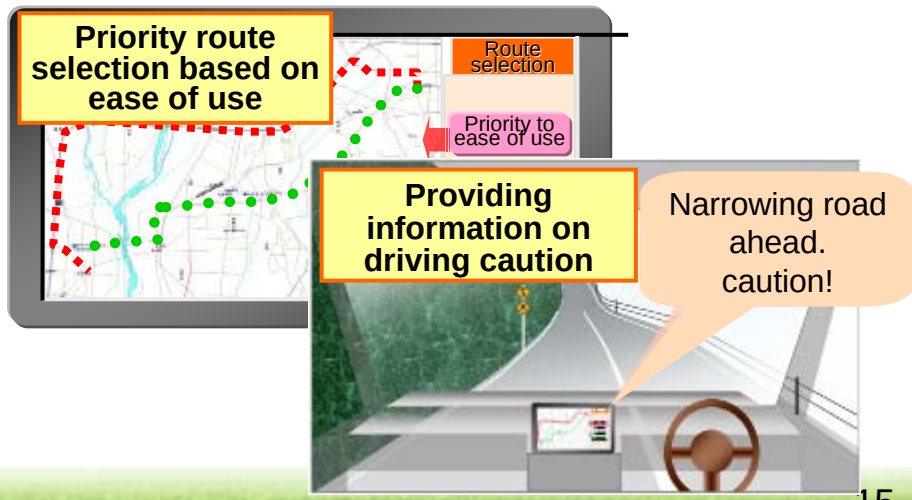


Providing information on school zone



Providing information on intersections





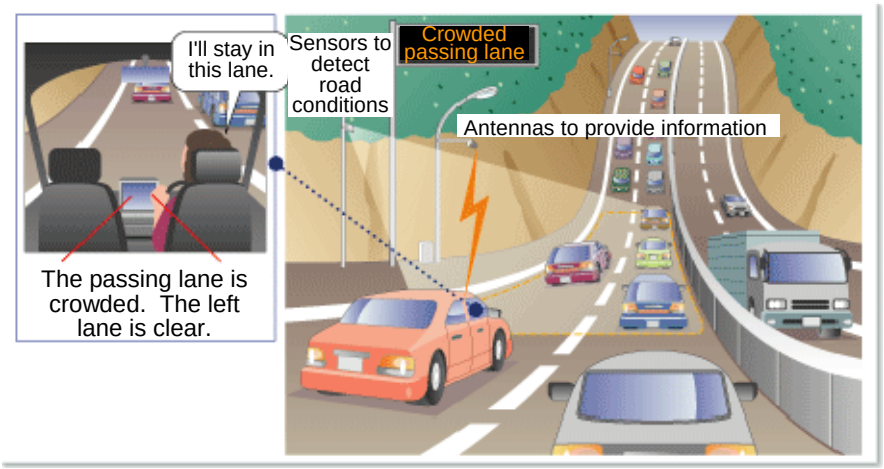
5. Future Approach

(6) Collection and provision of probe data (evaluation of feasibility)

- Various types of information, including vehicle speed and acceleration, to support safe driving are used.
- Based on probe data, information on unusual conditions such as skidding and abnormal behavior due to fallen objects.

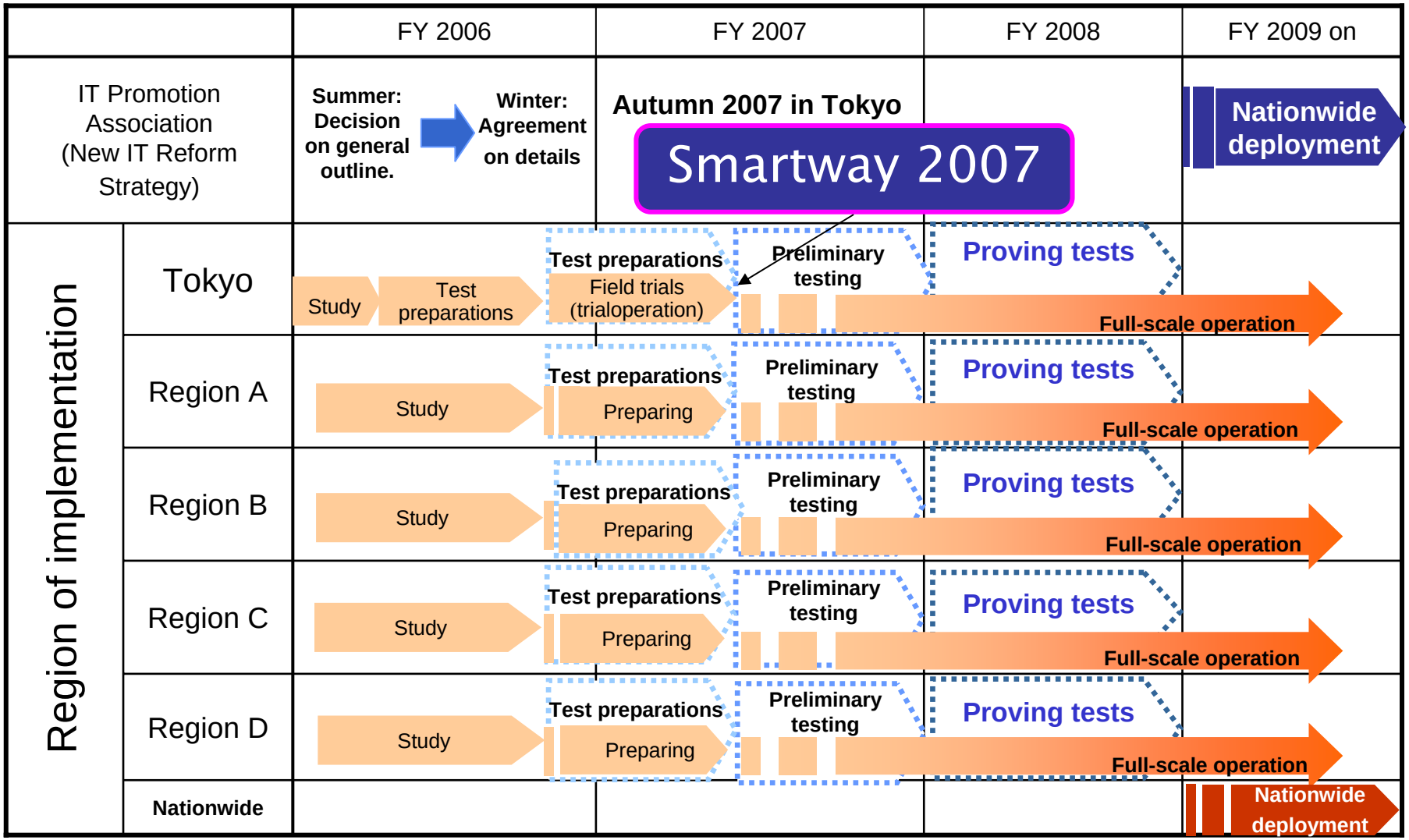
(7) Information provision at sags (evaluation of feasibility)

- At sags and tunnels causing congestion, information is provided for recommended use of lanes, including cautioning drivers about speed reduction and the occurrence of congestion.



5. Future Approach (Recent AHS)

4) Schedule for operating and proving tests (tentative)



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