

Realization of services using ITS (1) Safety and safe driving

Services providing information to support safe driving (AHS:Advanced Cruise-Assist Highway System)]

- On Metropolitan Expressway, 21% of all accidents are concentrated on just 6% of the expressways.
- A field trial was conducted on the use of VICS to provide information and warnings.
- 90% of drivers who tried the service found the voice announcements useful in calling their attention, and said they expect that this service will contribute to safety and security.



Source: Advanced Cruise-Assist Highway System Research Association (AHSRA) Notes: 1. Calculated by the National Institute for Land and Infrastructure Management (NILIM), based on data from fiscal 1999 through 2001 on traffic accidents on Metropolitan expressways and data on road curvature. 2. The "curves with frequent accident occurrence" are those curves with a radius of no more than 200 meters which are ranked in the top 100 for most frequent accident occurrence.

Fig.: Proportions of accidents at curves with frequent accident occurrence on Metropolitan expressways

Rank	Location	Expressway route	Total number of accidents per year
1	Sangubashi curve	Sangubashi curve	181
2	No. 4 Shinjuku line (bound for Tokyo)	No. 4 Shinjuku line (bound for Tokyo)	122
3	Kitanomaru Tunnel	Kitanomaru Tunnel	99
4	Central beltway (inward turning)	Central beltway (inward turning)	97
5	Naien Daiichi curve	Naien Daiichi curve	96
6	No. 4 Shinjuku line (bound away from Tokyo)	No. 4 Shinjuku line (bound away from Tokyo)	95
7	Kandabashi Junction	Kandabashi Junction	92
8	Central beltway (inward turning)	Central beltway (inward turning)	91
9	Shinjuku curve	Shinjuku curve	90
10	No. 4 Shinjuku line (bound for Tokyo)	No. 4 Shinjuku line (bound for Tokyo)	83
	Tokyo area ex	13,278	

Fig.: Total number of accidents and locations of frequent accident occurrence on Metropolitan expressways





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1) Realization of services using ITS (2) Affluence and the environment [Smart interchange field trials]

- Conducted at 29 locations nationwide, contributing to shorter travel times for commuters, tourists, emergency vehicles, etc.
- A smart interchange opens a gateway to the expressway, providing a spark for revitalization of the community.
- At the request of communities enjoying the convenience, field trials have been resumed or extended.





Realization of services using ITS (2) Affluence and the environment [Support for pedestrians]

- "Free mobility assistance project" has conducted proving tests at 11th World Congress on ITS in Nagoya, Aichi and The 2005 World Expo, Aichi, Japan.





Realization of ITS based services (2) Affluence and the environment [Bus location systems]

- Successive deployment of bus location systems on expressways, beginning in fiscal 2005.
- Use of probe data collected by bus location systems improve road administration, including better evaluation of losses due to congestion.





Fig.: Bus route information sign at Yaesu Bus Terminal, Tokyo Station

[3D mapping to evaluate losses due to congestion]



SMARTWAY

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Realization of ITS based services (3) Comfort and convenience [Spread of car navigation systems and VICS]

- With continued steady growth, a cumulative total of about 18 million car navigation systems and 12 million VICS units have been shipped.
- More and more, these are becoming standard equipment for vehicles.



SMARTWAY

1) Realization of ITS based services (3) Comfort and convenience [Promoting widespread adoption of ETC]

- During the one-year period since the proposal, the number of ETC units installed has risen doubling to 7.47 million, utilization rate to 45% (3.50M units and 20% at the time of the proposal).
- On Metropolitan expressways, more than half of all vehicles use ETC.



	Japan Highway Public Corporation	Metropolitan Expressway Public Corporation	Hanshin Expressway Public Corporation	Honshu-Shikoku Bridge Authority	Nationwide
Number of vehicles using ETC	2,395,300 /day	610,100 /day	331,000 /day	40,100 /day	3,376,600 /day
Total number of vehicles using expressways	5,377,400 /day	1,164,900 /day	844,900 /day	81,700 /day	7,469,000 /day
ETC utilization rate (%)	44.5%	52.4%	39.2%	49.1%	45.2%
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SMARTWAY

Realization of ITS based services (3) Comfort and convenience [Promoting widespread adoption of ETC]

- ETC has practically cleared congestion at tollgates on the main lines of Metropolitan expressways, which had been sites of chronic traffic congestion in the past.
- The benefits of cleared congestion are not limited to ETC users, but are enjoyed by others as well.
- ETC has had an effect in reducing the environmental burden.





Promotion of government-private joint research 2)

- Public recruiting for joint studies on systems to provide next-generation road services
- 23 companies are participating, and a cooperative research office has been established.
- Government-private joint research will be promoted with the goal of full-scale realization of ITS services in 2007.



Public recruitment for fourth joint research program in FY 2004

The following guidelines have been established for the fiscal 2004 public recruitment for joint research, to be performed in accordance with the cooperative research rules of the National Institute for Land and Infrastructure Management (March 28, 2002 Order No. 378 of the Engineering Affairs Section, Minister's Secretariat, Ministry of Land, Infrastructure and Transport; and Order No. 124 of the National Institute for Land and Infrastructure Management). Persons who will engage in the joint accomplishment of such research are to be recruited. Dec. 17, 2004 Tatsuo Hamaguchi, Director General, National Institute for

Land and Infrastructure Management.

1. Research items Research concerning systems to provide next-generation road services.

2. For details concerning the research topics and application procedures, visit the website of the National Institute for Land and Infrastructure Management at http://www.nilim.go.jp/.

Companies participating in government-private joint research

Area of business	Name of company	Area of business	Name of company
Automobile manufacturers	Toyota Motor Corp.	Navigation	Aisin Aw Co., Ltd.
	Nissan Motor Co., Ltd.	system	Clarion Co., Ltd.
Electronics manufacturers	Oki Electric Industry Co., Ltd.	manufacturers	Kenwood Corp.
	Sumitomo Electric Industries, Ltd.		Xanavi Informatics Corp.
	Toshiba Corp.		Denso Corp.
	NEC Corp.		Pioneer Corp.
	Japan Radio Co., Ltd.		Fujitsu Ten Ltd.
	Hitachi, Ltd.	Other	NTT DoCoMo, Inc.
	Fujitsu Ltd.		Tokico Technology Ltd.
	Matsushita Electric Industrial Co., Ltd.		Park 24 Co., Ltd.
	Mitsubishi Heavy Industries, Ltd.		Fujitsu Laboratories Ltd.
	Mitsubishi Electric Corp.		