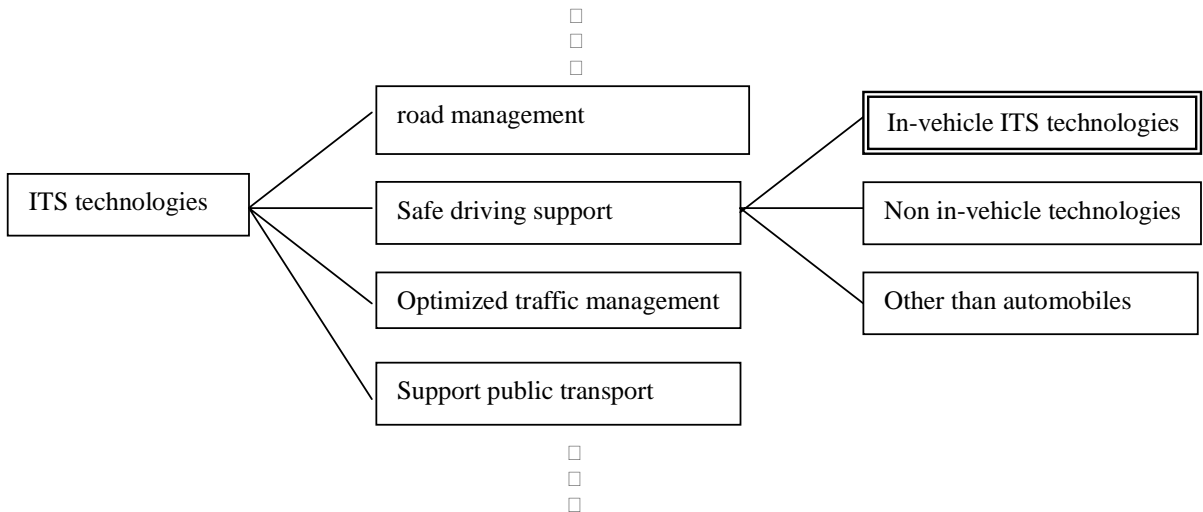


Necessity of International Understanding on ITS Technology Diffusion

1. In-vehicle ITS technologies ensure safety, abate congestion, and protect the environment.

By linking the people, roads and automobiles with information technology, ITS technologies increase safety and convenience for the road users and protect the environment. In-vehicle ITS technologies in particular are expected to remarkably enhance safety, abate congestion, and protect the environment through the reduction of fuel consumption and exhaust emission.



By our estimation, Diffusion of ITS Technology has potential to cut a 40% in traffic accidents. Europe regards the advanced driver assisting system (ADAS) indispensable in order to reach its Safety Action Plan's goal of halving the number of accident fatalities by the year 2010.

2. Some ITS technologies are already in the market, and regulatory receptivity is urgently necessary.

I should point out that ITS technologies are already out in the market. The ACC, for example, has already been implemented in some countries, as have new technologies such as the lane-keeping system in Japan. Many technologies have entered the stage of live testing on public roads, such as: the forward vehicle follow-up system in case of traffic congestion (stop-&-go) and forward obstacle collision prevention support system. Discussion on international standards for these technologies has already started.

Judging from these circumstances, ITS technologies are likely to come to market rapidly in the future, and so appropriate measures need to be taken quickly.

No.	ITS technologies	Status
1	ACC	On the market
2	Stop-and-go system for following a preceding vehicle in congested traffic	Driving test on public roads
3	Lane keeping support system	On the market
4	Automatic braking system for reducing injury	On proving ground
5	Doze alert system	On the market
6	Rear lateral / lateral collision avoidance advisory system	On proving ground
7	Curve overshooting prevention support system	On the market
8	Emergency braking advisory system	Driving test on public roads
9	Night-time forward pedestrian advisory system	On the market
10	Two-wheel vehicle presence advisory system	On proving ground
	...	
	...	
	...	

3. Problems may generate if the existing regulations are applied to ITS technologies.

Being very recent innovations, ITS technologies were not taken into consideration when the existing safety and environmental regulations were being formulated. For this reason the application of the existing regulations to ITS technologies may not only be insufficient but also generate the following problems:

- (1) When the current regulations are forced to be applied, the ITS technologies cannot be introduced, for they may conflict the current regulations.
- (2) Since no relevant regulation exists, these technologies may be introduced to the market without thoroughly studying their negative aspects in advance. This may diminish the safety.
- (3) If a certain technology is evaluated in the market as being not safe, a hurdle for introducing the technology again into the market will be very high. Thus, there is the possibility that its introduction into the market will be retarded.
- (4) Some technologies are too innovative that it is difficult to judge their safety. As a result, each government may handle the technologies in a different way.

An ITS technology works as a system. The system assesses by a sensor the situation around the vehicle, informs or alerts the driver about possible hazards, and controls safety devices.

When discussing the safety of such a system, we should not forget that it is an integrated system. A good human machine interface is also indispensable, because the driver and the system should be closely coordinated in such a system.

For these reasons, it is difficult for the existing GRs divided by factor technologies to discuss it efficiently.

[ref : Attachment]

4. The best approach is a trilateral effort to produce a consensus on and/or a guideline for ITS technologies.

ITS technologies help improve safety, yet there is a new risk of accidents. For example, the driver may rely too much on the technology and neglect to pay attention to safety, thus becoming an unsafe driver. Therefore, the negative aspects of ITS technologies should be summarized.

A consistent approach toward the safety of ITS technologies should be adopted throughout the world, so the technologies should preferably not be introduced in a country where unique regulations exist. It is hoped that respective countries will cooperate to maintain the consistency of regulations.

* * * * *

[Attachment]

Example

Let us take the case of automatic braking system for reducing injury, for example.

1) What is an automatic braking system for reducing injury?

An automatic braking system for reducing injury can be defined as a system that senses a forward obstacle and automatically activates the brake to mitigate damage due to the collision with such an obstacle.

2) Points to be reviewed

- i) To what extent should the sensors read the distance between the vehicles, the road surface, etc.?
- ii) What will be the timing and method for alerting the driver?
- iii) Should we also discuss technologies to prepare for the collision? (automatically tensioning the seatbelt, drawing the headrest to the passenger's head, etc.)
- iv) What will be the timing for braking?
- v) Isn't it necessary to use lamps to alert the following vehicles of the danger?
- vi) To what extent should the impact energy be reduced?
- vii) What about a risk for driver to neglect to brake by him/herself, as a consequence of overconfident on the system? Isn't the driver likely to depend too much on this system and neglect to brake by him/herself?

3) Are there GRs suitable to discuss these questions?

GRs suitable to discuss respective questions will be as follows:

- | | |
|------|-------------|
| GRSG | : i), ii) |
| GRSP | : iii), vi) |
| GRE | : v) |
| GRRF | : iv) |
| ? | : vii) |

It will be necessary, however, to also invite HMI experts and experts who are familiar with the system as a whole.