

## 2nd Informal Group on ITS, 14 November 2002

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**Necessity of International Understanding  
on ITS Technology Diffusion**

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**1. ITS for In-vehicle Applications**

- (1) In-vehicle ITS technologies are expected to remarkably enhance safety, abate congestion, and protect the environment through the reduction of fuel consumption and exhaust emission.
- (2) In Japan trial calculations were performed on the effects of ITS technologies, showing that fatal and serious accidents can be potentially reduced by 40% in Japan.



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**1. ITS for In-vehicle Applications (conti.)**

**ITS technologies**

1. road management
2. **Safe driving support**
3. Optimized traffic management
4. Support public transport  
ETC etc.

**i. In-vehicle ITS technologies**

- ii. Non in-vehicle technologies
- iii. Other than automobiles



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**2. The ITS has already been put into market.**  
**- Prompt response is needed -**

- (1) The ACC has been put into market in Japan, the United States and Europe; and the lane-keeping support system in Japan.
- (2) The running test for stop-&-go system and forward obstacle collision prevention support system is conducted on public roads.
- (3) Deliberations on standardization of ITS technologies has already started.



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**2. The ITS has already been put into market.**  
**- Prompt response is needed -** (Example)

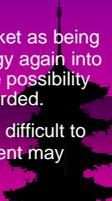
No	ASV technologies	Status
1	ACC	On the market
2	Stop-and-go system for following a preceding vehicle in congested traffic	Driving test on public roads
3	Lane keeping support system	On the market
4	Automatic braking system for reducing injury	On proving ground
5	Doze alert system	On the market
6	Rear 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
	...	
	...	



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**3. Problems When Current Safety Regulations are Applied to ITS**

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.



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3. Problems When Current Safety Regulations are Applied to ITS  
- How ITS Technology should be discussed? - (conti.)

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.



1. We should not forget that it is an integrated system.
2. A good human machine interface is also indispensable.

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Example : Automatic braking system for reducing injury  
- How ITS Technology should be discussed? -

- i) To what extent should the sensors read the distance between the vehicles, the road surface  $\mu$ , 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 overconfidence on the system? Isn't the driver likely to depend too much on this system and neglect to brake by him/herself?

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Example : Automatic braking system for reducing injury  
- How ITS Technology should be discussed? - (conti.)

2. 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.

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4. Solution to Negative Aspects and Subjects to Be Tackled for Dissemination  
~ Necessity of Common Understanding ~

<New risk of accidents>

For example, the driver may become overconfident in the ITS technologies, thus neglecting his primary responsibilities. As a result, the safety is degraded.



Arranging the negative aspects of the ITS technologies

It is not desirable that each country decides its own regulations.



For the dissemination of the ITS, it is necessary to have common understanding of safety under concerted cooperation of respective countries.