1. Overview of the past and future work of WP29

ITS Round Table

18/2/2004  Geneva

Kenji Wani
Co-chairman of ITS informal Group, ECE/WP29
Ministry of Land, Infrastructure and Transport
Japan
ITS?

- ITS: Intelligent Transport System
  - Road management
  - Safe driving support
  - Optimized traffic management
  - Support public transport
  - ... etc.
ITS for In-vehicle Applications

ITS technologies

1. Road management
2. Safe driving support
3. Optimized traffic management
4. Support public transport
   ... etc.

i. In-vehicle ITS technologies
ii. Non in-vehicle technologies
iii. Other than automobiles
ITS related activities can be seen all over the world

- Project
  - IVI: the US
  - e-Safety: Europe
  - ASV: Japan

- Congress
  - The ITS World Congress

- Research, Standard
  - IHRA ITS WG
  - ISO
The in-vehicle ITS has already been put into market
(Example: in Japan)

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

- Lane Detection Sensor (Camera)
- Steering Actuator
- Controller
Example: Drowsiness Warning System

Staggering Driving Detection

Voice: "Aren't you tired?"
Voice: "Please take a rest."

White Line Detection Camera

Operation Frequency Detection (Steering, Clutch, etc.)

Estimation of Driver's Attentiveness

Display

Giving Fresh Fragrance
In-vehicle ITS (ASV) is now reaching to and going into Market

Example: in Japan

- ACC
- Lane keeping support system
- Doze alert system
- Curve overshooting prevention support system
- Combined brake system (Motorcycle)
Problems When Current Safety Regulations are Applied to ITS

1. When the current regulations are forced to be applied, there is possibility that some of the ITS technologies cannot be introduced, for they may conflict the current regulations.

2. If no relevant regulation exists, these technologies may be introduced to the market without thoroughly studying their negative aspects in advance. Appropriate measures are expected to be established.

3. If a reaction from the market is negative to certain technology from the viewpoint of safety, 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.

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

What is a suitable form to discuss it?
Informal group on ITS was established at WP.29 World Forum for Harmonization of Vehicle Regulations in June, 2002

Chairman; Mr. Gauvin, Mr. Wani

Role;

Short term : Preparation of ITS round table

Middle term : Study on how to deal with ITS at WP29, including how the organization should be.
ITS informal Activity till now

- 5 meetings have held since June 2002
- Preparation work for the Round Table
- Discussion on “Role and Position”
  - Role
  - Understandings for the scope
  - Position
- Exchange of information
Role

“Role and Position”

- Short term; Preparation of the Round Table
- Middle term; Study on how to deal with ITS at WP29, including how the organization should be.
1. At WP29, In-vehicle Intelligent Transport Systems (ITS) are discussed and definition of such systems are on-board systems for safety that utilize information that is received from direct sensing and/or telecommunications via the road infrastructure or other source.

2. It is important to emphasize that certain ITS applications use advanced technologies to provide in-vehicle support for reducing the number of crashes and attendant injuries and deaths. Other ITS applications provide in-vehicle information for purposes other than improved safety. Whatever the primary function, both types of ITS applications can have important unintentional influences on safety (positive and negative.)

3. Certain areas of systems are expected to be discussed primarily for enhancing safety of the vehicles. They include systems that use advanced technologies for enhancing safety, and that advise/warn, assist, and/or substitute [advise/warn, and/or assist] the driver with the purpose of vehicle functions and performance in driving
Understandings for the scope

-Main Points-

- in-Vehicle ITS or IVS (Intelligent Vehicle System) not whole ITS
- Influences on Safety both positive and negative effect should be discussed
- One of priority subject is Safety enhancing technology (Warning, Assist)
1) The introduction of ITS into market shall not be hindered as far as there are no clear problems on safety.

2) For encouraging introduction of ITS, role of governments in the area of safety should be further studied. Such role of governments may include followings.
   a. If current regulations that are holding back ITS from market, countermeasures should be studied.
   b. To develop and apply methodologies for assessing the safety impact, estimation of effectiveness and potential safety degradation.

3) In studying the role of governments, role of industries and other means than regulations on vehicle construction should be considered (ex. civil law, industry's guidelines).
4) In particular, it's important to deal with the issues from a viewpoint of HMI and [an aspect of the driver's responsibility is duly taken into account]*.

5) It is preferable to get a common understanding on the above-mentioned role of governments among contracting parties.

6) In the current framework of GRs, some technical issues on ITS can be dealt by more than one GR or cannot be discussed at any of the existing GRs.

*) expression is under discussion
Conclusion

- Motor vehicles are expected to become much safer by utilizing ITS technology. Such technologies are already being put into market.
- ITS technology is quite new and important subject for WP29 and we should establish suitable form to discuss them.
- Especially interaction between driver and motor vehicle should be discussed towards establishing common understandings on such as HMI and driver responsibility.
Thanks for your attention....