Vehicle Regulations and ITS deployment

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UN Vehicle Regulations

• Developed by the World Forum for Harmonization of Vehicle Regulations (WP.29)

• Legal framework: two UN legal instruments (1958 and 1998 Agreements)

• Countries and Regional Economic Integration Organizations (EU) introduced them in their legislation

• Mandatory or alternative to national/regional law

• Based in performance requirements

• Provide a unique legal environment for the development of new technologies and solutions at global level
Vehicle Regulations and ITS

- Intelligent Vehicle Systems have been incorporated in vehicle regulations
- Other ITS applications are not included (line keeping assistance, drive alert …)
- Other UNECE umbrella projects of ITS technologies are in progress for their inclusion in regulations at global level
ITS development through regulations

- Market development versus regulatory activity
- Some ITS must be incorporated into (worldwide) regulations (UNECE World Forum)
- Regulations performance oriented
- Allow technological development
- Harmonized regulations contribute to harmonize ITS
- All ITS must be compatible
Intelligent Vehicle Systems

Advanced Driving

Advanced Technologies
(Driver Assistance Systems)

Assistance for
Recognition:
Information
presentation

Assistance for
Judgment:
Warning

Assistance for
Operation:
Control

Human Driver

Vehicle

Environment

Feedback of Vehicle Behavior

Conventional Driving
## Examples of In-Vehicle ITS Systems in the Market

<table>
<thead>
<tr>
<th>Assistant level</th>
<th>Function</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Recognition assistance</td>
<td>Information provided to the driver for route guidance, for notification of unforeseeable events on the road as well as enhancement of visibility etc.</td>
<td>Navigation system</td>
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<td>Information on curving roads</td>
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<td>Night vision, etc.</td>
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<td>Judgment assistance</td>
<td>A signal informing the driver of a hazardous situation, which if not corrected by an immediate action, will result in equipment damage and/or personal injury</td>
<td>FCWS</td>
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<td>LDWS</td>
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<td>SOWS</td>
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<td>Night pedestrian warning</td>
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<td>Unsteady driving warning, etc.</td>
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<td>Operation assistance</td>
<td>Automatic control for pre-crash situation to mitigate crash severity as well as control for normal driving to improve convenience</td>
<td>CMBS</td>
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<td>ACC</td>
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<td>LSF</td>
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<td>Parking assist</td>
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<td>Navi-cooperative shift, etc.</td>
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**Systems**

ACC: Adaptive Cruise Control  
CMBS: forward Collision damage Mitigation Braking System  
FCWS: Forward Collision Warning System  
LDWS: Lane Departure Warning System  
VICS: Vehicle Information and Communication System  
LSF: Low Speed Following  
SOWS: Side Obstacle Warning System  
LKA: Lane Keeping Assist system
ITS for Managed Transport Networks

• Avoid congestion
• Reduce pollution blanket hovering cities
• Noise reduction
• Increase road safety
• Increase vehicle safety
• Increase vehicle environmental performance
• Intermodal transport
• Border crossing facilitation
• TIR system
• Control of working hours
UNECE Global Experience

• Vehicle Regulations
• Coordinated researches at global level
• Road Transport
• Road Traffic Safety
• Combined Transport
• Border Crossing Facilitation
• TIR system
• Dangerous Goods

Makes UNECE your partner for the worldwide development and harmonization of ITS
Thank you for your attention