Session 4: Communications for Highly Automated Driving – An Overview

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Automated driving system products for series production vehicles (SPV-ADS) might use data communications for many purposes:

- Software updates
- Road data updates
- Roadwork information
- Vulnerable road user information:
  - Pedestrians
  - Emergency responders
  - Cyclists
- Signal phase and timing
- Remote control
- Driver assistance
Scope of Possibilities (2)

SPV-ADS might use data communications for many purposes

- Direct interactions between vehicles
  - Collision avoidance
  - Braking notification
  - Merging assistance
  - Priority at intersections

- Dynamic situations
  - Construction / road closed
  - Slippery pavement
  - End-of-traffic queue
Applications Needed

Which applications are needed to achieve SPV-ADS, at what level, and at what time?

• For different road types?
• For different lighting conditions?
• For different weather conditions?
What efforts are needed to make progress on SPV-ADS?

- Standards
- Technology
- Government support
- Infrastructure
- Commercial critical mass
Product Scope and Time

How will these applications for SPV-ADS be accomplished, and when?

• For specific applications
• For discrete sets of ODDs
  ‣ Motorways
  ‣ Urban surface streets
  ‣ Rural surface roads
• For specific regions
Needed Communications-Related Elements

What communication-related elements are needed for SPV-ADS?

• In-vehicle processing
• Data communications methods
  ‣ Cellular
  ‣ Wi-Fi
  ‣ C-V2X
• Back-end processes
  ‣ Service and information providers
  ‣ Anonymization
Panelists and Agenda

The panelists will discuss issues about the data communications applications for SPV-ADS

• Fan Ren, PhD
  ‣ Manager, Technology Department
    Changan Automobile Group

• Norifumi Ogawa
  ‣ Staff Manager, Technical Research Department
    Mazda Motor Corporation

• Maoyuan Cui, PhD
  ‣ Senior Director, Intelligent Connected Vehicle Development Institute
    China FAW Group Co., LTD

• Martin Hauschild
  ‣ Head of Business Line My Journey, Software-Based Functions and Service
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