Report on Automated Vehicle activities

GRSG-116
April 2019
Debates on
- GRVA structure
- GRVA priorities

Proposals to
- Create new GRVA inf grs
- One of them dedicated to the DSSAD
- Allocate EDR to GRSG

Good communication between the GRs
WP29 to be the hub
State of play at GRVA

- **ALKS**
  - Entry in and exit from the transition phase
  - Which support can the driver still have from the system when he overrides the ADS?
  - Which control to activate LKAS, which information on status?
  - DSSAD

- **VMAD**
  - 3-pillar approach
  - Audit? CEL?
Examples for the different pillars’ functions

- **Typical traffic scenarios**
- **Critical traffic scenarios**
- **Edge case scenarios**

Scenario probability of occurrence in real world traffic:
- Pedestrian crossing a crosswalk
- Obstructed pedestrian crossing
- Obstructed pedestrian crossing + cyclist overtaking

Complexity/risk of scenario:
- Real World Test Drive
- Physical certification Tests
- Audit and Assessment (e.g. simulation)
Concept for certification – the three pillars and their individual purpose

**PILLAR 1**

**Audit/Assessment**
- Understand the system to be certified
- Assess that the applied processes and design/test methods for the overall system development (HW and SW) are effective, complete and consistent
- Assess system’s strategies/rest performance to address (multiple) fault-conditions and disturbances due to deteriorating external influences; vehicle behavior in variations of critical scenarios
- Simulation: Test parameter variations (e.g. distances, speeds) of scenarios and edge-cases that are difficult to test entirely on a test track

**PILLAR 2**

**Physical Certification Tests**
- Assess critical scenarios that are technically difficult for the system, have a high injury severity and are representative for real traffic
- Compare with critical test cases derived from simulation and validate simulation tools

**PILLAR 3**

**Real World Test Drive**
- Assess the overall system capabilities and behavior in non-simulated traffic on public roads and show that the system has not been optimized on specific test scenarios
- Assess system safety requirements like e.g. HMI and ODD
- Assess that the system achieves a performance comparable to an experienced driver
State of play at WP1

- Important for GRSG in particular for HMI
- Adoption of a Resolution addressing the conditionally and the highly automated vehicles
- Ongoing discussions:
  - What “other activities than driving” may the driver undertake when the AD is engaged
  - Remote driving
  - Amendments to the Vienna Convention and the Geneva Convention.
Challenge facing the Automated Driving (AD) Technique

Conventional vehicles

Technical Regulation frame

Road Traffic Regulation frame

Technique
- Braking system
- Steering system

HMI

Controls
- Indicators

Driver

Tactical decisions

Strategic decisions
Challenge facing the Automated Driving (AD)

Automated vehicles

Technical Regulation frame

Technique
- Braking system
- Steering system
...

AD System
- Tactical decisions

Road Traffic Regulation frame

HMI

Driver
- Strategic decisions
Challenge facing the Automated Driving (AD)

Automated vehicles

Technique
- Braking system
- Steering system

AD System
- Tactical decisions

Requirements specific to automation

Technical Regulation frame

Road Traffic Regulation frame

HMI

Driver
- Strategic decisions
Thank you