View on the Certification of AV‘s

- Current achievements and future tasks -
Assessment of the expected deliveries

- OICA/CLEPA has developed an overview on how Automated Vehicles could be certified (=> agreement neutral approach)

- The aim was to identify missing elements required for certification of Automated Vehicles, requiring further consideration under GRVA

- During this exercise the content of the former informal document GRVA-09-10 (presentation on the Certification of Automated Vehicles) was confirmed, taking also into account the latest developments in FRAV, VMAD and the Integration Group
**ADS certification overview: „Big picture“ on how it works**

**Manufacturer/Organization**

- Safety Management System

**Product**

- OICAOICA

**Requirements/Processes**

- Internal and/or external

**Audit (Internal and/or external)**

- Acceptance confirmation
- Final Documentation package
- Certification Confirmation

**Certified product**

- ISMR

**Safety Assessment**

- No unified / harmonized Database available

**Scenario Database**

- Feature based (use case + ODD)
- Logical Scenarios
- Concrete Scenarios

**Shape based assessment**

- Identify scenarios

**Non-scenario based assessment**

- Acceptance criteria

**Scenario based assessment**

- Nominal, critical, failure condition
- Expected behavior competency, accidentology, ...

**Multi pillar testing**

- Test track
- Real world test
- Virtual/Simulation
- Credibility assessment

**Acceptance**

- Final documentation package

**Internal/external Logical Scenarios**

**Internal/external Acceptance criteria**

**ISMR**

- No unified / harmonized criteria available

- Final Certification Confirmation

- Deployment
Outcome of the assessment

- In principle all topics needed for an ADS Regulation (GTR or UN R) seem to be addressed by the outcome of FRAV and VMAD

- Potential for improvement/harmonization for future activity on the topics of

  1. Scenario Database/catalog
  2. Acceptance criteria

=> Even though these topics are not addressed in a harmonized way yet, it would be possible to use the concept for certification making use existing solutions (e.g. scenario database from research projects, manufacturer justified acceptance criteria, etc.)
Need for harmonized AV definitions

Harmonized AV Terms & Definitions

DSSAD

ALKS

Future ADS Regulation

non ADS Regulations

ADS Guideline

Vehicle Categorization
Needs for certifications of AV’s

**ADS Regulation**
- Gtr (98A), UN R (58A)
- Still unclear how the work will continue after delivery of the FRAV/VMAD guideline doc

**Amended non ADS Regulations**
- Work in GR TF’s progressing
- Coordination important, incl. use of common definitions, etc.

**Vehicle Categorization**
- Revisions of R.E.3 & S.R.1
- Joint Workshop/TF of GRVA and GRSG needed
Thank you