

Informal Working Group on
Functional Requirements
for Automated Vehicles

Status Report

15th GRVA Session

23-27 January 2023



FRAV-36-04

Draft status report per feedback received during the 35th FRAV session for review during the 36th session.

- Guidelines for consideration during the June 2023 WP.29 session.
 - Per the AV Framework Document as amended by WP.29-188-12.
 - Guidelines for ADS safety requirements and verifiable criteria.
 - Second phase to integrate FRAV and VMAD outcomes in 2024 submission.
- FRAV currently reviewing draft text.
 - Based on GRVA-09-28 (concepts) and GRVA-13-36 (scope of requirements).
 - Aim to provide basis for this second phase and reference for use across WP.29 activities (e.g., screening of regulations for ADS application).
 - FRAV has reviewed Introduction and DDT sections.
- FRAV expects to deliver interim submission for May GRVA session.
 - Review by GRVA for submission to the June WP.29 session.

- Behavioural competencies provide the verifiable criteria for DDT performance.
 - Behavioural competency is an expected and verifiable ADS capability to operate the vehicle within an ODD.
- A behavioural competency may involve various elements, including but not limited to, consistency with:
 - High-level performance requirements (applicable worldwide)
 - Traffic rules applicable to the ODD (localised requirements that may vary)
 - One or more safety models regarding vehicle control.
- FRAV guidelines provide high-level performance requirements.
 - FRAV is considering additional guidelines regarding traffic rules and safety models.

- The ADS must demonstrate behavioural competencies across a sufficient range of traffic scenarios:
 - To verify ADS capability to perform entire DDT required to operate the vehicle within the ODD of its feature(s).
 - To assess performance under nominal, critical, and failure situations.
 - FRAV is considering guidelines to ensure sufficient coverage.
- High-level requirements and guidelines for traffic-rule analysis, safety models, and scenario generation provide the basis for ADS safety assessment criteria.
- “Future proof” framework that addresses the diversity of ADS and enables alignment with technological progress.

- FRAV and VMAD leaderships held several discussions during November-December on second phase collaboration.
- FRAV and VMAD agreed on a methodology to manage and coordinate work on the joint submission to WP.29 for June 2024.
 - Matrix of ADS requirements and validation methods.
 - Iterative process to reach agreement on text for requirements and their validation.
- FRAV expects to begin collaboration with VMAD from April.
 - Initial requirements and explanations for consideration by VMAD and its subgroups.

- As requested by GRVA, FRAV met with IGEAD
 - WP.1 Informal Group of Experts on Automated Driving (IGEAD).
 - 7-8 November in The Hague.
- FRAV explained its activities.
 - ADS safety framework, requirements, and tools.
 - Position on external light-signalling (as approved by GRVA).
- Discussion suggested four areas of common interest.
 - Understanding terms and definitions used in WP.29 and WP.1.
 - External ADS communication with other road users.
 - Electronic database of ADS-readable traffic rules.
 - ADS behaviours in traffic to ensure road safety (human-centred).

- FRAV expects to deliver its interim recommendations to the May GRVA session.
 - Introduction (rationale and fundamental concepts) and DDT performance (nominal, critical, failure situations) has been reviewed.
 - Safety of user interactions and over the useful life of the vehicle plus guidelines on traffic rules, safety models, and scenario generation pending.
 - FRAV plans to hold a session during 14-16 March in the UK.
- FRAV expects to begin collaboration with VMAD on a joint 2024 submission in April.
 - Initial input to the FRAV/VMAD matrix based on the draft interim submission.
- FRAV looks to GRVA and WP.29 for guidance on further interaction with WP.1/IGEAD, if any.

Informal Working Group on
Functional Requirements
for Automated Vehicles

Status Report

15th GRVA Session

23-27 January 2023



**FRAV welcomes questions, feedback,
and guidance from GRVA.**