

Invitation to the 16th Session of the GRVA Informal Working Group on Functional Requirements for Automated Vehicles (FRAV)

The 16th session of the FRAV informal group is scheduled for 6 July 2021 between 12:45 and 15:15 CET via web conference. Further details and participation can be found in the agenda as posted on the [session wiki page](#).

Session Objectives

This session is expected to receive status reports on the current workstream tasks:

1. Derivation of DDT-relevant general safety requirements from safety topics
2. Human roles in ADS vehicle usage: Differentiation between “users” and “drivers”
3. Properties-based approach to ADS safety requirements regarding other road users
4. Initial input from FRAV to EDR/DSSAD on ADS-relevant data collection elements

The main objective of the session is to review the progress in light of FRAV’s stated intention to deliver general safety requirements to GRVA in September and to deliver timely input on data collection for ADS vehicles to the EDR/DSSAD informal working group.

Additional context

Safety topics and DDT

During the last session, the workstream pilot presented FRAV-15-08 and FRAV-15-09 regarding elaboration of the safety topics towards defining DDT-relevant general safety requirements. The workstream pilot anticipated further consideration of FRAV-15-09 towards reaching preliminary agreement on initial proposals for general safety requirements. The aim of this FRAV-16 discussion is to receive an update on this work, including consensus on initial proposals for requirements that may have emerged from the workstream discussions. For these outcomes (as well as similar outcomes from the workstreams below), FRAV plans to hold a two-day session during 26-27 July to receive comments and, where possible, reach agreement on initial proposals for general safety requirements.¹

ADS users

During the last session, the expert from RDW (on behalf of the workstream pilot) presented FRAV-15-06. The workstream updated and simplified its analysis of ADS user roles with three levels referring to “driver” and three levels referring to “user”. These roles involve various degrees of human interaction with the driving system, including human roles in the operation of the vehicle. The task pilot has been asked coordinate discussions towards distinguishing between instances where the ADS is performing the DDT (i.e., operating the vehicle without any human involvement) and instances where human involvement in operating the vehicle would be required. The aim of the FRAV-16 discussion is to agree on baseline definitions for “user” and “driver” to enable safety requirements to indicate clearly whether the system is performing the DDT or has shifted to some lower operational mode (i.e., the user has assumed a role in

¹ “General safety requirements” are a step towards drafting requirements with specific criteria. The initial goal is to prepare an interim list of objectively verifiable aspects of ADS performance that address the safety topics and comments consolidated in FRAV-12-08. The general safety requirements list is intended to supersede the safety topics list as the basis for FRAV work. After the GRVA session at the end of September, FRAV would work on a list of requirements with technical specifications (limits, criteria, values, etc.) where appropriate to supersede the list of general safety requirements.

the operation of the vehicle for some reason). From these baseline definitions, other user roles can be defined as needed in drafting human-factors-related requirements.

Other Road Users (ORU)

During the last session, the FRAV secretary (on behalf of the workstream pilot) presented FRAV-15-11 summarizing preliminary conclusions based on FRAV-15-10 (preliminary input on ORU physical, functional, and behavioral properties). The research indicates that ORU share common properties but also have unique or special properties in some cases. Physical properties (such as size/dimensions, markings, lighting and/or audible signals, etc.) enable recognition of ORU in terms of their functional and/or behavioral properties. For example, certain markings and signals indicate (often under vehicle and traffic laws) an emergency vehicle authorized to behave in certain ways (e.g., pass through intersections against a red light) and obliging certain responses from other vehicles in the roadway (e.g., yielding the right of way). The research suggests a properties-based approach to safety requirements relevant to ORU generally involving requirements to detect safety-relevant physical properties and to respond in accordance with traffic laws and ORU safety needs. The task pilot expects to provide further information on ORU properties and their application to general safety requirements. The aim of the FRAV-16 discussion is to confirm whether FRAV wishes to apply this approach to the development of the draft general safety requirements to be delivered to GRVA in September.

EDR/DSSAD

During the last session, FRAV received FRAV-15-12 outlining a classification framework for ADS data collection elements. The workstream pilot noted that work on data elements for in-service monitoring and reporting is under discussion but that a consensus proposal for such elements has not yet emerged. The presentation provided categories for and lists of data elements useful primarily in crash analysis and reconstruction (based on UN R160 and SAE J3197). Given the urgency Contracting Parties have expressed regarding the addition of ADS elements to the UN R160 EDR regulation, the aim of the FRAV-16 session is to seek consensus on recommendations that FRAV may provide to EDR/DSSAD on this matter.