

Report of the Ninth Meeting of the Informal Working Group on Functional Requirements for Automated Vehicles (IWG FRAV)	
Venue	Web conference
Date	12 January 2021
Documents	Submissions for the session can be found on the FRAV-09 UNECE wiki page .
Status: Draft	

<i>Agenda and previous session report adopted.</i>	With the US co-chair presiding, FRAV adopted the draft agenda (FRAV-09-01) without change. FRAV adopted the report of the 7 th session (FRAV-07-02) without revision and agreed to consider adoption of the report of the 8 th session (FRAV-08-02) during its next session.
<i>FRAV reviewed the group's status and consensus to date.</i>	On behalf of the FRAV co-chairs (China, Germany, USA), the presiding co-chair presented a review of the FRAV working consensus to date (FRAV-09-03). Per the standing FRAV practice, stakeholders were invited to inform the secretary of any questions or disagreements with the listed points of consensus.
<i>FRAV agreed that ADS performance should be consistent with safe human driving behaviors while avoiding driving errors and introduction of unreasonable risks.</i> <i>FRAV cautioned that the link between human and ADS behaviors is indicative, not literal.</i>	<p>FRAV further considered a revised guiding principle for ADS safety:</p> <p style="text-align: center;">ADS performance should be consistent with safe human driving behaviors while avoiding human recognition, decision, and performance errors and the introduction of unreasonable ADS-specific risks.</p> <p>Stakeholders raised concerns over misinterpretation. FRAV understands “consistent with” as meaning behavior compatible with safe human driving behaviors while recognizing that ADS is a technology involving substantially different principles and mechanisms. Therefore, the reference to safe human driving is limited to ensuring the smooth introduction of ADS vehicles into traffic presently dominated by human-driven vehicles. However, some crashes involve human factors that may not be addressable through these technologies. In this sense, data on human driving behaviors may provide useful norms but needs to be applied intelligently and not taken literally as suggesting “human” behaviors.</p> <p>FRAV understands the general aim for smooth introduction of automated driving into current traffic, elimination of causes of crashes due to human error where possible, and attention to foreseeable risks such as damage, malfunction, abuse, or misuse. Nonetheless, FRAV proposed that the guiding principle be further considered to ensure correct interpretation.</p>
<i>FRAV agreed on six criteria for validating eventual ADS safety requirements.</i>	<p>FRAV agreed that the eventual requirements for ADS should be validated against six criteria:</p> <ol style="list-style-type: none"> 1. Improve road transport: Contribute to road transport safety and efficiency 2. Performance based: Define minimum performance thresholds/ranges 3. Technology neutral: Avoid design/technology specifications 4. Measurable: Objectively verifiable or measurable 5. Feasibility: Reasonably attainable given the current state of ADS technologies 6. Social acceptance: Yield performance that meets public expectations

<p><i>FRAV agreed that the 40 safety topics required a holistic approach to address interdependencies.</i></p> <p><i>The secretary was instructed to provide a document for soliciting and consolidating comments.</i></p>	<p>FRAV noted stakeholder submissions regarding Document 5 and the list of 34 safety topics and six subtopics derived from the five starting points (FRAV-09-06, FRAV-09-07). Pursuant to the discussion during the previous session, FRAV considered the initial starting point (the ADS should drive safely) and the ten subtopics derived from that starting point.</p> <p>During the previous session, FRAV had concluded that the topics could be discussed individually towards defining specific safety requirements. However, upon further consideration, FRAV noted that the topics were often interdependent and addressed common safety aspects from complementary perspectives. Therefore, FRAV concluded that a more holistic approach to elaborating the current safety topics was desirable.</p> <p>Given the diversity and complexity of issues, the group considered ways to efficiently make progress towards defining safety needs, verifiable performance elements, and criteria for verifying performance against defined requirements.</p> <p>The limitation of discussions to relatively short web conferences due to the prevailing health and travel restrictions made discussion of the list as a whole infeasible. Commenting on Document 5 resulted in multiple commented versions of the document. Reconciling the comments was proving difficult within the short sessions.</p> <p>FRAV concluded that Document 5 should be used to document consensus views. FRAV agreed develop separate (“messy”) documents to solicit and consolidate stakeholder input and draft proposals towards reaching consensus on issues raised. The secretary was directed to provide a document to gather input on the list of safety topics (FRAV-09-08 provided following the session). FRAV will then seek a methodology to consider the consolidated comments until consensus can be reached.</p> <p>FRAV considered a proposed work plan based on the outcome of the previous session; however, the FRAV consensus that a more holistic approach to the topics was needed rendered the proposal moot.</p>
<p><i>FRAV agreed to consider a draft document for submission to GRVA during its next session.</i></p>	<p>FRAV considered its preparations for the February 2020 GRVA session. FRAV agreed that a document outlining its approach to ADS safety requirements, views on interrelationships with the work of the VMAD informal group, and outlook for work through to the March 2022 WP.29 session should be prepared.</p> <p>The FRAV secretary was directed to prepare and circulate a draft document for discussion and approval at the next FRAV session scheduled for 27 January.</p>