

QUESTIONS AND ANSWERS

Regarding the proposals for amendments to UN Regulations Nos. 13, 13-H and 79 (ECE/TRANS/WP.29/GRVA/2024/8, /9 and /10)

This document was prepared by the experts of the task force on regulatory fitness for automated driving systems (TF FADS), based on the proceedings of the 11th, 12th and 13th meetings of the task force.

1a. Scope of the Regulations and “dual-mode” vehicles

Question: GRVA agreed during its 17th session, and as requested by FADS, that the amendment proposals should only tackle “dual-mode vehicles”. However, the proposals as submitted only mention “manual controls”. Why did FADS not strictly follow the guidance from GRVA?

Answer: The purpose of limiting the scope of these first amendments was to benefit from the fact that vehicles must be equipped with the manual controls expected by the Regulations as they are currently worded, which drastically reduces the number of paragraphs to amend while still bringing helpful clarifications. Some of these clarifications benefit not only automated vehicles where transitions between automated and manual modes occur only when the vehicle is stopped, but also automated vehicles whose ADS requires a fallback user.

Furthermore, the task force originally anticipated that tackling ADS with fallback users would require a significant effort when amending Regulations, e.g. transitions of control. However, it is now understood that most of these difficulties will be a matter of compliance to the ADS Regulation and that, from the perspective of non-ADS Regulations like UN Regulation No. 13, there is at all times only one entity responsible for the dynamic driving task (either a human driver or an ADS).

Finally, the notion of “dual-mode” vehicle as it exists in certain countries or regions is not recognised by the FRAV/VMAD integration group at this stage. FADS thus preferred to avoid using this definition if not strictly necessary.

For the three reasons above, the opinion of the task force is therefore to include all ADS vehicles equipped with manual controls, and not only vehicles which do not require a fallback user, or where transitions of control only occur when the vehicle is in motion.

1b. Scope of the Regulations and Automated Lane Keeping Systems

Question: Why do the proposals exclude vehicles equipped with an Automated Lane Keeping System (ALKS), as defined in UN Regulation No. 157?

Answer: The intention of the proposed amendments was to not affect vehicles approved under UN Regulation No. 157. Consequently, ALKS vehicles were exempted from the proposed “Special provisions” on ADS vehicles. Otherwise, technical characteristics of already approved ALKS vehicles could be affected, e.g. on the detection of mechanical failures in the steering system. However, the clarifications proposed to paragraphs other than the “Special provisions” do apply to ALKS vehicles.

Furthermore, ALKS vehicles already comply with harmonised requirements of a UN Regulation on ADS, namely UN Regulation No. 157. Therefore, the paragraphs (such as 5.3.1. in R13) requiring demonstration of compliance with national/regional regulations for ADS and the required declaration of the manufacturer are redundant.

Since the proposed requirements should apply to all ADS vehicles with manual braking / steering controls immediately, it was considered most appropriate to simply exclude vehicles approved according to UN Regulation No 157, while moving forward with supplements instead of series of amendments.

2. Scope of the Regulations and exclusion of driverless vehicles

Question: Why do the proposals exclude automated vehicles without manual controls from the scope of the amended Regulations? What should manufacturers do until the Regulations are further amended to accommodate all automated vehicles?

Answer: vehicles without manual controls already cannot comply with the Regulations and may require different interpretation of certain requirements: this is only clarified by our amendment proposals. Additionally, the proposals only use the tools provided by each Regulation to define the vehicles within its respective scope (i.e. vehicles equipped with manual braking or steering controls). In the meantime, type approval authorities which seek to approve fully driverless vehicles should do so under the Procedure for exemption approvals concerning new technologies, as set out in Schedule 7 of the 1958 Agreement.

Furthermore, the mention of Categories M and N in the added requirements are to avoid the unintentional removal of trailers from the scope of UN Regulations No. 13 and 79.

3. Safety of ADS and physical testing

Question: Why does FADS consider that compliance with the Annexes for Complex Electronic Vehicle Control Systems (CEL), when the vehicle is driven in automated mode, is sufficient to demonstrate the safety of the whole ADS regarding the Regulations? Why are no physical tests required?

Answer: the safety of the ADS itself is not covered by CEL Annexes: the ADS must comply with relevant national and regional requirements (and/or ADS Regulations like UN Regulation No. 157).

4. Supplements vs. new Series of amendments

Question: What prompted this choice of Series of amendments to supplement? Why did FADS not choose to draft supplements to multiple Series of amendments, or to draft new Series of amendments to the Regulations?

Answer: the proposed amendments apply only to ADS, which is a new technology that is not present on existing approvals (with the exception of ALKS, cf. question 1b). It was therefore agreed by the experts that supplements were preferable to new Series of amendments, which will be reserved for a full coverage of ADS.

Furthermore, the task force believes that new technologies such as ADS should generally follow the most recent level of requirements from the latest Series of amendments (13R13, 13HR01 and 79R04). However, GRVA usually updates simultaneously several series of amendments to UN Regulations No. 13 and 79, which is why FADS inserted square brackets around the Series of Amendments to supplement in R79 and R13: this leaves GRVA with the option to update either only 79R04 (resp. 13R13) or both 79R03 and 79R04 (resp. 13R11, 13R12 and 13R13).

In general, adopting a supplement to only the latest series of amendments to a Regulation might complicate the management of future supplements which simultaneously amend several series of amendments to that Regulation.

5. Conformity of Production and Periodical Technical Inspections

Question: Why are there no provisions regarding Conformity of Production or Periodical Technical Inspections in the proposals?

Answer: Compliance regarding the Conformity of Production of a vehicle is determined by the compliance to the Regulation itself. The task force believes that the current proposals are self-sufficient regarding CoP.

Furthermore, while Periodical Technical Inspections might require special provisions for driverless vehicles, the current proposals only include vehicles equipped with manual controls: PTI for the amended Regulations can therefore be carried out without any difference compared to a conventional vehicle.

6. Categories for automated vehicles

Question: Is it not premature to submit amendment proposals, despite the fact that work is only starting regarding the potential redefinition of categories for automated vehicles, carried out by a joint task force between GRSG and GRVA?

Answer: the mandate received from WP.29 is to draft amendments as soon as possible, independently from the work on categories of vehicles. Additionally, the expert groups on regulatory fitness for ADS share the common position that modifications to categories should be as simple as possible¹, and they should therefore have a low impact on the amendments proposed here. TF-FADS will work closely with the task force on vehicle categorisation (GRVA TF AVC). Depending upon the outputs of the task force on vehicle categorisation, further amendments to R13, R13-H and R79 may be needed.

7. Transmission of signals

Question: Why are warning signals simply transmitted to the ADS, and never handled specifically within the Regulations?

Answer: It is understood that the ADS is responsible for the whole Dynamic Driving Task. In the Regulations for braking and steering under the purview of GRVA, warnings and other signals are only issued to the driver (as opposed to passengers or other vehicle users). Furthermore, Regulations should not mix ADS requirements and non-ADS requirements: inserting requirements regarding when and how to display signals would constitute an additional requirement which is not in the spirit of the work done by FRAV.

8a. Meaning of “actuation” and “control”

Question: What are the meanings of the words “actuation” and “control” as written in the amended Regulations?

Answer: “Control” could be interpreted to mean an action (as in “control of the vehicle”), or the hardware allowing that action (“steering control”). In some requirements, this notion was problematic in the context of an ADS, and those requirements were amended accordingly to clarify when the word “control” should be linked to physical components, as in paragraph 2.3.1. of UN Regulation No. 79.

“Actuation” is understood to be an action which can be performed by a driver or by an ADS.

¹ See document [WP.29-191-29](#) “Joint statement of the expert groups on regulatory fitness for automated driving systems regarding the establishment of a task force on categories for automated vehicles”

8b. Behaviour of physical controls during ADS operation

Question: Why are the amendment proposals not dealing with the behaviour of the manual steering and braking controls (e.g. pedals and the steering wheel) of the vehicle when the ADS is active?

Answer: Requirements for how manual vehicle controls should behave when the ADS is active may differ depending on the type, or the use case of the ADS. For this reason, it is more appropriate for this to be regulated by ADS requirements, and this issue is already covered by the FRAV guidelines.

9. Type approval of trailers for automated vehicles

Question: How do these proposals affect trailers designed for automated vehicles? Can they be the object of a type approval with these amended Regulations?

Answer: trailers are not motor vehicles, and therefore are not affected by the proposed amendments. Signals from trailers, trailers with steering axles or other interaction between a trailer and an ADS are to be handled in ADS Regulations like R157, or potentially in R55 for provisions regarding the attachment of the trailer to a towing vehicle equipped with an ADS.

10. Rationale for which new definitions to include

Question: Why do the proposals only include definitions for ADS and DDT in the proposals, and not other important definitions such as “operational function” or “ODD”?

Answer: These two definitions are sufficient to understand what an ADS is, in the context of the amended Regulations. Furthermore, unlike other definitions like “ODD” or “operational function”, the current definitions for ADS and DDT are unlikely to change.

The expert groups on regulatory fitness for ADS advocate for the existence of a central document which would allow the easy inclusion of any useful definition related to ADS without lengthening the “Definitions” section of non-ADS Regulations.

11. Rationale for which requirements to amend

Question: Why were certain requirements, such as paragraph No. 5.2.1.26.2.1. in R13, amended with regards to their fitness for ADS vehicles, but not other requirements referring to the word “driver” or other similar keywords?

Answer: Some of the requirements only apply to operation or actuation by a “driver” (whose interpretation by default should always be “human driver”) with no concrete risk of misinterpretation: the task force consider these requirements as satisfactory in their current state, when considering only automated vehicles with manual controls.

Conversely, other requirements using the word “driver” do apply when an ADS is operating the vehicle: these requirements have been amended in the proposals.

12a. Complex electronic control systems

Question: Why is the ADS not considered to be part of the complex electronic control system, according to the CEL annexes?

Answer: CEL Annexes in Regulations on braking and steering are not appropriate for evaluating an ADS.

Additionally, while ADS correspond to all aspects of CEL, they are considered as “overriding systems” outside of the scope of the Regulations on braking and steering. Only the

transmission links between the ADS and the braking or steering system are considered within the context of these CEL Annexes.

Current definition of CEL in R79 Annex 6 is clear. R13/R13-H is not clear but solutions are proposed in documents GRVA/2023/10 and GRVA/2024/14. In the meantime, the proposed paragraphs 5.3.2.1. to provide clarity on the application of CEL Annex requirements.

12b. Automatically commanded braking

Question: why is the braking demand from the ADS not considered to be automatically commanded braking?

Answer: the notion of automatically commanded braking did not envision systems such as ADS. In order to keep the option to set separate requirements for ACB and ADS in the future, the task forces proposed to consider ADS as a separate type of braking action.

13. Autonomous steering system (UN R79 only)

Question: Why is the ADS not considered to be an autonomous steering system?

Answer: The definition of "Autonomous Steering Systems" (ASS) under current (non-amended) versions of R79 is closest to what may be considered an automated driving system. However, the definition specifies these are systems that only alter the path of the vehicle in response to signals transmitted from offboard the vehicle, ruling out most ADS designs. Furthermore, the current definition of ASS may include systems which would not be considered ADS. Therefore the task force kept the existing definition of ASS to ensure the continued exclusion of these other systems, and decided to treat ADS separately. The task force considers that having separate definitions for ASS and ADS brings clarity to UN R79.