European Transport Safety Council

18 March 2024

To: European Commission, DG GROW

CC: European Commission, Road Safety Coordinator
European Commission, DG MOVE, Road Safety Unit

Subject: ETSC concerns regarding Commission Implementing Decisions allowing hands-free assistance driving systems via the exemption procedure

Dear Mr. Nicklas,

It has been brought to our attention that the Technical Committee – Motor Vehicles (TCMV) is expected to vote, during its meeting tomorrow on 19 March 2024, on Commission Implementing Decisions that would allow certain hands-free assisted driving systems to be approved for the European Union's market through exemptions in line with Article 39 of the EU Type Approval Regulation (2018/858).

With this letter we strongly call on the European Commission to not put forward the Commission Implementing Decisions for a vote nor to adopt them.

The following reasons motivate our call on you:

1. *The precautionary principle should be applied*, in line with Article 191 of the Treaty on the Functioning of the European Union (TFEU). The precautionary principle states that if it is possible that a given policy or action might cause harm to the public or the environment and if there is still no scientific agreement on the issue, the policy or action in question should not be carried out.

   There is currently no scientific agreement that allowing drivers to take their hands off the steering wheel while using assisted driving systems is safe.

   The present academic literature strongly suggests that usage of *hands-on* assisted driving systems encourages drivers to at times disengage from the driving task, become inattentive, and also engage in non-driving-related activities (NDRA) such as mobile phone use. This poses significant risks to road safety and thus the public. The present academic literature further suggests that driving with *hands-off* versions of assisted driving systems further aggravates the tendency to engage in NDRA.[1]

   It is also known that problems of overreliance and mode-confusion pose risks to road safety, where drivers using hands-on and hands-off assisted driving systems overestimate the capabilities of the system and intentionally or unintentionally use it as an automated driving system.[2] In this regard,

[1] A review of the presently available academic literature is available in: Carsten, Perrier and Jamson. (May 2023). Driver attentiveness to the Driving Task During ADAS Use. https://bit.ly/3TjimwM

[2] Dutch Safety Board. (2019). Who is in control? https://bit.ly/2LESsV2 ; IIHS. (2022/2024). Habits, attitudes, and expectations of regular users of partial driving automation systems. https://bit.ly/3IXT3g5

it is especially worrying that respectively 53% and 42% of regular users of two hands-free assisted driving systems available on the US market indicated they were comfortable treating their assistance systems as self-driving.[3]

We are aware that industry-sponsored research has concluded that hands-off driving would pose no greater safety risks than hands-on driving.[4] However, given that a significant number of its conclusions are at odds with the results of other research, further independent research should be conducted to understand the conflicting findings fully. It can also be noted that the on-road observations in the industry study were conducted with a safety co-driver present in the vehicle, which would tend to inhibit drivers from engaging in non-driving related tasks such as handheld use of a mobile phone.

There is therefore currently no scientific agreement that hands-off driving is safe, and as such we call for the precautionary principle to be applied until scientific agreement is found.

2. *An exemption would be premature given the on-going regulatory discussions on hands-off driving at the UNECE WP.29's Task Force on ADAS.* As part of the Phase 2 activities for the so-called Driver Control Assistance Systems (DCAS), TF ADAS is currently discussing the possibilities to regulate the hands-free operation of DCAS.

   At its latest session held last week on the 15th of March 2024, there was no agreement within the task force to regulate hands-free driving. Also at this session, ETSC expressed its concerns regarding the risks to road safety posed by allowing hands-free driving.

   Given that there is no agreement within the task force tasked with discussing the desirability of hands-free driving (and if found desirable, tasked with drafting the necessary regulatory safeguards for the safe operation of hands-free assisted driving systems), it is in our view premature for the European Commission to already approve such functionality via an exemption procedure.

3. *UN Regulation 79 should not be used as a safety benchmark for assisted driving systems.* It has come to our attention that a main argument in support of approving the exemptions is that these hands-free systems with a (visual attention) driver monitoring system would not be less safe than a hands-on assisted driving system approved in accordance with UN Regulation 79, which allows the driver to take their hands off the steering wheel for 15 seconds and which does not require visual attention monitoring.

   However, the provisions of UN Regulation 79 are inadequate to ensure the safety of hands-on assisted driving systems, notably in relation to human factor aspects, as also concluded by the previously-referenced Dutch Safety Board report "Who is in control?".[5] UN Regulation 79 should therefore not be used as a benchmark for what is considered safe, and should swiftly be phased out given the upgraded provisions of the UN Regulation on DCAS as recently approved by GRVA.

   Moreover, the comparison with UN Regulation 79 systems foregoes to take into account the potential safety performance improvements of hands-on systems that include (visual attention) driver monitoring. This was also one of the criticisms of the previously mentioned industry-sponsored research, which had not investigated differences in safety performance between hands-off and hands-on systems with similar (visual attention) driver monitoring systems.

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[3] IIHS. (2022/2024). Habits, attitudes, and expectations of regular users of partial driving automation systems. https://bit.ly/3IXT3g5

[4] VDA. (2023). FAT-Schriftenreihe 369. Level 2 hands-off –Recommendations and guidance. https://bit.ly/43iL1Xf

[5] Dutch Safety Board. (2019). Who is in control? https://bit.ly/2LESsV2

4. *The safeguards of the to-be-exempted driving assistance systems were recently rated as "poor".* The US Insurance Institute for Highway Safety (IIHS)[6] released on 12 March 2024 their 'partial automation safeguard ratings'. The IIHS states that "[p]artial driving automation is a convenience feature that is meant to make long drives easier. There's no evidence that it makes driving safer, and, in fact, it can create new risks by making it easier for the driver's attention to wander. For this reason, it's essential that all partial driving automation systems incorporate robust safeguards. For our partial automation safeguard ratings, we evaluate driver monitoring, attention reminders, emergency procedures and other aspects of system design. A system may be assigned a rating of good, acceptable, marginal or poor for its safeguards."[7]

   Out of the 14 systems tested, the IIHS considered no currently available systems to be good. Only one system is considered to be acceptable, two further systems are rated marginal and 11 systems are rated as poor.

   The safeguards of the assisted driving systems of the two manufacturers whose systems we understand are the subject of the exemption procedures were rated by the IIHS as "poor".[8]

We also noted the Commission Implementing Decision related to the 'Extended Lane Change Assistant' system. We also have human factors-related concerns regarding the use of the driver's gaze as a driver-confirmation method, including for example the robustness of the system to accurately differentiate between confirmatory gazes and coincidental gazes.

We strongly feel that the exemption procedure is not the appropriate method to use for making policy decisions on which assisted driving systems should be permitted on European roads, even on this case-by-case basis, especially in advance of full discussions on, and regulation of, new systems at UNECE.

On the topic of lane changes, we would like to use this letter to inform you that we are gravely concerned about allowing automated lane changes for assisted driving systems, currently being discussed at TF ADAS, for reasons in line with the arguments set out above:

1. We are unaware of any scientifically proven safety benefit of such functionality;
2. We are unaware of any scientific evidence that confirms such functionality is safe and on the contrary, scientific literature suggests it may aggravate the safety risks of assisted driving systems. Given the lack of scientific agreement on its safety, the precautionary principle should again be applied;
3. The IIHS' partial automation safeguard ratings require systems to have either driver-initiated or driver-confirmed lane changes. IIHS' senior research scientist motivated their justification in writing to us as follows: *"While the debate still rages about whether vehicle-autonomously-initiated-and-executed manoeuvres have a crash risk, no one knows what safeguards are "enough" to keep the driver adequate in the loop, which is what matters at the end of the day. Many people, myself included, think that as long as the system is partially automated it would be a design flaw for the system to do something without the driver's involvement. What safeguards could be in place with such a functionality that would truly ensure the driver is aware of their responsibility and is prepared enough for the manoeuvre to intervene if necessary? We just don't know. The IIHS has taken the stance that a safeguard for this problem is to place limits on the functionalities that these*

[6] The Insurance Institute for Highway Safety (IIHS) is an independent, nonprofit scientific and educational organization dedicated to reducing deaths, injuries and property damage from motor vehicle crashes through research and evaluation and through education of consumers, policymakers and safety professionals.
[7] IIHS. Website: partial automation safeguard ratings. https://www.iihs.org/ratings/partial-automation-safeguards
[8] Ibid.

systems have, which includes automated lane changes. Those limits require the involvement and verification of the driver for the initiation of manoeuvres. This is one category of our ratings program on partial driving automation."

ETSC presented their concerns regarding system-initiated manoeuvres, and automated lane changes in particular, during the session of TF ADAS held last week. The presentation with more detailed argumentation can be downloaded as ADAS 29-11 from the documents page for the session.[9]

With this letter we strongly call on the European Commission to not allow automated lane change functionality for assisted driving systems on European roads.

We remain at your disposal to discuss the concerns set out in this letter.

Yours sincerely,

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Prof. Oliver Carsten
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ETSC expert

[9] https://wiki.unece.org/display/trans/ADAS+-+29th+session