VOLKSWAGEN

GROUP OF AMERICA

Ms. Sophie Shulman
Acting Administrator
National Highway Traffic Safety Administration
1200 New Jersey Ave., SE
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June 24, 2024 Date

Subject: Petition for Reconsideration in Response to Docket No. NHTSA–2023–0021; 89 Fed. Reg. 39686, May 9, 2024

Dear Acting Administrator Shulman,

Volkswagen Group of America (VWGoA) is respectfully petitioning for reconsideration of certain portions of the Final Rule published by the National Highway Traffic Safety Administration (NHTSA) establishing the new Federal Motor Vehicle Safety Standard (FMVSS) 127; Automatic Emergency Braking (AEB) for Light Vehicles. VWGoA supports an FMVSS for AEB, as long as the standard is reasonable, practicable, and measurably improves safety on our nation's roads. This is evident by our commitment to the industry AEB Memorandum of Understanding (MoU) agreement that we signed onto in 2016 and to which we became fully compliant to in 2019 for the Audi brand and 2020 for VW; both well ahead of the September 2022 target.

In addition to our comments in this petition, VWGoA supports the petition for reconsideration submitted by the Alliance for Automotive Innovation (Auto Innovators). The content of this submission is intended to reinforce the petition for reconsideration submitted by the Auto Innovators, as well as present additional topics for the Agency's consideration.

VWGoA is encouraged by NHTSA's decision to implement changes in the Final Rule as compared to the Notice of Proposed Rulemaking (NPRM), such as the extension of the compliance date to five years after publication of the final rule, and the relaxation of the location requirements for Forward Collision Warning (FCW) visual icon. However, VWGoA respectively petitions for reconsideration in line with the Auto Innovators submission to address portions of the Final Rule that are either not practicable, not reasonable, or need additional clarifications.

- The strict no-contact requirements at the proposed speeds in both the car-to-car and car-to-pedestrian tests are impracticable and will likely lead to unintended consequences that may be unsafe. For example, it's difficult to predict the precise intention of a pedestrian's intended travel path. At the required maximum speed of 60 km/h in the Pedestrian Automatic Emergency Braking (PAEB) crossing scenarios, braking must be applied early to meet the no-contact requirements. Between the onset of braking and throughout the braking duration, the pedestrian can change their intended path or abruptly

stop before entering the path of the vehicle. Such a scenario will undoubtably lead to higher false positive rates and rear end collisions. As an alternative to the no-contact requirement, VWGoA proposes an allowance of impact speeds up to 10 km/h. The Final Rule does not require AEB functionality at speeds below 10 km/h, so this inherently means that NHTSA is okay with impact speeds up to that threshold. Requiring complete avoidance contradicts the specification of a minimum speed requirement of 10 km/h for the AEB system.

- The Final Rule does not address the impracticality of performance requirements needing to be met in every test trial. The requirement does not specify a minimum or maximum number of test runs or allow for the requirement to be met over multiple trials. Other braking standards such as FMVSS 135 recognizes that braking performance varies, and the standard allows for compliance to be met within a specified allowance of test trials. In addition, NHSTA's expectation that "…a manufacturer pass all test runs if NHTSA chooses to run the same test several times..." implies that a vehicle can be tested unlimited times until one failed test trial occurs, in which case the vehicle would be non-compliant (89 FR 39731). This makes the no-contact requirement even more challenging. A practicable alternative approach should define a set number of test runs and allow for the inherent variability of these systems. For example, if the vehicle fails the first test run, it could then be required to pass three subsequent runs. This equates to a 75% pass rate which exceeds even the current 71% (5 out of 7) New Car Assessment Program (NCAP) requirements.

- The requirement to illuminate the malfunction indicator lamp (MIL) under all conditions of malfunction including sensor degradation, is impracticable and does not have objective requirements. "Malfunction" is not defined, requiring a MIL under sensor degradation conditions goes beyond the scope of current FMVSSs, and the requirement to detect owner modifications that take the AEB system out of compliance is boundless with no objective performance requirements.

- Requiring the vehicle to detect specific scenarios to automatically deactivate the AEB system is impractical and unnecessary. There are various operating states (e.g. racetrack usage, off-road vehicles without low range/gear options, road infrastructure causing false positives, support vehicles for cycling races, etc.) that would be difficult to automatically detect, and therefore a manual deactivation would be required. Presumably and understandably, a concern of NHTSA is that a mass number of drivers will deactivate their AEB system if given the manual option. However, this is unfounded when evaluating real world usage of existing AEB systems. VWGoA conducted an internal study looking at how often drivers deactivated their AEB system. In a dataset of 30,000 UN ECE R-152 compliant vehicles with over 12 million trips, about 0.2% of the vehicles had AEB deactivated repeatedly (>10x). This demonstrates that there is not a widespread issue of drivers manually deactivating the system. Please see Appendix A of this submission for more details regarding this study. If additional automatic detection mechanisms need to be integrated in the system to

identify every possible situation of functional limitations, the availability of the system may be reduced, which contradicts the goal of the rule.

- The Final Rule does not have an objective test methodology for the requirement to suppress audio when the FCW is audibly presented. It is unclear what audible reference/baseline the regulation will compare the FCW audible tone to during compliance testing. The means and conditions by which the audible tone and baseline data will be recorded is unclear. For example, will windows be open during the testing which could cause extra noise due to the wind? Will the interior HVAC system and fans be active during the testing? Without objective procedures, it is impossible to certify compliance to this aspect of the Final Rule.

- NHTSA has not established a sufficient set of objective requirements for evaluating compliance with the FCW visual signal requirements. S5.1.1(b) of the Final Rule provides that the visual signal must be located in an ellipse formed around the forward-looking eye midpoint of the driver "as described in S14.1.5 of FMVSS No. 111." However, FMVSS No. 111 also specifies test conditions for the driver's seating position (S14.1.2.5.1 and S14.1.2.5.2), the seat back angle (S14.1.2.5.3) and the steering wheel adjustment (S14.1.7), none of which are specified or referenced in the Final Rule, raising questions about how NHTSA intends to set these parameters when testing for compliance with S5.1.1(b) of the Final Rule.

- It is unclear if the FCW visual icon must be completely located within the bounds of the elliptical cone, or if it is acceptable to have only a portion of the icon within the cone. Additionally, there seems to be a discrepancy between the regulatory language regarding the placement of the icon and the way NHTSA described the testing used to develop the requirement. In the preamble, NHTSA states, "Nine of the ten vehicles were found to have instrument panel center locations that reside within 18 degrees downward of the driver's forward horizontal line of sight." (89 FR 39723). This implies that NHTSA intended to allow the icon to be placed 18 degrees below the line of sight of the driver. However, S5.1.1(b)(1) of the regulation states "The visual signal must be located within an ellipse that extends 18 degrees vertically… of the driver forward line of sight." (89 FR 39780). It is not clear in the final rule if the 18 degrees in the vertical direction of the ellipse means ± 18 degrees from the driver's line of sight, or ± 9 degrees.

- The cost analysis as reported in the Federal Regulatory Impact Analysis (FRIA) does not represent the true cost of this Final Rule. For example, the Final Rule cannot be reasonably met with existing vacuum brake systems and the PAEB requirements under conditions of darkness may require infrared cameras. NHTSA did not factor in the costs for this additional hardware.

- Specifications for the brake pedal robot in the manual braking tests are not defined in the Final Rule. VWGoA appreciates NHTSA's clarification in the Final Rule that they will not be regulating how manual braking is applied. However,

differences in test equipment between the various NHTSA test contractors and the manufacturer will result in inconsistencies in vehicle performance.

On behalf of VWGoA, I would like to thank you for the opportunity to provide our feedback. If you have any questions or require further clarification, please feel free to contact me, or Myles Wilson, a member of my staff at 248-754-6435, at your convenience.

Sincerely,

Zorn Thomas VWPKI 1C4D1DCDB530EB48

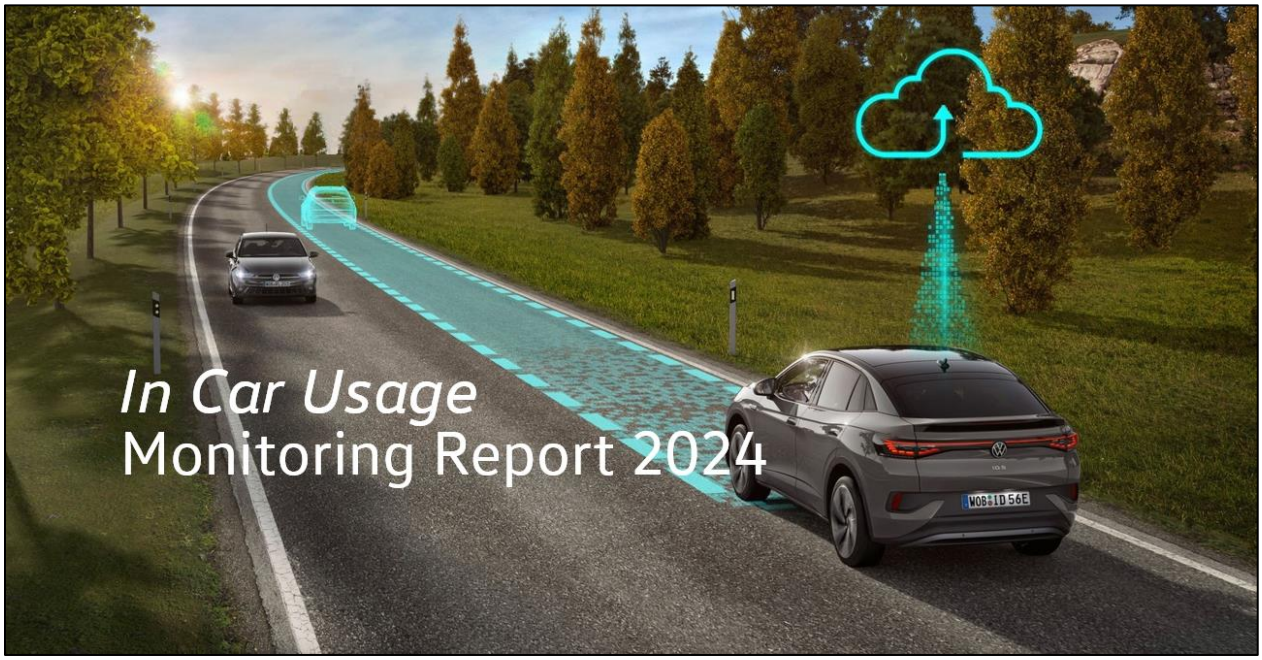
Digitally signed by Zorn Thomas VWPKI 1C4D1DCDB530EB48
Date: 2024.06.24 11:49:27 -04'00'

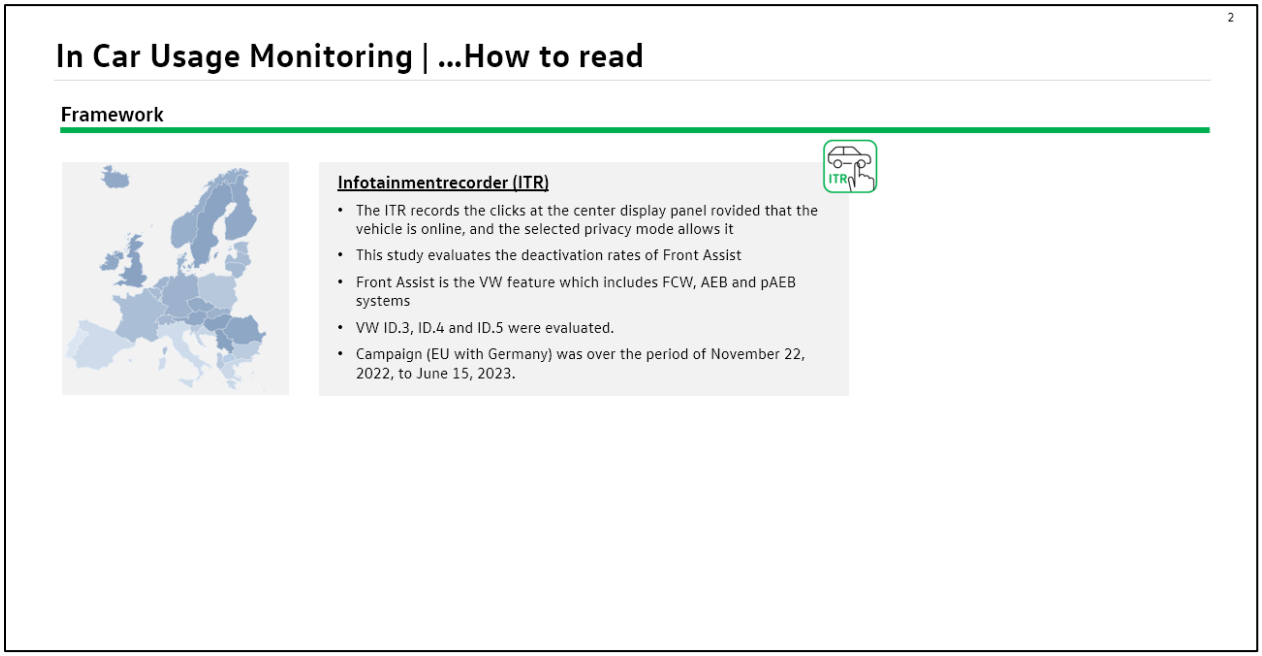
Thomas Zorn
Vice President
Vehicle Safety Office

Enclosed: Appendix A

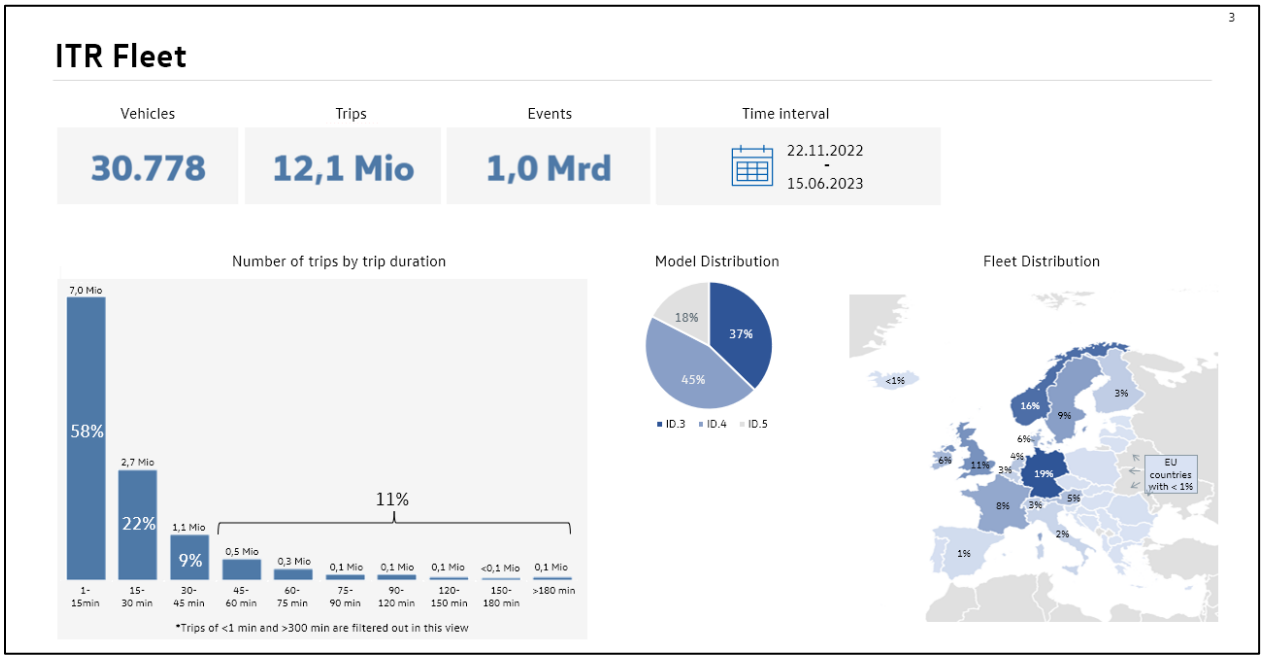
Appendix A

VWGoA Study Evaluating the Deactivation Rate of Front Assist

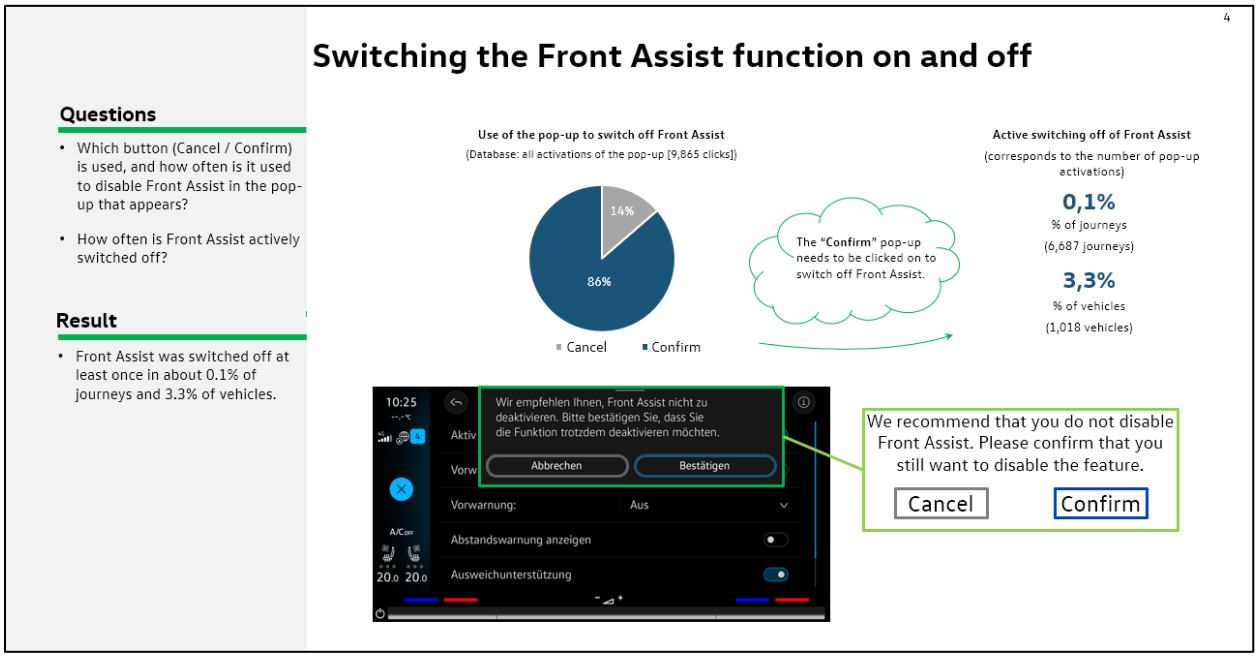




- The Infotainment-recorder (ITR) in the VW ID.3. ID.4 and ID.5 models was used to evaluate the deactivation of the VW Front Assist; the VW FCW, AEB and PAEB systems.
- European ID.3, ID.4 and ID.5s compliant with UN ECE R-152 regulations from the timeframe of November 22, 2022 to June 15, 2023 were used.



- 30,778 vehicles with 12.1 million trips comprised the data set.



- When the driver attempts to deactivate Front Assist, a message appears on the screen suggesting the driver to keep the system active and provides an opportunity to cancel the original request.
- Of those 30,000 vehicles, 3.3%, recorded instance of Front Assist deactivation requests.
- As shown below, of the total number of vehicles surveyed, only 0.2% of vehicles (66 in total) exhibited a Front Assist deactivation of greater than 10 times, while a single deactivation comprised only 2% of the vehicles.

Switching the Front Assist function on and off

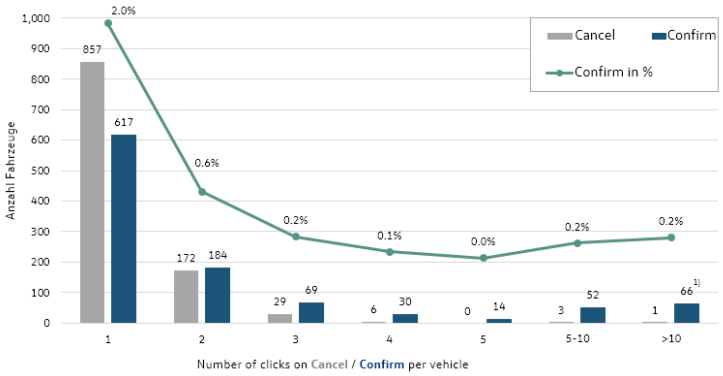
Question

- How often is the pop-up, which needs to be confirmed to disable Front Assist, operated for each vehicle overall during the entire analysis period?

Result

- There are only 66 vehicles in which the Front Assist is switched off very frequently (more than 10 times).

Differentiated view according to the number of uses of the pop-up (frequency per vehicle)
(In absolute numbers)



Reading example:

1) In 66 vehicles (equivalent to 0.2% of all vehicles), Front Assist was switched off more than 10 times over all journeys (click on Confirm).