



OICA Position on the current draft document for a UN R138.02

Concerns and Suggestions
for Improvement and Alternatives
18.09.2023



Scope of this Document

➤ **The position of OICA refers to the status of work that has been reported by the chair of the TF-QRTV during GRBP 78:**

- ❖ GRBP-78-11 Status Report
- ❖ GRBP-78-12 Actual draft text of regulation (actual stage of work)

➤ **With this presentation OICA**

- presents an overview of its position in regard to updating UN Regulation No. 138
- summarizes achieved results and open working topics after discussion in 78th GRBP
- compares the outcome of the taskforce with OICA's position for improving UN-R138
- addresses the societal discussion between vehicle safety and environmental impact

In the following slides bullet-points are formatted in regard to their content

- ✓ shows what has been already achieved with the work of the TF QRTV
- △ addresses open topics, which OICA wants to improve with the support of the TF QRTV



Safety of vulnerable Road users

OICA Position

UN Regulation No. 138

- (1) defines the minimum safety requirements.
- (2) should allow alternatives (other than AVAS) to meet the minimum safety requirements.
- (3) shall allow to surpass the minimum safety requirements.
- (4) must be limited to environmental requirements that cannot be addressed in the appropriate environmental UN Regulation No. 51.
- (5) needs to be improved in its robustness.



Safety of vulnerable Road users

OICA Position

1. UN-R 138 defines the minimum safety requirements.

- ✓ Mandatory minimum vehicle sound pressure levels in a speed range > 0 to 20 km/h for forward and backwards driving.
- ✓ Define stationary sound is not needed in parking position.
- ✓ Frequency composition to ensure perceptibility of AVAS at minimum vehicle sound pressure levels.
- ✓ Frequency shift to signify acceleration and deceleration of the vehicle.
- ✓ Any pause function is prohibited.
- △ Sound enhancement systems solely for the purpose of AVAS shall be turned off in a speed range > 50 km/h for forward driving (can as well be addressed by UN R51.03 Annex 7 definition for BEVs exclusions)

2. UN-R 138 should allow alternatives (other than AVAS)

to meet the minimum safety requirements.

- ✓ Alternative vehicle sounds not fulfilling the frequency requirements for perceptibility shall meet 3 dB higher minimum vehicle sound pressure levels.
- ✓ Audible reverse warning systems in accordance with UN Regulation No. 165 (avoid double regulation).
- △ Pay attention to “Technology neutrality” in order to enable innovative solutions.



Safety of vulnerable Road users

OICA Position

3. UN-R 138 shall allow to surpass the minimum safety requirements.

- ✓ Allow optional sound in stationary (“ready-to-move”) mode, such as ICE vehicles behavior with start-stop-systems.
- ✓ Allow driver selectable sounds for higher customer acceptance and reduction of masking effects.
- ✓ Allow sound level variation either automatically managed by the control unit or manually selected by the driver for increased perceptibility.
- ✓ Allow vehicle sound pressure levels in a speed range > 20 to 32 km/h for forward driving (to meet FMVSS141)
- Δ Allow vehicle sound in wider speed ranges for safety at changed boundary conditions, taking into account any manufacturer's obligations for product liability. Safety discussions regarding boundary conditions, such as but not limited to quieter roads or quieter tyres, and its effect on background noise have just been initiated.



Safety of vulnerable Road users

OICA Position

- 4. UN-R 138 must be limited to environmental requirements that cannot be addressed in the appropriate environmental UN Regulation No. 51.**
 - ✓ Additional microphone positions in opposite to the driving direction to limit unintended noise emissions.
 - Δ To avoid annoyance/irritation by an abrupt cut off/on of the AVAS-signal fade in/out areas can be implemented.
 - Δ To avoid double regulation regarding vehicle noise emission:
 - Δ Maximum vehicle sound pressure levels should only be defined in a speed range < 20 km/h.
 - Δ Vehicle noise emission limits in the speed range from 20 to 80 km/h should be excluded and addressed in UN-R 51.

- 5. UN-R 138 need to be improved in its robustness.**
 - ? Reduction of measurement uncertainties.
 - ✓ The use of maximum of third-octave levels better corresponds to human perception.
 - Δ Method changes (5 microphone arrays) provide benefits in regard to measurement uncertainties, but are still under discussion due to correct evaluation to capture the characteristics of human hearing.
 - Δ Level of safety regarding future developments (e.g, quieter roads and tyres) must not be hampered by environmental concerns.



Safety of vulnerable Road users

Possible Requirement Setups

