

Task Force on Quiet Road Transportation Vehicles (UN-R138-02)

Status Report
February 2023

TF Quiet Road Transportation Vehicles Overview

Targets

- Improve boundary condition for AVAS and interaction with R51
- Improve stability of test results
- Minimize uncertainty

Roles

- Chair: Germany
- Secretariat: OICA

Task Force QRTV homepage

[New TF-QRTV \(UN-R138-02\) - Transport - Vehicle Regulations - UNECE Wiki](#)

Participants

- CPs.: Canada, France, Germany, Switzerland, Spain, United Kingdom, Japan, China, European Commission, Norway
- NGO's: OICA, ETRTO, ISO, IMMA,

Timing

Hybrid meetings

04th TF QRTV November 8th 2022 Paris

05th TF QRTV Febr. 06th/07th 2023 Geneva

Next TF meetings planed for

March 2023

July 2023

November 2023

Target: Informal document for GRBP End of August 2023 and working document
January 2024

Current status

Step 1: (target WD January 2024)

- For more stability of the measurement values the expected revision of ISO 16254 will be implemented. Main change is a five microphone array instead of a single microphone on each side.
- The speed range for AVAS and maximum levels are under discussion. Environmental protection, safety aspects and worldwide harmonisation have to be considered.
- Clarification about requirements at operation conditions is needed
- A subgroup has been started to screen other related regulations (e.g. FMVSS 141) with the target to create a first proposal of the updated regulation text.

Step 2: (after 2025)

- Handshake with R51 to bring the maximum noise requirements into R51.0x [RD-ASEP]
- Options for noise adaption with smarter AVAS solutions e.g. camera/radar systems

ISO work for ISO 16254

ISO proposals will reduce measurement uncertainty, especially for the 1/3 octave requirements. These proposals have been independently evaluated by SAE. The measurement uncertainty is expected to be reduced by over 50%

Main changes to reduce measurement uncertainty in 1/3rd octave bands :

- Use 5 microphone array instead of a single microphone
- Signal processing will use “max hold” in approach area (-10 to 0m) in each 1/3rd octave.

Questions ?

Back up

R138 items of discussion

The TF group status of discussion is

- The minimum Sound Pressure Level [SPL] at certain speed ranges make sense from safety and harmonization point of view.
- To lower existing SPL for minimum values seem to be not possible from safety perspective
- A requirement for SPL at 30 km/h makes sense from safety and harmonization
- A maximum limit for stationary sound has to be considered
- Allow the possibility of Smart systems in a second step to optimize safety performance and reduce annoyance
- The R51.03 RD-ASEP limit values for EV and HEV can be the maximum for AVAS. These values will arrive from the monitoring phase. Until RD-ASEP is set into force a maximum limit in R138 is needed. After this maximum limits (driving /stationary should be liked to R51.

Guideline

- **TF-QRTV-01-03 Rev.1** **DRAFT Guidelines for a new TF on the Revision of UN R138.01**
- **A. Background**
- Technical items under QRTV (Quiet Road Transport Vehicles) are covered by the still existing GTR QRTV working group under the chairmanship of the USA with a mandate extended to December 2023.
- At the 74th and the 75th Session of the GRBP, several documents have been considered:
- From France to introduce a proposal that aimed to clarify the interpretation of the requirements concerning the variation of the sound emitted proportionally with the vehicle speed (ECE/TRANS/WP.29/GRBP/2021/14) and the testing requirements (GRBP-74-05).
- From Switzerland to prohibit operation of the acoustic vehicle alerting system (AVAS) outside the specification speed range from 0 km/h up to and inclusive 20 km/h (GRBP-74-02). The experts from Germany, ISO and OICA (GRBP-74-28) commented on this proposal.
- From ISO on technical measurement development for standard ISO 16254 (GRBP-75-03) and updated standard ISO 10844:2021 (GRBP-75-02-Rev.1/Add.1) to be included into UN Regulations Nos. 51, 117 and 138 (GRBP-75-02-Rev.1).
- From OICA on Draft of Terms of Reference (GRBP-75-42) for a potential new group working on UN-R138 and commented by China (GRBP-75-44).
- At the 75th Session of the GRBP, in view of a range of draft amendments to UN Regulation No. 138, GRBP agreed to start this work within a dedicated task force on quiet road transport vehicles (TF QRTV) which could later be transformed into an informal working group.

- **B. Objectives**
- Principle tasks of the new TF-QRTV (UN-R138-02) regarding the UN Regulation No.138 to be considered:
 - Relationship between different regulations/standards at international levels
 - Safety effectiveness
 - Review studies, if available
- Interaction with other UN Regulations
- No.51 (Noise Emissions; RD-ASEP), No.28 (Audible warning device), No.[16x] (Reverse Warning Sound), ...
- Review/clarification of technical specifications
 - Review different proposals done at the 74th and 75th Sessions of GRBP
 - Others
- Uncertainties
 - Work of ISO
 - Review test procedures
 - Interchangeability of the various options on test procedures (indoor versus outdoor, ...)
 - Apply principle of IWG MU
- Structure of UN Regulation No.138
 - Specifications for component approval (as in UN Regulation No.28) are a possibility
 - After-market management is an important question in chances and high risks
- Stringency of AVAS
 - Review minimum and maximum sound levels on all driving situations
 - Operation range of AVAS
- Organisation of the transitional period for international purposes
- Organisation of the works of this TF-QRTV (UN-R138-02) to be defined in a 2-steps approach to solve the different issues according to their priorities and/or their 'simplicity'.
- TF-QRTV (UN-R138-02) shall work in the framework of the 1958 Agreement and shall report to GRBP.