



EU Proposed Approach of QRTV GTR

A Qualitative approach towards the
main technical challenges of the QRTV
GTR drafting

2nd Meeting of the IG on QRTV GTR

Berlin 5-7 December 2013

General Concept – Background Information Documents I

- **Consolidated Resolution on the Construction of Vehicles (R.E.3)**
- **ECE/WP29/GRB/2012/6 - Draft Recommendations for a Global Technical Regulation Regarding Audible Vehicle Alerting Systems for Quiet Road Transport Vehicles**
- **Principles of the 1998 Agreement**
- **Experience from the implementation of existing UNECE Regulations and the available test procedures (R51 etc.)**

General Concept – Background Information Documents II

- Competitive Automotive Regulatory System for the 21st century: CARS21 High level group results.
- The new legislative proposal
- A European strategy on clean and energy efficient vehicles (COM(2010)186 final of 28/04/2010)
- CARS 2020: Action Plan for a competitive and sustainable automotive industry in Europe (COM(2012) 636 final, 08/11/2012)
- Latest scientific studies & reports on the impact of QRTVs on urban environments with respect to their noise emissions

CARS 2020: Action Plan for a competitive and sustainable automotive industry in Europe

Following the CARS 21 final report, the EU Commission announced concrete actions in reaction to the current economic situation. Recognising the strategic importance of the auto industry for Europe (12 mil jobs, € 92 bn trade balance, € 30 bn investment in R&D) an Action Plan will list measures to help the sector. Planned actions concern:

- 1) providing EU financing for research, (sector adaptation to technologies of tomorrow) and reinforcing EIB lending to industry
- 2) managing the sector's costs by applying the principles of smart regulation and
- 3) supporting the internationalisation of EU industry by improving market access through trade negotiations and work on regulatory and procedural convergence with the ultimate aim of achieving a worldwide car type approval. This would mean that any car produced in the world can be marketed in every country of the world.

The new EU proposal on vehicle noise emission – Quiet Vehicles

- New test method based on UNECE work: More representative of “real” driving conditions (GRB Reg No 51/ Working Party on vehicle noise)
- Better representation of urban driving conditions
- Applicable to new technologies (CVT, hybrid)
- Provisions and legislative framework for EV/HEV vehicles: Quiet vehicles (electric and hybrid vehicles): 1) Minimum legal framework for sound generating devices Optional installation of such devices
- In line with CARS 21 recommendations
- Includes additional sound emission provisions (ASEP): Detects devices which would increase noise emissions

Technical Approach Concepts Proposed

- **Performance-based approach – Development of Passive Measures-AVAS system**
- **Technology prescriptive approach – Development of Active Measures-Transmitter/Receiver systems**
- **Combined Approach (modular approach, combination of passive and active components)**

Performance-based Approach – AVAS System

A number of parameters may influence an AVAS system performance, including:

- **Background noise level – Ambient Noise Level: Simulated vs. Artificial Sounds for HEVs and EVs**
- **Cumulative Noise Effect: AVAS system specifics should give consideration to the impact of the overall community/urban noise level as well as to future traffic conditions due to possible future massive increase of EVs and HEVs numbers. Concerns are also raised with respect to noise exposure levels of the driver.**

Technology prescriptive approach – Active modular AVAS system

An active approach may possible involve Transmitter/Receiver Technologies (RFID/RF, RF etc.), or self-calibrating AVAS device (i.e. incl. a microphone and an ECU for identifying the ambient noise level and emitting a corrected signal). Necessary prerequisites:

- **Definition of the (an) Ambient/Background noise level is important**
- **Minimum overall impact on the community/urban noise levels should be ensured.**

Recommendations and Conclusions

- The new GTR needs to be flexible, simple and provide "one solution to fit all" with suitable provisions for future technological and scientific developments.
- The new GTR needs to be innovation-friendly and not create market or trade constrictions.
- The new GTR must be "ready for adoption" or "attractive for adoption" by the contracting parties
- The new GTR needs to take into consideration that EVs and HEVs are expected to grow exponentially in numbers over the next few years (cumulative effect, noise exposure levels, disorientation effects in heavy traffic conditions).



Thank you for your attention!

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