



# Reverse Alarm of M- and N-Vehicles

**(2. Approach after Discussions between  
Japan & Germany dated 8<sup>th</sup> Dec. 2016)**

# Contents:

## **1. Present Situation**

## 2. Problems

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# Present Situation

Most vehicles > 3.500 kg are equipped with a Reverse Alarm (OEM/Retrofit)

Equipment often based on the Employer's Liability Insurance Association

Because of this, existing Reverse Alarms are very loud

Because

- Using-Conditions differ (wide range: extreme loud to very quiet) &
- the effect of insurances (“a lot helps a lot”).

Existing Reverse Alarm noise level is based on the ambient noise of highway construction areas.

No specific harmonized standards or requirements were found

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# Problems

1. Reverse Alarms actually have no harmonized limits (Min. and Max.)
2. In urban and quiet areas Reverse Alarms are too loud (many complaints)
3. During 10:00 pm & 7:00 am Reverse Alarms are much too loud (many complaints)
4. Reverse Alarm is a substitute for AVAS at UN-Regulation 138 (QRTV)  
This makes no sense, if there are no Minimum limits of Reverse Alarm!

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# Solutions about REVERSE ALARM (REAL)

Harmonization of REAL as New UN-Regulation. Not part of UN-R28 !

Combine AWD (mandatory) & REAL (voluntary) at one UN-R is difficult

Reg.-Scope: N2, N3 & M3 vehicles for carriage of passengers or goods

REAL: Mandatory for [N3 and M3]; Not mandatory for [N2] [Option]

Main Structure (Approval: Component- & vehicle Fitting) similar to UN-R 28

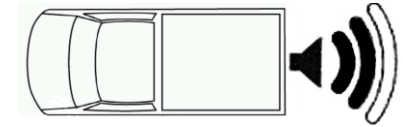
Component: Min-/Max-Levels, Frequencies; Microphone-distance 2 m  
(Laboratory- or Outside-tests; like AWD component)

Vehicles: Min-/Max-Levels, Microphone-distance 7 m; height of 0,5 - 1,5 m  
(Outside-test; like AWD-mounting on the vehicle; only difference: Rear End)

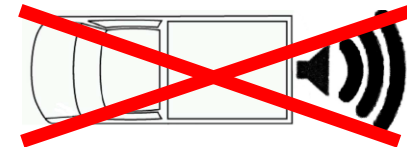
# Solution Details (1. Approach dated Sep. 2016)

## 4 Selectable Sound Pressure levels (SPL))

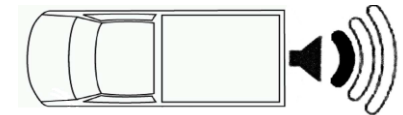
Normal: Urban-Area (SPL: Min. 68 dB(A) & Max. 78 dB(A))



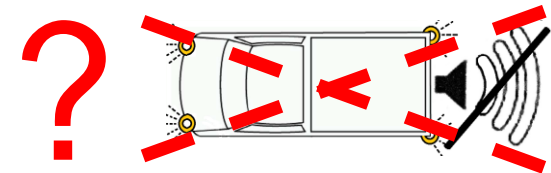
~~High: Road Work Area (SPL: Min. 80 & Max. 94 dB(A))~~



Low: Quiet-Area (SPL: Min. 52 dB(A) & Max. 58 dB(A))



~~Night-switch Off: Deactivation of Sound (Recommendation: can be used from 10:00 pm - 5:00 am), if hazard warning lights will be activated automatically by using reversing gear~~

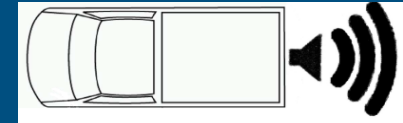




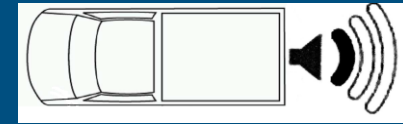
# Solution Details (JP & DE Proposal: 65<sup>th</sup> GRB-Session)

## 2 Selectable Sound Pressure levels (SPL)

1. Normal: Urban-Area (SPL: Min. 58 dB(A) & Max. 78 dB(A))



2. Low: Quiet-Area (SPL: Min. [45] dB(A) & Max. [65] dB(A))



### How to select 2 SPL

#### Option 1 Manual switching

(After restarting the vehicle the “Normal level” has to be activated again!)

#### Option 2 Automatic switching

[Also allowed: Automatically Level Adjustment

5 dB(A) [+ 2] dB(A) above Ambient Noise between 50 and 100 dB(A)]

UN-Typ-Approval can also be granted, if a vehicle is equipped with Rear-View-Camera in accordance to 2003/97/EC or UN-R 46 Rev. 5 and no REAL is fitted and the Rear view camera is activated automatically by selecting reverse gear !

# Solution (Possible Next Steps and Time Line)

1. Question to GRB about acceptance of JP/DE-Approach ? **2/2017**

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If GRB agree with Step 1.
2. Present GRB a proposal of UN-Reg. REAL as Inf.-Doc. **9/2017** (Best)  
**2/2018** (2. Best)

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If GRB agree with Step 2.
3. Present GRB a proposal of UN-Reg. REAL as Work.-Doc. **2/2018** (Best)  
**2/2019** (3. Best)

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If GRB agree with Step 3.
4. Vote of WP.29 about UN-Reg. REAL (Proposal) **6/2018** (Best)  
**6/2019** (3. Best)

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If WP.29 agree with Step 4.
5. UN-Reg. REAL could get into force **2019** (Best)  
**2020** (2. Best)

**Thanks for your attention!**