EUROPEAN
COMMISSION

Brussels, XXX
[…](2016) XXX draft

ANNEX 1

ANNEX

to the

Commission Delegated Regulation (EU) .../...

amending Regulation (EU) No 540/2014 of the European Parliament and of the Council as regards the Acoustic Vehicle Alerting System requirements for vehicle EU-type approval

This document does not represent an official position of the European Commission. It is a tool to explore the views of interested parties. The suggestions contained in this document do not prejudge the form and content of any possible future proposal by the European Commission.

Annex

Annex VIII to Regulation (EU) No 540/2014 is replaced by the following:

" ANNEX VIII

MEASURES CONCERNING THE ACOUSTIC VEHICLE ALERTING SYSTEM (AVAS)

This Annex sets out measures concerning the Acoustic Vehicle Alerting System (AVAS) for hybrid electric and pure electric vehicles.

AVAS

1. For the purposes of this Annex, the following definitions shall apply:

1.1. "Frequency shift" as set out in paragraph 2 of UNECE Regulation No 138[1].

1.2. "Pause function" means a mechanism to enable the driver to halt the operation of an AVAS.

2. System performance

The AVAS shall comply with the requirements set out in points 3 to 8.

3. Operation conditions

(a) Sound generation method

The AVAS shall automatically generate a sound in the minimum range of vehicle speed from start up to approximately 20 km/h and during reversing. Where the vehicle is equipped with an internal combustion engine that is in operation within that vehicle speed range, the AVAS shall not generate a sound.

Vehicles having overall sound levels complying with the requirements in paragraph 6.2.8 of UNECE Regulation No 138 with a margin of +3 dB(A), are not required to be equipped with AVAS. The requirements for one-third octave bands in paragraph 6.2.8 of the UNECE Regulation No 138 and the frequency shift in paragraph 6.2.3 of the UNECE Regulation No 138 shall not apply to these vehicles.

For vehicles having a reversing sound warning device, it is not necessary for the AVAS to generate a sound whilst reversing. For this exception to apply, the reversing sound of the warning device shall comply with the requirements in the second subparagraph of the paragraph 6.2 and in paragraph 6.2.2 of the UNECE Regulation No 138.

(b) Switch

The AVAS may be fitted with a pause function, which is easily accessible by the vehicle driver in order to allow engaging and disengaging. Upon restarting the

[1] OJ …

vehicle, AVAS shall default to the switched on position.

In addition, the pause function shall comply with the requirements in paragraph 6.2.6 of UNECE Regulation No 138.

(c) Attenuation

The AVAS sound level may be attenuated during periods of vehicle operation. In those cases, the AVAS sound level shall comply with the requirements in paragraph 6.2.8 of the UNECE Regulation No 138.

4. Sound type and volume

(a) Without prejudice to the requirements in point 3(a), the sound to be generated by the AVAS shall be a continuous sound that provides information to the pedestrians and other road users of a vehicle in operation. The sound should be easily indicative of vehicle behaviour and should sound similar to the sound of a vehicle of the same category equipped with an internal combustion engine.

For this purpose,

(i) the AVAS sound shall comply with the requirements for the frequency shift in paragraph 6.2.3 of UNECE Regulation No 138, if it is generated when the vehicle is in motion;

(ii) the vehicle may emit a sound when stationary, as set out in paragraph 6.2.4 of UNECE Regulation No 138. Should this sound be attenuated, it shall comply with the requirements of paragraph 3(c) of this Annex.

(b) Without prejudice to the requirements in point 3(a), the sound to be generated by the AVAS shall be easily indicative of vehicle behaviour, for example, through the automatic variation of sound level or characteristics in synchronization with vehicle speed.

The vehicle manufacturer may provide for driver selectable sounds, which shall comply with the requirements in paragraph 6.2.5 of UNECE Regulation No 138.

(c) The sound level generated by the AVAS or the overall sound level emitted by a vehicle complying with the second subparagraph of point 3(a) shall not exceed the approximate sound level of a vehicle of the M_1 category equipped with an internal combustion engine and operating under the same conditions.

5. Test track requirements

Until 30 June 2019 ISO 10844:1994 may be applied as an alternative to ISO 10844:2014 to check compliance of the test track as described in Annex 3, paragraph 2.1.2. of UNECE Regulation No 138.

6. Type-approval certificate

The communication for approval of a vehicle type with regard to its sound emission, issued in accordance with the requirements in paragraph 5 of UNECE Regulation No 138, shall be accepted instead of the EU type-approval certificate set out in Annex I of this Regulation.

The model of such communication is set out in Appendix 1 to this Annex.

7. Type-approval mark

An approval mark affixed to a vehicle, in accordance with the requirements in paragraph 5 of UNECE Regulation No 138, shall be accepted in addition to the statutory plate described in Part I of Annex IV to Directive 2007/46/EC[2].

The model of such approval mark is set out in Appendix 2 to this Annex.

8. Markings

8.1. The components of the AVAS (if applicable) shall bear:

8.1.1. The trade name or mark of the manufacturer(s) of the AVAS components;

8.1.2. A designated identification number.

8.2. These markings shall be clearly legible and be indelible.

[2] Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles (OJ L 263, 9.10.2007, p. 1)

Appendix 1

Communication

(maximum format: A4 (210 x 297 mm))

issued by: Name of administration:

.....

.....

.....

concerning:[2] Approval granted
Approval extended
Approval refused
Approval withdrawn
Production definitively discontinued

of a vehicle type with regard to its sound emission pursuant to Regulation No. XX

Approval No. …….. Extension No. ……

SECTION I

0.1. Make (trade name of manufacturer): .....

0.2. Vehicle Type:.....

0.3. Means of identification of type if marked on the vehicle:[3] .....

0.3.1. Location of that marking:.....

0.4. Category of vehicle:[4].....

0.5. Propulsion principle (PEV/HEV/FCV/FCHV):.....

0.6. Company name and address of manufacturer: .....

0.7. Names and Address(es) of assembly plant(s): .....

0.8. Name and address of the manufacturer's representative (if any):…….....

SECTION II

1. Additional information (where applicable): See Addendum

2. Technical service responsible for carrying out the tests: .....

[1] Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

[2] Delete what does not apply.

[3] If the means of identification of type contains characters not relevant to describe the vehicle, types covered by the type-approval certificate such characters shall be represented in the documentation by the symbol: '?' (e.g. ABC??123??).

[4] As defined in R.E.3.

3. Date of test report: .....
4. Number of test report: .....
5. Remarks (if any): See Addendum
6. Place: .....
7. Date: .....
8. Signature: .....
9. Reasons for Extensions

Attachments:

Information package

Test report(s)

Addendum to the communication form No …

Technical Information

0.	General
0.1.	Make (trade name of manufacturer):
0.2.	Means of identification of type, if marked on the vehicle:[5]
0.2.1.	Location of that marking:
0.3	Category of vehicle:[6]
0.4.	Company name and address of manufacturer:
0.5.	Name and address of the manufacturer's representative (if any):
0.6.	Name(s) and Address(es) of assembly plant(s):
1.	Additional information
1.1.	Power plant
1.1.1.	Propulsion principle (PEV/HEV/FCV/FCHV) :
1.1.2.	Manufacturer of the engine(s):
1.1.3.	Manufacturer's engine code(s):
1.2.	Description of AVAS (if applicable): .....
1.2.1	Pause switch (yes/no)
1.2.2.	Sound at Stationary (yes/no)
1.2.3.	No. of driver selectable sounds (1/2/3/…)
2.	Test results
2.1.	Sound level of moving vehicle: ..... dB(A) at 10 km/h
2.2.	Sound level of moving vehicle: ..... dB(A) at 20 km/h
2.3.	Sound level of moving vehicle: ……... dB(A) in reversing
2.4.	Frequency shift: ..... % /km/h
3.	Remarks

5 If the means of identification of type contains characters not relevant to describe the vehicle, types covered by the type-approval certificate such characters shall be represented in the documentation by the symbol: '?' (e.g. ABC??123??).

6 As defined in R.E.3.

Technical Information Document[7]

0.	General
0.1.	Make (trade name of manufacturer):.....
0.2.	Type
0.3.	Means of identification of type, if marked on the vehicle:[8]
0.3.1.	Location of that marking:.....
0.4.	Category of vehicle:[9].....
0.5.	Company name and address of manufacturer: .....
0.6.	Name and address of the manufacturer's representative (if any):.....
0.8.	Name(s) and Address(es) of assembly plant(s):.....
1.	General construction characteristics of the vehicle
1.1.	Photographs and/or drawings of a representative vehicle: .....
1.3.	Number of axles and wheels:[10].....
1.3.3.	Powered axles (number, position, interconnection): .....
1.6.	Position and arrangement of the engine(s):.....
2.	Masses and dimensions[11] (in kg and mm) (Refer to drawing where applicable):.....
2.4.	Range of vehicle dimensions (overall):.....
2.4.1	For chassis without bodywork: .....
2.4.1.1.	Length:.....
2.4.1.2.	Width: .....
2.4.2.	For chassis with bodywork
2.4.2.1.	Length:.....
2.4.2.2.	Width: .....
2.6.	Mass in running order
	minimum and maximum: .....
3.	Power plant[12]

[7] Manufactures may automatically create this Technical Information Document by selecting the relevant items from the commonly agreed matrix. These items will appear in the Technical Information Document under the same numbers as in the matrix. Thus, the numbering of items in the Technical Information Document may not necessarily be continuous.

[8] If the means of identification of type contains characters not relevant to describe the vehicle, types covered by the type-approval certificate such characters shall be represented in the documentation by the symbol: '?' (e.g. ABC??123??).

[9] As defined in R.E.3.

[10] Only for the purpose of defining "off-road vehicles".

[11] (a) Standard ISO 612: 1978 — Road vehicles — Dimensions of motor vehicles and towed vehicles - terms and definitions.
(b) Where there is one version with a normal cab and another with a sleeper cab, both sets of masses and dimensions are to be stated.
(c) Optional equipment that affects the dimensions of the vehicle shall be specified.

[12] In the case of a vehicle that can run either on petrol, diesel, etc., or also in combination with another fuel, items shall be repeated. In the case of non-conventional engines and systems, particulars equivalent to those referred here shall be supplied by the manufacturer.

3.1. Manufacturer of the engine(s):

3.1.1. Manufacturer's engine code(s) (as marked on the engine(s), or other means of identification): .....

3.3. Electric motor

3.3.1. Type of the electric motor (winding, excitation):

3.4. Engine or motor combination:

3.4.4. Electric motor (describe each type of electric motor separately)

3.4.4.1. Make: .....

3.4.4.2. Type: .....

3.4.4.3. Maximum power: …..kW

6. Suspension

6.6. Tyre size

6.6.2. Upper and lower limits of rolling radii

6.6.2.1. Axle 1:.....

6.6.2.2. Axle 2:.....

6.6.2.3. Axle 3:.....

6.6.2.4. Axle 4:.....

etc.

9. Bodywork

9.1. Type of bodywork:

9.2. Materials used and methods of construction:

12. Miscellaneous

12.5. Details of materials and components influencing the sound emission of the vehicle (if not covered by other items): .....

17. AVAS (if applicable)

17.1. Type of the AVAS (loudspeaker …): .....

17.1.1. Make: .....

17.1.2. Type: .....

17.1.3. Geometrical characteristics (internal length and diameter)

17.2. The following documents are annexed to this communication:

17.2.1. drawings of the mountings of the sound emitting device(s),

17.2.2. … drawings and diagrams giving the mounting positions and characteristics of the parts of the structure on which the devices are fitted.

17.2.3. … over-all views of the front of the vehicle and of the compartment in which the device is situated and description of the component materials.

Signed: .....

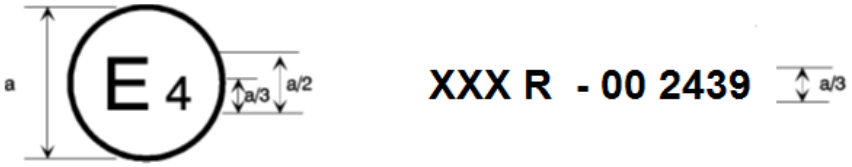
Position in company: .....

Date: .....

Appendix 2

Arrangements of the approval mark

Model A
(See paragraph 5.4. of UNECE Regulation No. 138)

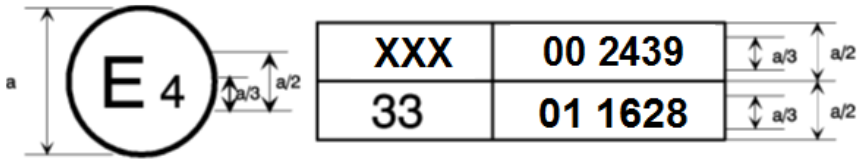


a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to its audibility, been approved in the Netherlands (E 4) pursuant to Regulation No. XXX under approval No. 002439.

The first two digits of the approval number indicate that Regulation No. XX already included the 00 series of amendments when the approval was granted.

Model B
(See paragraph 5.5. of UNECE Regulation No. 138)



a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the Netherlands (E 4) pursuant to Regulations Nos. XXX and 33.[1] The approval numbers indicate that, at the dates when the respective approvals were granted, Regulation No. XXX included the 00 series of amendments while Regulation No. 33 included the 01 series of amendments.

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[1] The latter number is given as an example only.