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COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	7 July 2021
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	C(2021) 4865 final
Subject:	CORRIGENDUM of 7.7.2021 to Commission Delegated Directive of 21 December 2020 amending, for the purposes of adapting to scientific and technical progress, Annex II to Directive 2002/49/EC of the European Parliament and of the Council as regards common noise assessment methods (C(2020)9101)

Delegations will find attached document C(2021) 4865 final.

Encl.: C(2021) 4865 final

EUROPEAN
COMMISSION

Brussels, 7.7.2021
C(2021) 4865 final

CORRIGENDUM

of 7.7.2021

to Commission Delegated Directive of 21 December 2020 amending, for the purposes of adapting to scientific and technical progress, Annex II to Directive 2002/49/EC of the European Parliament and of the Council as regards common noise assessment methods (C(2020)9101)

CORRIGENDUM

to Commission Delegated Directive of 21 December 2020 amending, for the purposes of adapting to scientific and technical progress, Annex II to Directive 2002/49/EC of the European Parliament and of the Council as regards common noise assessment methods (C(2020)9101)

On page 1, in the Annex, point 2(c), in the amendments to Section 2.2.1 of Annex II to Directive 2002/49/EC

for: '"In the traffic flow, all vehicles of category m are assumed to drive at the same speed, i.e. v_m."'

read: '"In the traffic flow, all vehicles of category m are assumed to drive at the same speed, i.e. v_m."'.

On page 2, in the Annex, point 4(d), in the amendments to Section 2.3.2 of Annex II to Directive 2002/49/EC

for: '"*The vertical directivity* $\Delta L\ W_{,dir,ver,i}$ in dB is given in the vertical plane for source A (h = 1), as a function of the centre band frequency $f_{c,i}$ of each *i*-th frequency band, and:'

read: '"*The vertical directivity* $\Delta L_{W,dir,ver,i}$ in dB is given in the vertical plane for source A (h = 1), as a function of the centre band frequency $f_{c,i}$ of each *i*-th frequency band, and:'.

On page 3, in the Annex, point (8)(a), in the amendments to Section 2.5.5 of Annex II to Directive 2002/49/EC

for: '"Sound level in favourable conditions (LF) for a path (S,R)", the formula 2.5.6 is replaced by the following:'

read: '"Sound level in favourable conditions (L_F) for a path (S,R)", the formula 2.5.6 is replaced by the following:'.

On page 4, in the Annex, point (8)(b), in the amendments to Section 2.5.5 of Annex II to Directive 2002/49/EC

for: '

Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
$AWC_{f,I}$ [dB]	-26.2	-16.1	-8.6	-3.2	0	1.2	1.0	-1.1

'

read: '

Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
$AWC_{f,i}$ [dB]	-26.2	-16.1	-8.6	-3.2	0	1.2	1.0	-1.1

'.

On page 4, in the Annex, point (9)(c), in the amendments to Section 2.5.6 of Annex II to Directive 2002/49/EC

for: '

- if the “Rayleigh-criterion” is fulfilled.

This is the case, if δ is larger than λ/4 – δ*, where δ* is the path length difference calculated with this same edge D but related to the mirror source S* calculated with the mean ground plane at the source side and the mirror receiver R* calculated with the mean ground plane at the receiver side. To calculate δ* only the points S*, D and R* are taken into account – other edges blocking the path S*->D->R* are neglected. For the above considerations, the wavelength λ is calculated using the nominal centre frequency and a speed of sound of 340 m/s.'

read: '

- if the “Rayleigh-criterion” is fulfilled.

> This is the case, if δ is larger than λ/4 – δ*, where δ* is the path length difference calculated with this same edge D but related to the mirror source S* calculated with the mean ground plane at the source side and the mirror receiver R* calculated with the mean ground plane at the receiver side. To calculate δ* only the points S*, D and R* are taken into account – other edges blocking the path S*->D->R* are neglected.

For the above considerations, the wavelength λ is calculated using the nominal centre frequency and a speed of sound of 340 m/s.'

On page 6, in the Annex, point (9)(f), in the amendments to Section 2.5.6 of Annex II to Directive 2002/49/EC

for: ' ‘In favourable conditions the three curved sound rays *SO, OR,* and *SR* have an identical radius of curvature Γ defined by:'

read: ' ‘In favourable conditions the three curved sound rays $\widehat{SO}$, $\widehat{OR}$, and $\widehat{SR}$ have an identical radius of curvature Γ defined by:'.

On page 6, in the Annex, point (9)(g), in the amendments to Section 2.5.6 of Annex II to Directive 2002/49/EC

for: '‘

$\delta_F = \hat{S}O + \sum_{i=1}^{n-1} O_i\hat{O}_{i+1} + \hat{O}_n R - \hat{S}R$	(2.5.28)

'

read: '‘

$\delta_F = \hat{S}O_1 + \sum_{i=1}^{n-1} O_i\hat{O}_{i+1} + \hat{O}_n R - \hat{S}R$	(2.5.28)

'.

On page 8, in the Annex, point (9)(h), in the amendments to Section 2.5.6 of Annex II to Directive 2002/49/EC

for: ' Calculation of the term Δground(O,R) '

read: ' Calculation of the term $\Delta_{\text{ground(O,R)}}$ '.

On page 8, in the Annex, point (9)(h), in the amendments to Section 2.5.6 of Annex II to Directive 2002/49/EC

for: '

- G_{path} is calculated between *O* and *R*.

  The G'_{path} correction does not need to be taken into account here, as the considered source is the diffraction point. Therefore, G_{path} shall indeed be used in the calculation of ground effects, including for the lower bound term of the equation which becomes -3(1- G_{path}).

  - In homogeneous conditions, $\bar{G}_w$= G_{path} in Equation (2.5.17) and $\bar{G}_m$= G_{path} in Equation (2.5.18);
  - In favourable conditions, $\bar{G}_w$= G_{path} in Equation (2.5.17) and $\bar{G}_m$ = G_{path} in Equation (2.5.20);
  - $\Delta_{dif(S,R')}$ is the attenuation due to the diffraction between *S* and the image receiver *R*', calculated as in the previous section on pure diffraction;
  - $\Delta_{dif(S,R)}$ is the attenuation due to the diffraction between *S* and *R*, calculated as in the previous subsection on pure diffraction.

'

read: '

- G_{path} is calculated between *O* and *R*.

The G'_{path} correction does not need to be taken into account here, as the considered source is the diffraction point. Therefore, G_{path} shall indeed be used in the calculation of ground effects, including for the lower bound term of the equation which becomes -3(1- G_{path}).

- In homogeneous conditions, $\bar{G}_w$= G_{path} in Equation (2.5.17) and $\bar{G}_m$= G_{path} in Equation (2.5.18).
- In favourable conditions, $\bar{G}_w$= G_{path} in Equation (2.5.17) and $\bar{G}_m$ = G_{path} in Equation (2.5.20).
- $\Delta_{dif(S,R')}$ is the attenuation due to the diffraction between *S* and the image receiver *R*', calculated as in the previous section on pure diffraction.
- $\Delta_{dif(S,R)}$ is the attenuation due to the diffraction between *S* and *R*, calculated as in the previous subsection on pure diffraction.

'.

On page 9, in the Annex, point (9)(i), in the amendments to Section 2.5.6 of Annex II to Directive 2002/49/EC

for: '

Δ_{dif} is indeed used in homogeneous conditions in equation (2.5.34).

$A_H = A_{div} + A_{atm}^{path} + A_{ground,H}^{path} + \Delta_{dif,H(S,R)}$	(2.5.33)

$A_F = A_{div} + A_{atm}^{path} + A_{ground,F}^{path} + \Delta_{dif,H(S,R)}$	(2.5.34)

Lateral diffraction is considered only in cases, where the following conditions are met:

The source is a real point source – not produced by segmentation of an extended source like a line- or area source.

The source is not a mirror source constructed to calculate a reflection.

The direct ray between source and receiver is entirely above the terrain profile.

In the vertical plane containing S and R the path length difference δ is larger than 0, that is to say, the direct ray is blocked. Therefore, in some situations, lateral diffraction may be considered under homogeneous propagation conditions but not under favourable propagation conditions.'

Read: ‘

$A_H = A_{div} + A_{atm}^{path} + A_{ground,H}^{path} + \Delta_{dif,H(S,R)}$	(2.5.33)

$A_F = A_{div} + A_{atm}^{path} + A_{ground,F}^{path} + \Delta_{dif,H(S,R)}$	(2.5.34)

Δ_{dif} is indeed used in homogeneous conditions in equation (2.5.34).

Lateral diffraction is considered only in cases, where the following conditions are met:

- The source is a real point source – not produced by segmentation of an extended source like a line- or area source.
- The source is not a mirror source constructed to calculate a reflection.
- The direct ray between source and receiver is entirely above the terrain profile.
- In the vertical plane containing *S* and *R* the path length difference δ is larger than 0, that is to say, the direct ray is blocked. Therefore, in some situations, lateral diffraction may be considered under homogeneous propagation conditions but not under favourable propagation conditions.

'.

On page 10, in the Annex, point (9)(k), in the amendments to Section 2.5.6 of Annex II to Directive 2002/49/EC

for: ' The plan *h*=0 defines the cars’ body '

read: ' The plane *h*=0 defines the cars’ body '.

On page 25, in the Annex, point (16)(a), in the amendments to Section 2.7.19 of Annex II to Directive 2002/49/EC

for: ' ‘*The duration correction ΔV (Exposure levels LE only)* '

read: ' ‘*The duration correction* Δ_V *(Exposure levels* L_E *only)* '.