



Questions by the TAAM delegation of the Netherlands
RDW-TAAM-2020-01

v1.00 – 14 March 2008

Directive or Regulation number:
ECE R125.01 suppl. 1

Subject:
Augmented Reality (AR) in the transparent area of the windscreen other than Head Up Display (HUD)

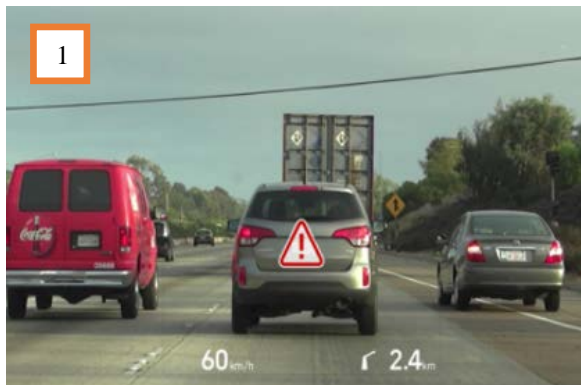
Reference to Annex, etc. in the Directive or Regulation:
Paragraph 5.1.3.

Text:
Paragraph 5.1.3.
Except as provided in paragraph 5.1.3.1. or 5.1.3.2. below, other than the obstructions created by the "A" pillars, the fixed or movable vent or side window division bars, outside radio aerials, rear-view mirrors and windscreen wipers, **there should be no obstruction in the driver's 180° forward direct field of vision** below a horizontal plane passing through V1, and above three planes through V2, one being perpendicular to the plane X-Z and declining forward 4° below the horizontal, and the other two being perpendicular to the plane Y-Z and declining 4° below the horizontal (see Annex 4, Appendix, Figure 4).

The following are not considered to be obstructions to the field of vision:
(a) Embedded or printed "radio aerial" conductors, no wider than the following:
 (i) Embedded conductors: 0.5 mm,
 (ii) Printed conductors: 1.0 mm. These "radio aerial" conductors shall not cross zone A_s. However, three "radio aerial" conductors may cross zone A if their width does not exceed 0.5 mm.
(b) Within zone A located "defrosting/demisting" normally in "zigzag" or sinusoidal form having the following dimensions:
 (i) Maximum visible width: 0.030 mm,
 (ii) Maximum conductor density:
 a. If the conductors are vertical: 8/cm,
 b. If the conductors are horizontal: 5/cm.

Questions:

Paragraph 5.1.3. states that it is not allowed to have any obstructions in the direct field of vision other than those described. With new developments like Augmented Reality projections, new possibilities rise but how does this fit within the Regulation? Some examples:





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As the images show, the system is projecting information in the transparent area of the windscreen. These projections vary in transparency and may or may not block direct vision. A proposal for the 02 series of amendments of UN Regulation No. 125 has been submitted to GRSG (ECE/TRANS/WP.29/GRSG/2020/12) to include the requirements for a so called “Field of Vision Assistant” (FVA); this proposal is to be discussed during next GRSG (potentially July 2020)

Questions:

1. Do you consider these projections “obstructions” as described in article 5.1.3.?
2. Did you issue any WVTA according to 2007/46 with a form of Augmented Reality ?
3. If the answer to Q2 is yes, what were the conditions of approval ?
4. If the answer to Q2 is no, why not ?

Solutions Q1:

A	Yes.
B	No

Decision Q1:

<i>Solution</i>	<i>Accepted</i>	<i>Refused</i>
A	X	
B		X



Solutions Q2:	
A	Yes.
B	No
C	Don't know, since it does not have to be evaluated under ECE R125.01

Decision Q2:		
<i>Solution</i>	<i>Accepted</i>	<i>Refused</i>
A		X
B	X	
C		X

Motivation Q3:

Solutions Q4: (more than 1 answer is possible)	
A	No manufacturer applied for it
B	Allowing some kind of Augmented Reality in the transparent area of the windscreen could result in dangerous situations and/or confusion and/or distraction to the driver rather than offering additional safety.
C	There are no requirements for what is allowed and what not; since approvals shall be mutually recognised, 2007/46 article 20 shall be followed or Schedule 7 of the 1958 Agreement to allow such a feature.
D	Would rather wait for the discussion in GRSG before allowing such feature

Decision Q4:		
<i>Solution</i>	<i>Accepted</i>	<i>Refused</i>
A		
B	X	
C	X	
D	X	

Authority:	
Type approval Authority e/E	4

Remarks:
<p>This discussion does not relate to commonly known Head Up Displays (HUD): Visual information displayed in area "S" as defined in paragraph 5.1.3.4.</p> <p><u>At Question 1:</u> The Regulation does not give a clear definition of obstruction, but does clearly indicate what is not considered as obstruction (see paragraph 5.1.3.). One could consider everything else, incl. AR, as obstruction. Or one could say that nothing is obstructing but information is projected which is something else.</p> <p><u>At Question 2:</u> It could be that you don't consider AR as obstruction and therefore a manufacturer may not even discuss these with the TS/TAA, so vehicle types may have some form of AR without it being evaluated or being part of any separate Type Approval.</p> <p><u>At Question 3:</u> The possibilities are numerous; basically anything could be projected, from traffic signs, to visual instructions for navigation but also commercially oriented information like the logo of a fast food restaurant or construction market, when approaching it. What do you consider acceptable at this moment ?</p> <p><u>At Question 4:</u> Due to discussions about the HMI and what will actually help drivers rather than offering additional distractions, RDW feels it necessary to align the possible requirements for such systems with other TAA's before allowing them.</p>