

Discussion paper – EMC requirements for AECD

The Netherlands doubts whether AECD's are fully covered with regard to EMC by the current draft Regulation on AECS and would like to have the opinion by the participants of the IWG on AECS and by EMC experts.

The set of components of the AECD can be regarded as being liable to the effects of electromagnetic disturbances.

The latest working document AECS-02-02-Rev.4 requires the effectiveness of the AECD not to be adversely affected by magnetic or electrical fields by ensuring compliance with Regulation No. 10.05 (according to Part I, paragraph 7.1.).

The AECD could be approved according to UN Regulation No. 10 as:

- an ESA for the purpose of Part I, or
- being part of a vehicle for the purpose of Part III (no EMC requirements included in Part III yet).

Considerations:

1. It may be interpreted differently by Approval Authorities and Technical Services whether UN Regulation No. 10 applies to the AECD as an ESA in case the AECD is seen as being a "passive" device (according to UN Regulation No. 10 paragraph 3.2.1.). Is there a common understanding of "passive" or any definition given somewhere?

If we regard AECD's being liable to the effects of EMC this should be specifically reflected by the requirements of Regulation No. 10 (e.g. by modifying the provisions of this Regulation).

2. It may be interpreted differently by Approval Authorities and Technical Services whether UN Regulation No. 10 applies to the AECD as part of a vehicle approval if this is seen as not being "relevant" according to Regulation No. 10 paragraph 3.1.3. because it may not be seen as an "immunity related function" e.g. "related to driver, passenger and other road user protection" (according to paragraph 2.12.(b)).

This may be solved by amending Regulation No. 10 paragraph 3.1.3. and/or 2.12.

3. The immunity requirements of UN Regulation No. 10 relate to:
 - for a vehicle type, paragraph 6.4.2.2.: "no degradation of performance of immunity related functions according to paragraph 2.1. of Annex 6" (meaning related to the direct control of the vehicle),
 - for an ESA type, paragraph 6.8.2.2.: "no degradation of performance of immunity related functions".

"Immunity related functions" (acc. to par. 2.12) relate to the vehicle and not to the functioning of the device itself when exposed to electromagnetic fields.

Therefore there is no clear requirement in UN Regulation No. 10 related to the proper functioning of the AECD where it concerns establishing voice communication and transmission of data after an accident in an area having electromagnetic disturbances. This means that the AECD can fulfil the requirements of UN Regulation No. 10 but does not

function after an accident (no voice communication / transmission of data) when the device or vehicle is exposed to electromagnetic disturbances.

It therefore needs consideration whether to include specific requirements in either:

- UN Regulation No. 10, e.g. by amending paragraph 2.12 (definitions of "Immunity related functions"), or
- in the draft Regulation on AECD, Part III.

4. If we regard amendments, as indicated in item 3 above, necessary, it needs to be considered how this can be tested, (establishing voice communication / transmission of data when exposed to electromagnetic disturbances in an anechoic chamber or cell).