

Submitted by TF EMC

Informal document **GRE-78-10-Rev.1**
(78th GRE, 24-27 October 2017,
agenda item 7 (a))

**Task Force
on Electro-Magnetic Compatibility
(TF EMC)**

Status report to GRE-78
Wednesday, 25. October 2017

TF EMC Status Report

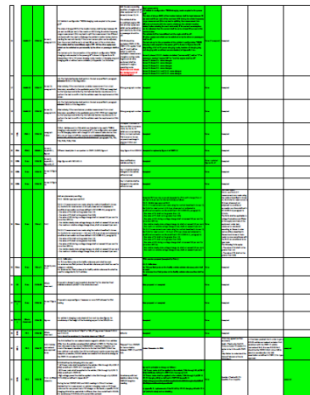
- TF EMC had its 10th meeting on Wednesday, 18th October 2017
- TF EMC will report on the work, which led to the “GRE/2017/12-Proposal for Supplement 2 to the 05 series of amendments to Regulation No. 10 (Electromagnetic compatibility) “ which was submitted by July 25th
- TF EMC is asking for the adoption of this proposal including the final approval of two special modifications (vehicle radiated emission narrowband limit, suppression of clause 3.1.9) shown at GRE 77
- TF EMC will ask for the approval of the informal document GRE-78-09_Rev1, supplied by TF EMC regarding Transitional Provisions
- Furthermore, Spain prepared a proposal with a technical change concerning DC charging mode which is still under discussion and will be presented at GRE-79

TF EMC Status Report – UN R10.05 Development (Proposals from China, Italy, France, Japan, Spain, OICA and IMMA)

- 87 modification proposals were discussed
 - **80 modifications were incorporated** in the informal working draft supplement of UN R10.05.
 - 5 of the proposals will be on the roadmap for a UN R10.06 version.
 - 2 proposals were not accepted due to contradiction to international standards



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TF EMC Status Report – UN R10.05 Development (Modification overview)

Focus of the work on the current version of the UN R10 :

- correction of technical and editorial errors, especially for the REESS test setups to be in line with CISPR and ISO standards; additionally all figures for Annex 11, 12, 14, 15 and 16 were updated
- Correction of inconsistencies – developed by the implementation of REESS ESA contents in UN R10.05

Two major changes were identified by the TF EMC to be reported and asked to be accepted by the GRE -77:

- Change of the UN R10.05 narrow band limit to be consistent with CISPR 12 (see details in Annex)
- Suppression of clause 3.1.9

TF EMC Status Report – UN R10.05 Development (Elimination of clause 3.1.9)

3. Application for approval

3.1. Approval of a vehicle type

3.1.1. The application for approval of a vehicle type, with regard to its electromagnetic compatibility, shall be submitted by the vehicle manufacturer.

~~3.1.9. Vehicle type approval shall be applied for both REESS and coupling system for charging the REESS as they are considered as electrical/electronic systems.~~

2.7. "*Electrical/electronic system*" means (an) electrical and/or electronic device(s) or set(s) of devices together with any associated electrical connections which form part of a vehicle but which are not intended to be type approved separately from the vehicle.

2.8. "*Electrical/electronic sub-assembly*" (ESA) means an electrical and/or electronic device or set(s) of devices intended to be part of a vehicle, together with any associated electrical connections and wiring, which performs one or more specialized functions. An ESA may be approved at the request of a manufacturer or his authorized representative as either a "component" or a "separate technical unit (STU)".

Justification

clause 3.1.9. of UN R10.05 might be interpreted not allowing to perform ESA type approval on REESS equipment, because it refers to E/E-Systems.

In fact this clause 3.1.9 has been added in UN R10.04 because there was NO description of REESS equipment ESA-test in UN R10.04.

When UN R10.05 has been issued to include specific REESS-equipment ESA test, this clause 3.1.9 should have been deleted, because it was in contradiction with the fact to have all this specific REESS equipment REESS ESA test available.

TF EMC Status Report – UN R10.05 Development

(Consistency of the description of Artificial networks with CISPR)

Background of the changes is to reach consistency in the description of artificial networks in UN R10.05 with all relevant CISPR and ISO standards.

- a) AC Power mains shall be applied to the vehicle / ESA through 50 $\mu\text{H}/50 \Omega$ ~~AN(s)~~ **AMN(s)** as defined in CISPR 16-1-2 paragraph 4.3.
- b) DC Power mains shall be applied to the vehicle / ESA through 5 $\mu\text{H}/50 \Omega$ ~~HV-DC charging-~~**AN(s)** as defined in ~~CISPR 25~~ **Appendix 8**.
- c) **High voltage power line shall be applied to the ESA through a 5 $\mu\text{H}/50 \Omega$ HV-AN(s) as defined in Appendix 8.**

TF EMC Status Report – UN R10.05 Development (Necessary adoption of Transitional Provisions)

- The EU indicated a missing expiration date for UN R10.04 within UN R10.05
- Further discussions about the Transitional Provisions showed that TPs for UN R10.03 and UN R10.04 are still included in UN R10.05 (clauses 13.1 to 13.10)
- Therefore the GRE TF EMC submitted an informal document GRE-78-09-Rev1 proposing :
 - To delete all clauses with TPs in relation with UN R10.03 and UN R10.04
 - To add missing TPs concerning UN R10.05 : “UN R10.04 expiration date“, UN R10.05 All Types date, vehicle type which are not equipped with a coupling system to charge the REESS.
 - To add specific TPs to differentiate between UN R10.05 and UN R10.05 Suppl. 2 because of major change (narrowband limit).
 - To change the relative periods of time into exact calendar dates, following the Rules of Revision 3 of 1958 Agreement.

TF EMC Status Report – UN R10.05 Development (Necessary adoption of Transitional Provisions)

- Suppression of clauses with TPs in relation with UN R10.03 and UN R10.04

13.1. As from the official date of entry into force of the 03 series of amendments, no Contracting Party applying this Regulation shall refuse to grant approval under this Regulation as amended by the 03 series of amendments.

13.2. As from 12 months after the date of entry into force of this Regulation, as amended by the 03 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the vehicle type, component or separate technical unit to be approved meets the requirements of this Regulation as amended by the 03 series of amendments.

13.3. Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to the preceding series of amendments to this Regulation.

13.4. Starting 48 months after the entry into force of the 03 series of amendments to this Regulation, Contracting Parties applying this Regulation may refuse first national registration (first entry into service) of a vehicle, component or separate technical unit which does not meet the requirements of the 03 series of amendments to this Regulation.

13.5. As from the official date of entry into force of the 04 series of amendments, no Contracting Party applying this Regulation shall refuse to grant type approvals under this Regulation as amended by the 04 series of amendments.

13.6. As from 36 months after the official date of entry into force of this Regulation, as amended by the 04 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the vehicle type, component or separate technical unit to be approved meets the requirements of this Regulation as amended by the 04 series of amendments.

13.7. Contracting Parties applying this Regulation shall continue to grant approvals to those types of vehicles or component or separate technical unit type which comply with the requirements of this Regulation as amended by the preceding series of amendments during the 36 months period which follows the date of entry into force of the 04 series of amendments.

13.8. Until 60 months after the date of entry into force of the 04 series of amendments, no Contracting Parties shall refuse national or regional type approval of a vehicle, component or separate technical unit type approved to the preceding series of amendments to this Regulation.

13.9. As from 60 months after the date of entry into force of the 04 series of amendments, Contracting Parties applying this Regulation may refuse national or regional type approval and may refuse first registration of a vehicle type or first entry into service of component or separate technical unit which does not meet the requirements of the 04 series of amendments to this Regulation.

13.10. Notwithstanding paragraphs 13.8 and 13.9, above, approvals granted to the preceding series of amendments to the Regulation for vehicle type which are not equipped with a coupling system to charge the REESS, or for component or separate technical unit which doesn't include a coupling part to charge the REESS, shall remain valid and Contracting Parties applying this Regulation shall continue to accept them.

- Update of UN R10.05 TPs

Insert a new paragraph 13.1., to read:

“13.1. As from 2014, October 9th, no Contracting Party applying this Regulation shall refuse to grant type approvals under this Regulation as amended by the 05 series of amendments.”

Renumber paragraph 13.11. to 13.2., and amend to read:

“13.112 As from 2017, October 9th 36 months after the date of entry into force of the 05 series of amendments, Contracting Parties applying this Regulation shall grant type approvals only if the vehicle type, component or separate technical unit, to be approved meets the requirements of this Regulation as amended by the 05 series of amendments.”

Insert new paragraphs 13.3. to 13.4., to read:

“13.3 Until [2019, October 9th], no Contracting Parties shall refuse national or regional type approval of a vehicle, component or separate technical unit type approved to the preceding series of amendments to this Regulation.”

“13.4 As from [2019, October 9th], Contracting Parties applying this Regulation may refuse national or regional type approval and may refuse first registration of a vehicle type, or first entry into service of component or separate technical unit which does not meet the requirements of the 05 series of amendments to this Regulation.”

Insert new paragraphs 13.5. to 13.10., to read:

“13.5. As from [2018, September 1st], no Contracting Party applying this Regulation shall refuse to grant type approvals under this Regulation as amended by the Supplement 02 to 05 series of amendments.”

“13.6. As from [2021, September 1st], Contracting Parties applying this Regulation shall grant type approvals only if the vehicle type, component or separate technical unit, to be approved meets the requirements of this Regulation as amended by the Supplement 02 to 05 series of amendments.”

“13.7. Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to the preceding series of amendments to this Regulation.”

“13.8. Until [2023, September 1st], no Contracting Parties shall refuse national or regional type approval of a vehicle, component or separate technical unit type approved to the preceding series of amendments to this Regulation.”

“13.9. As from [2023, September 1st], Contracting Parties applying this Regulation may refuse national or regional type approval and may refuse first registration of a vehicle type, or first entry into service of component or separate technical unit which does not meet the requirements of Supplement 02 to the 05 series of amendments to this Regulation.”

“13.10. Notwithstanding paragraphs 13.8 and 13.9, above, approvals granted to the 03 series or 04 series of amendments for vehicle type which are not equipped with a coupling system to charge the REESS, or for component or separate technical unit which doesn't include a coupling part to charge the REESS, shall remain valid and Contracting Parties applying this Regulation shall continue to accept them.”

TF EMC Status Report – UN R10.05 Development

Spanish Proposal regarding DC charging mode

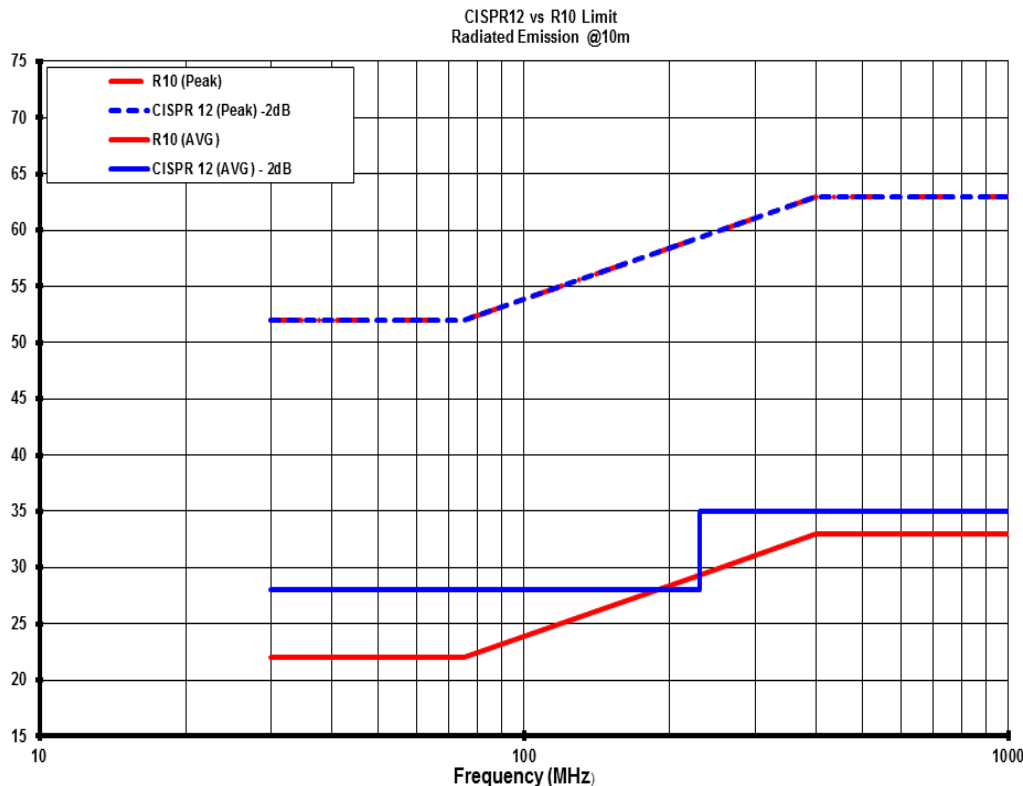
- The needs for charging of heavy vehicles as trucks or busses in short time leads to high charging current
- In the present version of UN R10.05 a test procedure is defined to test at a current level of 80% .
- Laboratories are in trouble to fulfil the resulting requirements regarding the energy supply and test equipment. They also have to invest in continuously new equipment with increasing demands.
- For the time being, the test requirements can not be fulfilled by most of the laboratories. So for each test, the technical service has to consult the national regulation authorities.
- Therefore the TF EMC will prepare a proposal and a justification for an adoption of the test setup and requirements.

Thank you for your attention

Annex

TF EMC Status Report – UN R10.05 Development (Change of the UN R10.05 narrow band limit consistent with CISPR 12)

- It has been precised that in order to get a UN R10.05 vehicle narrowband emission limit consistent with the CISPR 12 vehicle narrowband limit, the **new UN R10.05 limit should** be the CISPR12-limit minus 2dB to take into consideration this 2dB more stringent requirement as defined in CISPR 12 for type approval.



For information:
This figure shows also the consistence between the UN R10.05 and CISPR12 broadband peak limits.

The proposal for new UN R10-.05 narrowband limit is shown in blue, in comparison to the present UN R10.05 narrowband limit in red.