United Nations ECE/TRANS/WP.29/GRVA/7

Economic and Social Council

Distr.: General
19 November 2020

Original: English

Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Automated/Autonomous and Connected Vehicles

Seventh session
Geneva (online), 21-25 September 2020

Chair's notes on the Working Party on Automated/Autonomous and Connected Vehicles meeting in lieu of its seventh session

Contents

GE.20-15599(E)

2015599

Please recycle

I. Attendance and opening

1. The Working Party on Automated/Autonomous and Connected Vehicles (GRVA) met from 21 to 25 September 2020 online and without interpretation (informal in lieu of its seventh session), hosted in Geneva. The meeting was chaired by Mr. R. Damm (Germany). Accredited experts from the following countries participated in the work, following Rule 1 of the Rules of Procedure of the World Forum for Harmonization of Vehicle Regulations (WP.29) (TRANS/WP.29/690/Rev.2): Austria, Belgium, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Hungary, India, Israel, Italy, Japan, Luxembourg, Malaysia, the Netherlands, New Zealand, Norway, Poland, Republic of Korea, Russian Federation, Serbia, Slovakia, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom of Great Britain and Northern Ireland (UK) and United States of America (USA). An expert from the European Commission (EC) also participated. Experts from the following non-governmental organizations (NGOs) and international organizations participated: the American Automotive Policy Council (AAPC), European Association for Electric Mobility (AVERE), European Agricultural Machinery Organization (CEMA), International Motor Vehicle Inspection Committee (CITA), International Association of Body and Trailer Building Industry (CLCCR), European Association of Automotive Suppliers (CLEPA/MEMA/JAPIA), European Garage Equipment Association (EGEA), Confederation of the European Bicycle Industries (CONEBI), European Tyre & Rubber Manufacturers Association (ETRMA), European Tyre and Rim Technical Organization (ETRTO), European Transport Safety Council (ETSC), Federation of European Manufacturers of Friction Materials (FEMFM), Fédération Internationale de l'Automobile (FIA), Fédération Internationale des Grossistes, Importateurs et Exportateurs en Fournitures Automobiles (FIGIEFA), International Motorcycle Manufacturers Association (IMMA), International Road transport Union (IRU), Institute for Security and Safety, Brandenburg University of Applied Sciences (ISS), International Road Federation (IRF), International Organization for Standardization (ISO), International Telecommunication Union (ITU) and International Organization of Motor Vehicle Manufacturers (OICA), Recreational Vehicle Industry Association (RVIA), SAE International, Securing America's Future Energy (SAFE), International Association of Public Transport (UITP) and World Bicycle Industry Association (WBIA).

2. The Chair opened the meeting, mentioning the new Coronavirus 2019 outbreak context that explains why the meeting was conducted virtually.

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.29/GRVA/2020/19 and Add.1
Informal documents GRVA-07-01, GRVA-07-02 and GRVA-07-34

3. GRVA considered the provisional agenda prepared for this session and adopted it (ECE/TRANS/WP.29/GRVA/2020/19 and Add.1) with the below addition. The adopted agenda is reproduced in GRVA-07-34, including the informal documents received before the session started. (All informal documents submitted are listed in Annex I of this report.) Annex 2 provides the list of Informal Working Groups (IWG) reporting to GRVA.

Agenda item 13, insert to read: "13. Election of officers"

4. GRVA also agreed on the running order for the session (GRVA-07-01) and noted the technical information contained in GRVA-07-02 for this virtual session.

III. Highlights of the March and June 2020 sessions of WP.29 (agenda item 2)

Documentation: ECE/TRANS/WP.29/1151, ECE/TRANS/WP.29/1153 (ECE/TRANS/WP.1/2020/3)
Informal document GRVA-07-13

5. The Secretary presented GRVA-07-13, with the highlights of the March and June 2020 sessions of the World Forum for Harmonization of Vehicle Regulations (WP.29). He referred to ECE/TRANS/WP.29/1151, ECE/TRANS/WP.29/1153 for more details. He highlighted, among others, the combined session of the Global Forum for Road Traffic Safety (WP.1) with WP.29, which was organized in March 2020.

6. He proposed to review ECE/TRANS/WP.1/2020/3, proposing collaboration mechanisms for common approaches between WP.1 and WP.29 on automated vehicles. The expert from Canada stressed the importance of good exchange between the two Working Parties. GRVA agreed to support the principles contained in the document and to recommend them for endorsement by WP.29 at its November 2020 session.

IV. Exchange of views on guidelines and relevant national activities (agenda item 3)

7. No document had been submitted under this agenda item.

V. Automated/autonomous and connected vehicles (agenda item 4)

A. Deliverables of the Informal Working Group on Functional Requirements for Automated and Autonomous Vehicles

Documentation: Informal document GRVA-07-54

8. The expert from the USA, Co-Chair of the IWG on Functional Requirements for Automated Vehicles (FRAV), reported (GRVA-07-54) on the outcome of the recent session of the IWG. He clarified that the group finalized its discussion on Operational Domain Designs (ODDs), which are defined by the manufacturer and can potentially be restricted by the regulator. He presented the agreed structure that will guide the work of the group: the system performing the Dynamic Driving Task (DDT) is the Automated Driving System (ADS), it may have one or more features, each feature having a unique ODD.

9. GRVA endorsed the report provided.

B. Deliverables of the Informal Working Group on Validation Methods for Automated Driving

Documentation: Informal documents GRVA-07-38, GRVA-07-55

10. The expert from Canada, Co-Chair of the IWG on Validation Methods for Automated Driving (VMAD), informed (GRVA-07-55) GRVA on the outcomes of the IWG sessions, in line with the guidance provided by the Framework Document on Automated Vehicles (FDAV). He mentioned that the group had six virtual meetings since the last GRVA session. He reported that the activities related to Complex Electronics and Automated Lane Keeping System as well as the review of existing methods were completed and that the group would now focus on the New Assessment Test Method. The expert from Japan, Co-Chair of the group highlighted the position of the group regarding potential ALKS activities extension.

11. GRVA endorsed the report provided.

12. GRVA agreed to postpone the review of GRVA-07-38, a presentation on virtual testing prepared by the expert from France, at its next session.

C. Deliverables of the Informal Working Group on Event Data Recorder / Data Storage Systems for Automated Driving

Documentation: Informal documents GRVA-07-57, GRVA-07-58, GRVA-07-60, GRVA-07-61

13. The expert from the USA, Co-Chair of the IWG on Event Data Recorder (EDR) / Data Storage Systems for Automated Driving (DSSAD), informed GRVA on the outcome of the work of the group (GRVA-07-58), currently primarily focusing on EDR activities. She mentioned that a significant list of data elements was considered but that those concerning Vulnerable Road Users would be considered in a second step of activities. She mentioned that the discussions on EDR were delaying activities on DSSAD, due to divergence in the group concerning the EDR data elements. GRVA encouraged the stakeholders to discuss possibilities to resolve divergences before the next session of the Working Party on General Safety provisions (GRSG) in October 2020.

14. GRVA noted GRVA-07-60 and GRVA-07-61 expected to be reviewed by GRSG.

15. GRVA noted the informal document GRVA-07-57 titled “Review of the existing national / regional activities and a proposed way forward for Data Storage System for Automated Driving”, submitted by the IWG on EDR/DSSAD.

16. GRVA endorsed the report provided.

D. UN Regulation on Automated Lane Keeping Systems

Documentation: ECE/TRANS/WP.29/GRVA/2020/32
ECE/TRANS/WP.29/GRVA/2020/33
Informal documents GRVA-07-06, GRVA-07-07, GRVA-07-21, GRVA-07-26, GRVA-07-27, GRVA-07-28, GRVA-07-30, GRVA-07-31, GRVA-07-39, GRVA-07-45, GRVA-07-56, GRVA-07-59, GRVA-07-62, GRVA-07-63, GRVA-07-66, GRVA-07-69-Rev.1,

17. The expert from Germany presented GRVA-07-63, introducing ECE/TRANS/WP.29/GRVA/2020/32 with a proposal for amendments to UN Regulation No. [157] (ALKS), aimed at increasing the maximum speed (from 60 km/h to 130 km/h) for ALKS. She also introduced a second proposal (ECE/TRANS/WP.29/GRVA/2020/33) aimed at introducing provisions for ALKS performing lane changes. The experts from Austria, China, Denmark, European Commission, France, Italy, the Netherlands, Norway, Republic or Korea, Sweden and UK were rather supportive. They provided ideas and technical comments to improve the proposals. The expert from Switzerland opposed to the proposed speed increase (up to 130 km/h), stating that it would be counterproductive and as Switzerland was reviewing traffic rules based on the adopted 60 km/h. The experts from Japan, Canada and USA did not support the proposals and referred to FDAV as the reference document guiding the work of GRVA on automation. The expert from SAFE stated the need for a clear roadmap, mentioned the challenges for the Technical Services and the Approval Authorities with regards to Level 3 technologies and supported the comments from the European Commission regarding the need for a Regulation addressing Automation on motorways.

18. It was recalled that the expert from UK was working on a proposal for provisions for lane change during the minimum risk manoeuvre.

19. The expert from OICA presented GRVA-07-26, introducing a proposal for amendments to UN Regulation No. [157] (GRVA-07-31), aimed at extending the scope of the Regulation to heavy vehicles. They recalled that these vehicle categories were already in

the scope of the activities of the former IWG on Automatically Commanded Steering Function (ACSF), which drafted UN Regulation No. [157].

20. GRVA noted that its work priorities on automation were defined by WP.29 in the FDAV. GRVA also noted that a number of Contracting Parties were willing to work on amendments to UN Regulation No. [157] and therefore decided to consult the Administrative Committee for the coordination of work (AC.2).

21. The expert from the Russian Federation introduced GRVA-07-07, highlighting some inconsistencies between the different parts of UN Regulation No. [157]. He mentioned discrepancies on the use of the term "system". He questioned the need for Appendix 3 to Annex 4. He then introduced amendment proposal GRVA-07-06 on behalf of the European Commission and the Russian Federation. The expert from OICA responded to the proposal (GRVA-07-59). He also briefly introduced GRVA-07-30, proposing editorial changes to the Regulation and GRVA-07-21 with substantial amendments to the Regulations.

22. The Chair mentioned other informal documents (GRVA-07-27, GRVA-45, GRVA-07-56, GRVA-07-62 and GRVA-07-66), proposing amendments to UN Regulation No. [157] and invited the stakeholders to prepare a consolidated document with amendment proposals that could generate consensus at GRVA. Interested parties developed GRVA-07-69-Rev.1.

23. GRVA adopted the amendment proposals marked in green and yellow in GRVA-07-69-Rev.1 (see Annex III). GRVA requested the secretariat to correct the abbreviations, as appropriate, and to submit it without the text in read as supplement to UN Regulation No. [157], for consideration and vote by the World Forum for Harmonization of Vehicle Regulations (WP.29) its Administrative Committee for the 1958 Agreement (AC.1) at their March 2021 sessions.

24. Following the interpretation request by the expert from France (GRVA-07-39), GRVA agreed that ALKS should in principle detect "approaching emergency vehicles" as per traffic rules, noting that a definition of approaching emergency vehicles as well as other clarifications should be developed as soon as possible.

VI. Connected vehicles (agenda item 5)

A. Cyber security and data protection

Documentation: (ECE/TRANS/WP.29/2020/94),
Informal documents GRVA-07-04-Rev.1, GRVA-07-08,
GRVA-07-25, GRVA-07-36, GRVA-07-41, GRVA-07-49,
WP.29-179-27, WP.29-181-10

25. The expert from Japan, Co-Chair of the IWG on Cyber Security and Over-The-Air Software Updates (CS/OTA), reported on the activities of the group (GRVA-07-49) and introduced GRVA-07-04-Rev.1. GRVA discussed the need to adopt this document before the entry into force of UN Regulation No. [155] (Cyber Security and Cyber Security Management Systems). GRVA agreed that the Regulation stands on its own but also that cyber security was a rather new matter for some members of the community, who could immediately benefit from the documents.

26. GRVA endorsed GRVA-07-04-Rev.1, proposing guidance on how to interpret UN Regulation No. [155] and recommended it for endorsement by WP.29 at its November 2020 session, on the basis of an informal document.

27. The expert from the Russian Federation presented GRVA-07-08, proposing a clarification of para. 5.3.5. of UN Regulation No. [155]. The expert from Japan explained that the proposed clarification should be carefully reviewed as it could lead to restrictions to the rights of Contracting Parties according to the 1958 Agreement. The author agreed and mentioned that ECE/TRANS/WP.29/97 already provided some clarifications.

28. The expert from the Netherlands, Chair of the IWG on Database for Exchange of Type Approval documentation (DETA), introduced GRVA-07-25 (aimed at clarifying DETA related provisions in ECE/TRANS/WP.29/2020/94). GRVA endorsed it, in principle, as a draft guidance for the Authorities on the way to use DETA, hosted by Germany, in line with the relevant provisions in UN Regulation No. [155]. GRVA noted that the document would be finalized prior to WP.29 in November 2020, so that it can be adopted together with the document above.

29. GRVA requested the secretariat to provide a specific place on its website for all cyber security and software updates related documents.

30. The expert from FIA presented GRVA-07-41, referring to WP.29-181-10 and proposing to insert in UN Regulation No. 155 the Protection Profiles that they developed in cooperation with TüVIT. The expert from OICA responded to the proposal (GRVA-07-36). The expert from FIA agreed to respond to the challenges raised by the expert from OICA. The expert from the Russian Federation asked for more details about the Protection Profiles in practice. The expert from CEN recalled his submission of WP.29-179-27 provided for information to WP.29. The expert from China inquired about the nature of the Protection Profile, if it was a guidance or regulatory requirements. The expert from FIA responded that Protection Profiles are a methodology. GRVA invited the stakeholders to continue discussion at the IWG level. The expert from the Netherlands agreed to support this discussion.

31. The expert from UK, Co-Chair of the IWG, reported on activities related to the request from GRSG, concerning the cyber security of virtual keys. GRVA stated that UN Regulation No. [155] (Annex 5, Part 4) covered the cyber security of virtual keys, as currently being defined by GRSG.

B. Software updates and Over-The-Air issues

Documentation: ECE/TRANS/WP.29/GRVA/2020/29
Informal documents GRVA-07-37, GRVA-07-44, GRVA-07-50 and GRVA-07-51

32. The expert from UK, Co-Chair of the IWG on CS/OTA, introduced ECE/TRANS/WP.29/GRVA/2020/29, proposing guidance on how to interpret UN Regulation No. [156] (Software Updates and Software Updates Management Systems). He answered to the question raised by the expert from Spain on the reference to ISO 9001 in the document, which is a very general quality standard.

33. The expert from CITA introduced GRVA-07-44, aimed at clarifying the interpretation of para. 7.1.1.12. GRVA did not support the proposal as it was agreed that the interpretation document should not indirectly introduce additional requirements to the Regulation. GRVA offered the expert of CITA to further discuss the idea proposed in the document at the IWG level.

34. GRVA endorsed ECE/TRANS/WP.29/GRVA/2020/29 as amended by GRVA-07-50 (see Annex IV) and recommended its adoption by WP.29 at its November 2020 session. (GRVA noted the submission by the IWG of GRVA-07-51, which is content-wise identical with GRVA-07-50 but with a different format).

35. The expert from France introduced GRVA-07-37, aimed to clarify the requirements for manufacturers using an alternative software numbering system differing from the Regulation No. x Software Identification Number (RxSWIN) one. GRVA welcomed the proposal.

36. GRVA agreed to resume discussion on GRVA-07-37 on the basis of a revised document, distributed with an official symbol at its February 2021 session.

C. Legal considerations regarding technical provisions over the vehicle lifetime

Documentation: (Informal document WP.29-180-18)

37. GRVA did not discuss this item at this session as it already endorsed the basis document for WP.29-180-18.

D. Other business

38. No document had been submitted under this agenda item.

VII. UN Regulation No. 79 (Steering equipment) (agenda item 6)

A. Automatically Commanded Steering Function

Documentation: ECE/TRANS/WP.29/GRVA/2020/22
ECE/TRANS/WP.29/GRVA/2020/23
ECE/TRANS/WP.29/GRVA/2020/24
Informal documents GRVA-07-15, GRVA-07-16, GRVA-07-17, GRVA-07-18, GRVA-07-19, GRVA-07-20, GRVA-07-29, GRVA-07-32, GRVA-07-43

39. The expert from OICA introduced ECE/TRANS/WP.29/GRVA/2020/22, amended by GRVA-07-20 with proposed amendments to the provisions on ACSF of Category C. He explained that GRVA-07-20 also incorporated GRVA-07-15, GRVA-07-16 and GRVA-07-19. He withdrew GRVA-07-18. The expert from AVERE supported the OICA proposal. GRVA-07-29 superseded by GRVA-07-32. GRVA had remained divided on such amendments since its fourth session.

40. The expert from Germany introduced ECE/TRANS/WP.29/GRVA/2020/24 amending para. 5.6.4.7. The expert from the Netherlands provided comments. GRVA invited the experts from Germany and the Netherlands to collaborate on a revised proposal. The expert from UK insisted on the need to review the lane change related provisions

41. GRVA adopted ECE/TRANS/WP.29/GRVA/2020/23 and requested the secretariat to submit it as supplement to the 03 series of amendments to UN Regulation No. 79 for consideration and vote by WP.29 and AC.1 at their March 2021 sessions.

42. The expert from OICA introduced GRVA-07-43 with an amendment proposal to the ACSF of Category C provisions, aimed to include a truck-trailer data transmission. GRVA requested the secretariat to distribute it with an official symbol at the February session of GRVA.

43. The chair noted the number of informal documents proposing amendments to the ACSF provisions in UN Regulation No. 79 and invited the stakeholders to prepare a consolidated document with amendment proposals that could generate consensus at GRVA.

44. The expert from AVERE introduced GRVA-07-15. GRVA requested the secretariat to distribute this document with an official symbol at its next session. He also introduced GRVA-07-16 amendment proposals to ACSF of Category C. The experts from the Netherlands and Denmark expressed reservations with the document. GRVA could not reach consensus.

45. GRVA did not review GRVA-07-17 due to the lack of time. GRVA requested the secretariat to distribute this document with an official symbol for review at its next session.

B. Steering equipment

Documentation: ECE/TRANS/WP.29/GRVA/2020/16
Informal documents GRVA-07-22, GRVA-07-24

46. The expert from OICA recalled the purpose of ECE/TRANS/WP.29/GRVA/2020/16 and presented GRVA-07-22, inserting provisions in the Regulation for the approval of Risk Mitigation Function. He recalled that existing systems could no longer be approved according to the 03 series of amendments. GRVA agreed to resume discussion on this item and requested the secretariat to insert a corresponding agenda item in the provisional agenda for the next GRVA session.

47. The expert from OICA introduced GRVA-07-24, with provisions for the approval of systems providing manoeuvring assistance in low speed driving situations aimed at reducing damages and injuries. The expert from Japan commented that the 2 m/s^2 value seemed high. GRVA agreed to resume consideration of this item at its February 2021 session.

C. Remote Control Manoeuvring

48. No document had been submitted under this agenda item.

D. Other business

Documentation: Informal documents GRVA-07-23, GRVA-07-42

49. The expert from Germany briefly presented GRVA-07-42, proposing ideas on how to proceed with Advanced Driver Assist Systems and continuous automation up to Level 2 within UN Regulation No. 79. GRVA agreed to keep this document for further reference.

50. The expert from OICA presented GRVA-07-23 concerning the approval of hand off level 2 systems. He presented considerations aimed at understanding the principles under which such technology could be acceptable as a driver assistance system. The expert from Japan explained that such technology had not been reported to cause a specific safety risks, in his country. The expert from the Netherlands opposed to the proposal and stated the need to differentiate Level 2 from Levels 3-4 to avoid confusion and overreliance by drivers. The expert from ETSC expressed concerns about the safety of such systems.

51. GRVA agreed to consult AC.2 on appropriate activities regarding so-called “hands off” level 2 technologies.

VIII. Advanced Emergency Braking Systems (agenda item 7)

Documentation: ECE/TRANS/WP.29/GRVA/2020/25
ECE/TRANS/WP.29/GRVA/2020/26
ECE/TRANS/WP.29/GRVA/2020/27
ECE/TRANS/WP.29/GRVA/2020/28
ECE/TRANS/WP.29/GRVA/2020/35
Informal documents GRVA-07-03, GRVA-07-09, GRVA-07-10, GRVA-07-11, GRVA-07-12, GRVA-07-40, GRVA-07-53, GRVA-07-70, GRVA-07-72, GRVA-07-74,

52. The expert from Japan, Co-Chair of the IWG on Advanced Emergency Braking Systems (AEBS) for M_1 and N_1 vehicles, reported (GRVA-07-70) on the outcome produced by the group. He introduced ECE/TRANS/WP.29/GRVA/2020/26 with clarifications regarding, among others, response to failure, false reaction avoidance, sensor misalignment and automatic deactivation. He also introduced ECE/TRANS/WP.29/GRVA/2020/27 including provisions for the approval of AEBS covering Car to Bike scenarios (“1-step” approach) and mentioned the alternative proposals by OICA (“2-step approach).

53. The expert from OICA presented alternative proposals: ECE/TRANS/WP.29/GRVA/2020/28 and ECE/TRANS/WP.29/GRVA/2020/35. They include transitional provisions for specific cases with regards to the Car to Bike scenarios (GRVA-07-12, GRVA-07-72 and GRVA-07-74). He explained that the provisions developed by the group included lower speeds than those managed by existing vehicles meeting the corresponding test in New Car Assessment Test Programmes. He added that covering lower speeds would require modifying existing vehicles equipped with such systems, to cover larger sensor field of view.

54. GRVA adopted ECE/TRANS/WP.29/GRVA/2020/26 as amended by GRVA-07-09 (see Annex V) and requested the secretariat to submit it as supplement to the 00/01 series of amendments to UN Regulation No. 152 (AEBS) for consideration and vote by WP.29 and AC.1 at their March 2021 sessions.

55. GRVA adopted ECE/TRANS/WP.29/GRVA/2020/27 as amended by GRVA-07-10 (see Annex VI), ECE/TRANS/WP.29/GRVA/2020/28 as amended by GRVA-07-11 (see Annex VII) and ECE/TRANS/WP.29/GRVA/2020/35 as amended by GRVA-07-53 (see Annex VIII). GRVA requested the secretariat to submit them for consideration, decision on the 1-step or 2-step approach in November 2020 and vote by WP.29 and AC.1 at their March 2021 sessions.

56. GRVA noted that ECE/TRANS/WP.29/GRVA/2020/25 had been incorporated in the documents above.

57. GRVA agreed with the proposal of Germany to establish an IWG on AEBS for heavy vehicles. GRVA also agreed to consider the proposal from France to specifically address situations related to toll and level crossing barriers. GRVA endorsed the Terms of Reference (ToR) in GRVA-07-03 as modified by GRVA-07-40, reproduced in Annex IX.

58. GRVA agreed that the expert from Germany would invite delegations for the first informal meeting and requested the meeting to submit an updated ToR for review at the next GRVA session.

IX. UN Regulations Nos. 13, 13-H, 139 and 140 (agenda item 8)

A. Electronic Stability Control

Documentation: ECE/TRANS/WP.29/GRVA/2020/34
(ECE/TRANS/WP.29/2020/99)
Informal document GRVA-07-64

59. The expert from the Republic of Korea introduced ECE/TRANS/WP.29/GRVA/2020/34 proposed in accordance with ECE/TRANS/WP.29/2020/99 that provides the authorization to develop an amendment to UN Global Technical Regulation (UN GTR) No. 8. The experts from the USA inquired how the amendment to UN GTR No.8 would solve the issue raised. The expert from the Republic of Korea recalled the context of the proposal, addressing new steering systems with low gear rations. The expert from OICA recalled that this technical discussion took already place under the 1958 Agreement. The expert from Canada offered comments (GRVA-07-64) and questioned the need for a tolerance. He stated the need to verify the impact on safety of such proposal. The experts from the USA and the Netherlands advised to start future activities of this nature under the 1998 Agreement, first.

60. GRVA agreed to resume discussion on ECE/TRANS/WP.29/GRVA/2020/34 (or on a revised proposal) and on the report corresponding to this amendment at its next session.

B. Modular Vehicle Combinations

Documentation: ECE/TRANS/WP.29/GRVA/2020/30
Informal documents GRVA-07-35, GRVA-07-71

61. The expert from OICA presented ECE/TRANS/WP.29/GRVA/2020/30 with provisions for the approval of Modular Vehicle Combinations and GRVA-07-71 amending it.

62. GRVA adopted ECE/TRANS/WP.29/GRVA/2020/30 as amended by GRVA-07-71 (see Annex X) and requested the secretariat to submit it as a supplement to the 11 series of amendments to UN Regulation No. 13 for consideration and vote by WP.29 and AC.1 at their March 2021 sessions.

63. GRVA noted that the International Standard Organization provided GRVA-07-35 to the WP.29 and subsidiary bodies with a copy of ISO 11992.

C. Clarifications

Documentation: ECE/TRANS/WP.29/GRVA/2020/20
ECE/TRANS/WP.29/GRVA/2020/21
ECE/TRANS/WP.29/GRVA/2020/31
ECE/TRANS/WP.29/GRVA/2020/36
Informal documents GRVA-07-05, GRVA-07-46, GRVA-07-47, GRVA-07-48, GRVA-07-67, GRVA-07-68, GRVA-07-73-Rev.1, GRVA-07-75

64. The expert from France introduced ECE/TRANS/WP.29/GRVA/2020/20, aimed at clarifying the provisions in Annex 3, para. 1.5.3.1., in case the batteries have been recharged or replaced with a charged set, between the hot performance and recovery procedure, when the linings temperature is no longer at the temperature. GRVA adopted it and requested the secretariat to submit it as supplement to the 01 series of amendments to UN Regulation No. 13-H for consideration and vote by WP.29 and AC.1 at their March 2021 sessions.

65. The expert from CLEPA presented GRVA-07-68, introducing ECE/TRANS/WP.29/GRVA/2020/21 with provisions for the type approval of Electromechanical Braking systems. The expert from OICA introduced GRVA-07-46, aimed at improving and finalizing some open items in the CLEPA proposal. The expert from the Netherlands stated that some open items should still be finalized before adoption, such as para. 5.1.1.2. and should address the deterioration over time of the state of charge and the state of health. He also mentioned issues related to temperature differences during a trip that might impact the performance of the system. GRVA agreed to resume consideration of this matter at its next session.

66. GRVA agreed to defer consideration of ECE/TRANS/WP.29/GRVA/2020/31 and GRVA-07-48 on stop lights illumination at its next session.

67. The expert from Poland introduced GRVA-07-67 proposing correction to the table in para. 2.1.1. of Annex 4 in Regulation No. 13. GRVA requested the secretariat to distribute the document with an official symbol at the February 2021 session of GRVA.

68. The expert from Germany introduced ECE/TRANS/WP.29/GRVA/2020/36 proposing amendments to the endurance braking requirements, addressing concerns related to electric vehicles. The expert from OICA withdrew ECE/TRANS/WP.29/GRVA/2020/37 and worked on ECE/TRANS/WP.29/GRVA/2020/36. He presented GRVA-07-75, introducing GRVA-07-73-Rev.1, superseding GRVA-07-47 and incorporating GRVA-07-05, submitted by the expert from the Czech Republic.

69. GRVA adopted ECE/TRANS/WP.29/GRVA/2020/36 as amended by GRVA-07-73-Rev.1 (Annex XI) and requested the secretariat to submit it as supplement to the 11 series of amendments to UN Regulation No. 13 for consideration and vote by WP.29 and AC.1 at their March 2021 sessions.

X. Motorcycle braking (agenda item 9)

A. UN Global Technical Regulation No. 3

70. No document had been submitted under this agenda item.

B. UN Regulation No. 78

71. No document had been submitted under this agenda item.

XI. UN Regulation No. 90 (agenda item 10)

Documentation: Informal document GRVA-07-52

72. GRVA agreed to defer discussion on this item at its next session and requested the secretariat to distribute GRVA-07-52 with an official symbol.

XII. Revision 3 of the 1958 Agreement (agenda item 11)

A. Implementation of new provisions in Revision 3 to the 1958 Agreement

73. No document had been submitted under this agenda item.

B. International Whole Vehicle Type Approval

74. No document had been submitted under this agenda item.

XIII. Other business (agenda item 12)

A. List of priorities concerning GRVA activities

Documentation: (ECE/TRANS/WP.29/2020/1/Rev.1)

75. GRVA agreed to consult AC.2 on issues having an importance on the definition of priorities of work such as further developments of the UN Regulations No. 79, ACSF and ALKS, in light of the Framework Document on Automated vehicles.

B. Artificial Intelligence

Documentation: Informal documents GRVA-07-33, GRVA-07-77

76. GRVA received (i) a presentation (GRVA-07-77) from a delegation member of Israel introducing technologies in development for motorcycle safety and (ii) a presentation (GRVA-07-33) from the International Telecommunication Union (ITU) Focus Group on Artificial Intelligence for Automated Driving. ITU presented their understanding of the split of responsibilities between WP.1 and WP.29 as well as their views (through questions) related to the hypothetic Molly Problem, suggesting that further data should be collected by EDR / DSSAD.

77. The Vice-Chair of GRVA reacted on the presentation by ITU stating the need to clarify the definition of A.I. and the related safety related issued. He invited ITU to join the activities of VMAD.

78. The Secretary of the IWG on FRAV also invited ITU to join the FRAV activities.

79. The representative of Canada stated the importance of avoiding redundancy and overlap. Concerning the participation in FRAV and VMAD, he stated the need for the establishment of a formal mechanism.

80. GRVA agreed to consult AC.2 on how WP.29 should treat artificial intelligence.

C. Any other business

Documentation: (ECE/TRANS/294, para. 31-32)
Informal documents GRVA-07-14, GRVA-07-65, GRVA-07-76

81. The secretariat informed GRVA on the submission, by the group "Human Factors in International Regulations for Automated Driving Systems" operating under the auspice of the International Ergonomics Association (IEA), of a position paper GRVA-07-65 on teleoperation, stated to be a viable backup solution in case of problems encountered by ADS. He explained that this position paper had been presented during the same week at the session of WP.1.

82. The secretariat introduced GRVA-07-14, providing information on the ongoing activities related to the Inland Transport Committee decision at its February 2020 session (ECE/TRANS/294, para. 31-32), revising the UNECE Road Map on Intelligent Transport Systems. GRVA received the information that comments on the draft revised road map could be provided through the online collaboration available here: https://docs.google.com/document/d/1-tIgg7XLAaax0t-WuiMrdU8WFxH3eOO6/edit

83. Following the virtual and informal session *in lieu* of the seventh session of GRVA, the secretariat prepared the list of decisions stemming from this session, in English, French and Russian (GRVA-07-76). It had been submitted to the Heads of Delegations and the permanent representations of contracting parties in Geneva for an approval by silence procedure, in accordance with the special procedures established by the UNECE Executive Committee. The secretariat informed the delegations by email, ten days after the procedure had been initiated, that the silence had not been broken.

D. Tributes

84. GRVA was informed that Mr. J. Stokreef (Netherlands) would no longer attend GRVA sessions. GRVA thanked him for his important contributions both at GRRF and at GRVA during the last decades. GRVA wished him well for his retirement.

XIV. Election of officers (agenda item 13)

85. In compliance with Rule 37 of the Rules of Procedure (TRANS/WP.29/690 as amended), GRVA called for the election of officers.

86. Mr. R. Damm (Germany) was elected as Chair for the GRVA sessions in 2021. Ms. C. Chen (China) and Mr. T. Onoda (Japan) were elected as Vice-Chairs for the GRVA sessions in 2021.

Annex I

[English only]

List of informal documents (GRVA-07-…) considered during the session

No.	*(Author) Title*	*Follow-up*
1	(Chair) Running order	C
2	(Secretariat) Information on the virtual informal meeting in place of the seventh GRVA session	C
3	(Germany) Proposal for establishing a new IWG on AEBS for Heavy Vehicles	C
4r1	(CS/OTA) Proposal for an Interpretation Document for UN Regulation No. [155]	A
5	(Czech Republic) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/36	C
6	(EC and Russian Federation) Proposal for a supplement to UN Regulation No. [157] (ALKS)	C
7	(Russian Federation) Identified gaps in the provisions of UN Regulation No. [157] (ALKS)	C
8	(Russian Federation) Proposal for a supplement to UN Regulation No. [155] (CS and CSMS)	C
9	(AEBS) Proposal for Supplement 3 to UN Regulation No. 152 (AEBS)	C
10	(AEBS) Proposal for Supplement 2 to the 01 series of amendments to UN Regulation No.152 (AEBS)	C
11	(AEBS) Proposal for a supplement to the 02 series of amendments to UN Regulation No.152 (AEBS)	C
12	(OICA/CLEPA) Justification for a two-step approach for AEBS "car-to-bicycle"	C
13	(Secretariat) Highlights of the March and June 2020 sessions of WP.29	C
14	(Secretariat) Draft revision of the UNECE roadmap on ITS	C
15	(AVERE) Proposal for amendments to UN Regulation No. 79 (Steering equipment)	B
16	(AVERE) Proposal for amendments to UN Regulation No. 79 (Steering equipment)	C
17	(OICA/CLEPA) Alternative to the actuation of the remote control device for the use of RCP (UN Regulation No. 79)	B
18	(OICA/CLEPA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/22	C
19	(OICA/CLEPA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/22	C
20	(OICA/CLEPA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/22	C
21	(OICA/CLEPA) Proposal for clarifications to UN Regulation No. [157] (ALKS)	C
22	(OICA/CLEPA) Proposal for amendments to UN Regulation No. 79 (Steering equipment) - Emergency assist / RMF	C
23	(OICA/CLEPA) UN Regulation No. 79 and Lane Keeping Assist "Hands Off"	C
24	(OICA/CLEPA) Proposal for amendments to the 03 series of amendments to UN Regulation No. 79 (ESF)	C
25	(DETA) Guideline on the use of DETA as per UN Regulation No. [155] (CS and CSMS)	C
26	(OICA/CLEPA) ALKS: Scope extension for commercial vehicles and buses	C
27	(OICA/CLEPA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/32	C
28	(OICA/CLEPA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/33	C
29	(OICA/CLEPA) Proposal for clarifications to UN Regulation No. 79 - ACSF B1	C
30	(OICA/CLEPA) Proposal for editorial corrections to UN Regulation No. [157] (ALKS)	C

No.	*(Author) Title*	*Follow-up*
31	(OICA/CLEPA) Proposal for amendments to UN Regulation No. [157] (ALKS) - Scope extension	C
32	(OICA/CLEPA) Proposal for clarifications to UN Regulation No. 79 - ACSF B1	C
33	(ITU/FGAI4AD) Update on the ITU focus group "AI4AD" related activities	C
34r2	(Secretariat) Updated and consolidated agenda for the virtual and informal session (in place of the seventh GRVA session) - incl. informal documents received until 16 September 2020	C
35	(ISO) ISO 11992	C
36	(OICA) OICA comments on WP.29-181-10	C
37	(France) Proposal for amendments to UN Regulations Nos. [156] (CS+CSMS) and [157] (ALKS)	B
38	(France) Virtual testing methodology	C
39	(France) Request for interpretation of UN Regulation No. [157] (ALKS) regarding approaching emergency vehicles	C
40	(Japan) Proposal for amendments to GRVA-07-03 (AEBS)	C
41	(FIA) Protection profile for automated and connected vehicles	C
42	(Germany) How to proceed with ADAS and continuous automation up to Level 2 within UN Regulation No. 79?	C
43	(OICA/CLEPA) Amendments proposal to the ACSF of Category C provisions, with the main aim to include a truck-trailer data transmission	B
44	(CITA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/29	C
45	(ROK) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/33	C
46	(OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/21	C
47	(OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/36	C
48	(OICA/CLEPA) Supporting Presentation to ECE/TRANS/WP.29/GRVA/2020/31	C
49	(CS/OTA) Report of the current activities of the IWG on CS/OTA	C
50	(CS/OTA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/29 (tracked)	A
51	(CS/OTA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/29 (clean)	C
52	(CLEPA) Proposal for supplements to the 01 and 02 series of amendments to UN Regulation No. 90 (Replacement braking parts)	B
53	(AEBS) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/35	C
54	(FRAV) Status report of the IWG on FRAV	C
55	(VMAD) Status report on the IWG on VMAD	C
56	(EC) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/32 and ECE/TRANS/WP.29/GRVA/2020/33	C
57	(EDR/DSSAD) Review of the existing national / regional activities and a proposed way forward for DSSAD	C
58	(EDR/DSSAD) Status report of the IWG on EDR/DSSAD	C
59	(OICA) Comments on GRVA-07-06	C
60	(EDR/DSSAD) Proposal to amend document ECE/TRANS/WP.29/2020/123	C
61	(EDR/DSSAD) Proposal to amend document ECE/TRANS/WP.29/2020/100	C
62	(UK) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/33	C
63	(Germany) Introducing two amendment proposals to UN Regulation No. [157] on ALKS	C
64	(Canada) Proposal for an amendment to ECE/TRANS/WP.29/GRVA/2020/34	C
65	(HF-IRADS/IAE) HF-IRADS position paper on Human factors challenges of remote support and control (Also Informal document No. 8 of the September 2020 session of WP.1)	C

No.	*(Author) Title*	*Follow-up*
66	(OICA/CLEPA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/33	C
67	(Poland) Proposal for amendments to UN Regulation No. 13 (Heavy vehicle braking)	B
68	(CLEPA) UN Regulation No. 13 and EMB	C
69r1	(OICA/CLEPA) Proposal for amendments to UN Regulation No. [157] (ALKS)	C
70	(AEBS) Presentation of the proposals submitted by the IWG on AEBS	C
71	(OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/30 - MVC	C
72	(OICA) Recommended UN Regulation No. 152 implementation	C
73r1	(OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/202/36	C
74	(OICA) Visualization - Transitional Provisions according to ECE/TRANS/WP.29/GRVA/2020/28	C
75	(OICA) Supporting presentation for GRVA-07-73	C
76	(Secretariat) List of decisions for the silence procedures	C
77	(Israel) Ride Vision - saving rider's life	C

Notes:

Administrative follow-up, for the secretariat, with the informal documents:

A Adopted and to be forwarded to WP.29 as informal document;

B Resume consideration on the basis of a document with an official symbol;

C Consideration completed.

Annex II

[English only]

List of Informal Working Groups reporting to GRVA (as of September 2020)

Informal Working Group	*Chair/Co-Chairs*	*Country*	*Mandate until*
Functional Requirements for Automated and Autonomous Vehicles (FRAV)	Ms. C. Chen[1] Mr. R. Damm[1] Mr. E. Wondimneh.[1]	China Germany USA	March 2020*
Validation Method for Automated Driving (VMAD)	Mr. I. Sow[1] Mr. T. Onoda[1] Mr. P. Striekwold[1]	Canada Japan Netherlands	December 2020*
Cyber Security and Over-The-Air software updates (CS/OTA)	Mr. T. Niikuni[1] Dr. D. Handley[1] Ms. M. Versailles[1]	Japan UK USA	March 2022
Event Data Recorder / Data Storage System for Automated Driving (EDR/DSSAD)	Mr. T. Guiting[1] Mr. T. Tokai[1] Mrs. J. Doherty[1]	Netherlands Japan USA	November 2020*
Advanced Emergency Braking Systems (AEBS)	Mr. A. Lagrange[1] Mr. T. Hirose[1]	EC Japan	March 2022

* The mandate dates are being reviewed by WP.29 in the review process of the Framework Document on Automated Vehicles

[1] IWG Co-Chairs

Annex III

Draft Supplement 1 to UN Regulation No. [157] (ALKS)

Adopted on the basis of GRVA-07-69-Rev.1 (see para. 23)

Paragraph 2.10., amend to read:

2.10. "*Detection range*" of the sensing system is the distance at which the system can reliably recognise a target, taking account of the deterioration of components of the sensing system due to time and usage throughout the lifetime of the system and generate a control signal.

Paragraph 2.11.4., amend to read:

2.11.4. A "*severe vehicle failure*" is any failure of the vehicle (e.g. electrical, mechanical) that affects the ability of the ALKS to perform the Dynamic Driving Task and would also affect the manual operation of the vehicle (e.g. loss of power supply, failure of the braking system, sudden loss of tire pressure).

Paragraph 2.18., amend to read:

2.18. "*R_{157} Software Identification Number (R_{157}SWIN)*" means a dedicated identifier, defined by the vehicle manufacturer, representing information about the type approval relevant software of the Electronic Control System contributing to the UN Regulation No. 157 type approval relevant characteristics of the vehicle.

Paragraph 2.20., amend to read:

2.20. "*Software*" means the part of an electronic control system that consists of digital data and instructions.

Paragraph 5., amend to read:

5. System Safety and Fail-safe Response

The fulfilment of the provisions of this paragraph shall be demonstrated by the manufacturer to the technical service during the inspection of the safety approach as part of the assessment to Annex 4 (in particular for conditions not tested under Annex 5) and according to the relevant tests in Annex 5.

Paragraph 5.1., amend to read (deletion of the subparagraph, moved to para. 5.):

5.1. General Requirements

Paragraph 5.1.9., amend to read:

5.1.9. When the system can no longer meet the requirements of this Regulation, it shall not be possible to activate the system.

The manufacturer shall declare and implement a process to manage the safety and continued compliance of the ALKS over the lifetime of the system.

Paragraph 5.2., amend to read (deletion of the subparagraph, moved to para. 5.):

5.2. Dynamic Driving Task

Paragraph 5.2.5., amend to read (deletion of the subparagraph, moved to para. 5.):

5.2.5. The activated system shall detect the risk of collision in particular with another road user ahead or beside the vehicle, due to a decelerating lead vehicle, a cutting in vehicle or a suddenly appearing obstacle and shall automatically perform appropriate manoeuvres to minimize risks to safety of the vehicle occupants and other road users.

Paragraph 5.2.5.4., amend to read:

5.2.5.4. It is recognised that the fulfilment of the requirement in paragraph 5.2.5. may not be fully achieved in other conditions than those described above. However, the system shall not deactivate or unreasonably switch the control strategy in these other conditions. This shall be demonstrated in accordance with Annex 4 of this Regulation.

Insert new paragraphs 5.2.6. and 5.2.7. to read:

5.2.6. Reserved (Lane Change)

5.2.7. For conditions not specified in paragraphs 5.2.4., 5.2.5. or its subparagraphs, the performance of the system shall be ensured at least to the level at which a competent and careful human driver could minimize the risks. The attentive human driver performance model and related parameters in the traffic critical disturbance scenarios from Annex 3 may be taken as guidance. The capabilities of the system shall be demonstrated in the assessment carried out under Annex 4.

Paragraphs 5.3. and 5.3.1., amend to read:

5.3. Emergency Manoeuvre (EM)

5.3.1. An EM shall be carried out in case of an imminent collision risk.

Paragraph 5.4., amend to read (deletion of the subparagraph, moved to para. 5.):

5.4. Transition demand and system operation during transition phase.

Paragraph 5.5., amend to read (deletion of the subparagraph, moved to para. 5.):

5.5. Minimum Risk Manoeuvre (MRM)

Paragraphs 5.5.4., 5.5.5. and 5.5.6. shall be renumbered as *5.5.3., 5.5.4. and 5.5.5.*

Paragraphs 6. and 6.1., amend to read:

6. Human Machine Interface/operator information

The fulfilment of the provisions of this paragraph shall be demonstrated by the manufacturer to the technical service during the inspection of the safety approach as part of the assessment to Annex 4 and according to the relevant tests in Annex 5.

6.1. Driver Availability Recognition System

Paragraphs 6.1.4. and 6.2., amend to read:

6.1.4. "*Other activities than driving*" through on-board displays available upon activation of the ALKS shall be automatically suspended (i) as soon as the system issues a transition demand or (ii) as soon as the system is deactivated, whichever comes first.

6.2. Activation, Deactivation and Driver Input

Paragraph 6.2.5.1. (a) and (b), amend to read:

(a) The driver overrides the system by steering while holding the steering control and this override is not suppressed, as specified in paragraph 6.3.1.; or

(b) The driver is holding the steering control and overrides the system by braking or accelerating, as specified in paragraphs 6.3.2. and 6.3.3. below.

Paragraph 6.3.7., shall be deleted.

Subparagraph in paragraph 6.4.3., for "*Minimum Risk Manoeuvre*", read "*MRM*".

Paragraph 6.4.4., amend to read:

6.4.4. Where examples are given in paragraph 6.4. and its subparagraphs above, an adequate and equally perceptible interface design for the optical signals may be used instead. This shall be demonstrated by the manufacturer and shall be supported by documented evidence. This shall be assessed by the Technical Service according to Annex 4.

Paragraph 6.4.5., amend to read:

6.4.5. Prioritization of ALKS warnings

The warnings of an ALKS during a transition phase, a MRM or an EM may be prioritized over other warnings in the vehicle.

The prioritization of different acoustic and optical warnings during the ALKS operation shall be declared by the manufacturer to the Technical Service during Type Approval.

Paragraphs 7. and 7.1., amend to read:

7. Object and Event Detection and Response (OEDR)

The fulfilment of the provisions of this paragraph shall be demonstrated by the manufacturer to the technical service during the inspection of the safety approach as part of the assessment to Annex 4 and according to the relevant tests in Annex 5.

7.1. Sensing requirements

Paragraph 7.1.4., amend to read:

7.1.4. The vehicle manufacturer shall provide evidence that the effects of wear and ageing do not reduce the performance of the sensing system below the minimum required value specified in paragraph 7.1. over the lifetime of the system.

Paragraphs 8. and 8.1., amend to read:

8. Data Storage System for Automated Driving (DSSAD)

The fulfilment of the provisions of this paragraph shall be demonstrated by the manufacturer to the technical service during the inspection of the safety approach as part of the assessment to Annex 4.

8.1. Fitment

Each vehicle equipped with ALKS (the system) shall be fitted with a DSSAD that meets the requirements specified below.

Paragraph 8.3.2., for "R_{15x}" read "R_{157}"

Paragraphs 9., 9.1. and 9.2., amend to read:

9. Cyber security and software updates

9.1. Cyber security and cyber security management system

The effectiveness of the system shall not be adversely affected by cyber-attacks, cyber threats and vulnerabilities. The effectiveness of the security measures shall be demonstrated by compliance with UN Regulation No. 155.

9.2. Software update and software updates management system

If the system permits software updates, the effectiveness of the software update procedures and processes shall be demonstrated by compliance with UN Regulation No. 156.

In paragraphs 9.3.1. to 9.3.2.3., for "R_{15x}" read "R_{157}" and for "15Y" read "156".

Note: Further amendments to the Annexes were adopted as in GRVA-07-69-Rev.1. They are not reproduced in this report as their length cannot be accommodated in this report.

Annex IV

Amendments to ECE/TRANS/WP.29/GRVA/2020/29

Adopted on the basis of GRVA-07-50 (see para. 34)

Paragraph 3.1.(a), amend to read:

> (a) Before implementation of the first software update to a vehicle the vehicle manufacturer shall ensure it has a valid type approval for software update process and a valid Software Update Management System (SUMS) that is relevant to the vehicle type;

In the diagram in paragraph 3.3., for "*OEM*", read "*Vehicle Manufacturer*"

Paragraph Q, amend to read (insert "(c)"):

…

(c) How information regarding an update that is relevant to an R_XSWIN is recorded, this should include:

…

(i) List of R_XSWINs affected by the software update

Annex V

Amendments to ECE/TRANS/WP.29/GRVA/2020/26

Adopted on the basis of GRVA-07-09 (see para. 54)

Insert a new paragraph 5.1.4.1.3., to read:

5.1.4.1.3. Upon detection of any non-electrical failure condition (e.g. sensor blindness or sensor misalignment), the warning signal as defined in paragraph 5.1.4.1. shall be illuminated.

Paragraph 5.1.4.3., shall be deleted.

Paragraph 5.1.6., amend to read:

5.1.6. False reaction avoidance

The system shall be designed to minimise the generation of collision warning signals and to avoid advanced emergency braking in situations where **there is no risk of an imminent collision** ~~the driver would not recognise an impending collision~~. This shall be demonstrated in the assessment carried out under Annex 3, and this assessment shall include in particular scenarios listed in Appendix 2 of Annex 3.

Paragraph 5.2.1.4.(f), amend to read:

(f) In absence of weather conditions affecting the dynamic performance of the vehicle (e.g. no storm, not below 0°C); **and**

Paragraph 5.4.2., amend to read:

5.4.2. When the vehicle is equipped with a means to automatically deactivate the AEBS function, for instance in situations such as off-road use, being towed, being operated on a dynamometer, being operated in a washing plant, ~~in case of a non-detectable misalignment of sensors,~~ the following conditions shall apply as appropriate:

Insert a new paragraph 5.4.2.3., to read:

"**5.4.2.3. Where automatic deactivation of the AEBS function is a consequence of the driver manually switching off the ESC function of the vehicle, this deactivation of the AEBS shall require at least two deliberate actions by the driver.**"

Paragraph 5.5.7., amend to read:

"5.5.7. When the driver is provided with an optical warning signal to indicate that the AEBS is temporarily not available, for example due to inclement weather conditions, the signal shall be constant ~~and yellow in colour~~. The failure warning signal specified in paragraph 5.5.4. above may be used for this purpose."

Paragraph 6.1.1.1., amend to read (including in the footnote):

"6.1.1.1. The road test surface shall have a nominal[3] peak braking coefficient (PBC) of ~~at least~~ 0.9. unless otherwise specified. when measured using either:

…

Footnote 3: The "nominal" value is understood as being the ~~minimum~~ theoretical target value."

Insert a new paragraph 6.1.6., to read:

"**6.1.6. At the request of the manufacturer and with the agreement of the Technical Service tests may be conducted under deviating test conditions (suboptimal conditions, e.g. on a not dry surface; below the specified**

minimum ambient temperature), whilst the performance requirements are still to be met."

Paragraph 6.4., amend to read (including the addition of one column in each table):

"6.4. Warning and Activation Test with a Stationary Vehicle Target

The subject vehicle …

…

… in stationary target scenario

Maximum mass	*Mass in running order*	***Tolerance***
20	20	**+2/-0**
40	42	**+0/-2**
60	60	**+0/-2**

All values in km/h ~~with a tolerance of +0/-2 km/h~~

… in stationary target scenario

Maximum mass	*Mass in running order*	***Tolerance***
20	20	**+2/-0**
38	42	**+0/-2**
60	60	**+0/-2**

All values in km/h ~~with a tolerance of +0/-2 km/h~~

The functional part …".

Paragraph 6.5., amend to read (including the addition of one column in each table):

"6.5. Warning and Activation Test with a Moving Vehicle Target

The subject vehicle …

Tests shall be conducted with a vehicle travelling at 30 and 60 km/h speeds shown in tables below for respectively M_1 and N_1 categories and target travelling at 20 km/h (with a tolerance of +0/-2 km/h for ~~both the subject and~~ the target vehicle~~s~~). If this is deemed justified, …

… in moving target scenario

Maximum mass	*Mass in running order*	***Tolerance***
30	30	**+2/-0**
60	60	**+0/-2**

All values in km/h ~~with a tolerance of +0/-2 km/h~~

… in moving target scenario

Maximum mass	*Mass in running order*	***Tolerance***
30	30	**+2/-0**
58	60	**+0/-2**

All values in km/h ~~with a tolerance of +0/-2 km/h~~

The functional part …".

Paragraph 6.6.1., amend to read (including the addition of one column in each table):

"6.6. Warning and Activation Test with a Pedestrian Target

6.6.1. The subject vehicle …

…

The pedestrian target shall travel in a straight line perpendicular to the subject vehicle's direction of travel at a constant speed of 5 km/h **+0/-0,4** ~~± 0.2~~ km/h, starting not before the functional part of the test has started. The pedestrian target's positioning shall…

… in pedestrian target scenario

Maximum mass	*Mass in running order*	***Tolerance***
20	20	**+2/-0**
40	42	**+0/-2**
60	60	**+0/-2**

All values in km/h ~~with a tolerance of +0/-2 km/h~~

… in pedestrian target scenario

Maximum mass	*Mass in running order*	***Tolerance***
20	20	**+2/-0**
38	42	**+0/-2**
60	60	**+0/-2**

All values in km/h ~~with a tolerance of +0/-2 km/h~~

From the start…"

Note: further amendments to the Annexes were adopted, as reproduced in GRVA-07-09. They are not reproduced in this report because of their length, that cannot be accommodated in this report.

Annex VI

Amendments to ECE/TRANS/WP.29/GRVA/2020/27

Adopted on the basis of GRVA-07-10 (see para. 55)

Adopted amendments to paragraphs 5.1.4.1.3. to 6.6.1., see Annex V

Paragraph 6.7., amend to read:

"6.7. Warning and Activation Test with a Bicycle Target

6.7.1. The subject vehicle shall approach the impact point with the bicycle target in a straight line for at least two seconds prior to the functional part of the test with an anticipated subject vehicle to crankshaft of the bicycle impact point centreline offset of not more than 0.1 m. ~~adopted~~

…

The bicycle target shall travel in a straight line perpendicular to the subject vehicle's direction of travel at a constant speed of 15 km/h **+0/-1** ~~± 0.5~~ km/h, starting not before the functional part of the test has started.

…

Tests shall be conducted with a vehicle travelling at ~~tests shall be conducted with a vehicle travelling at~~ speeds shown in tables below for respectively M_1 and N_1 Categories. The technical …

… in bicycle target scenario

Maximum mass	***Mass in running order***	***Tolerance***
20	**20**	**+2/-0**
38	**40**	**+0/-2**
60	**60**	**+0/-2**

~~*Maximum mass*~~	~~*Mass in running order*~~
~~30~~	~~30~~
~~38~~	~~38~~
~~60~~	~~60~~

~~All values in km/h with a tolerance of +0/ 2 km/h~~

…

Subject vehicle test speed for N_1 category in bicycle target scenario

Maximum mass	***Mass in running order***	***Tolerance***
20	**20**	**+2/-0**
36	**40**	**+0/-2**
60	**60**	**+0/-2**

~~*Maximum mass*~~	~~*Mass in running order*~~
~~30~~	~~30~~
~~35~~	~~38~~
~~60~~	~~60~~

~~All values in km/h with a tolerance of +0/ 2 km/h~~

…"

Note: further amendments to the Annexes were adopted, as reproduced in GRVA-07-10. They are not reproduced in this report because of their length, that cannot be accommodated in this report.

Annex VII

Amendments to ECE/TRANS/WP.29/GRVA/2020/28

Adopted on the basis of GRVA-07-11 (see para. 55)

Adopted amendments to paragraphs 6.7. and 6.7.1., to read in Annex VI

Annex VIII

Amendments to ECE/TRANS/WP.29/GRVA/2020/35

Adopted on the basis of GRVA-07-53 (see para. 55)

Adopted amendments to paragraphs 5.1.4.1.3. to 5.2.1.4.(f), to read in Annex V

Paragraph 5.2.3.4., amend to read:

"5.2.3.4. Speed reduction by braking demand

Maximum Impact Speed (km/h) for M_1*

Subject vehicle speed (km/h)	*Maximum mass*	*Mass in running order*
30	0.00	0.00
35	0.00	0.00
38	0.00	0.00
40	10.00	**0.00** ~~10.00~~
45	25.00	25.00
50	30.00	30.00
55	35.00	35.00
60	40.00	40.00

All values in km/h

* For subject vehicle speeds …"

Adopted amendments to paragraphs 5.4.2. to 6.6.1., to read in Annex V

Adopted paragraph 6.7. and 6.7.1, to read in Annex V, with the exception of the tables below*:*

… in bicycle target scenario

Maximum mass	*Mass in running order*	***Tolerance***
30	30	**+2/-0**
38	38	**+0/-2**
60	60	**+0/-2**

All values in km/h ~~with a tolerance of +0/-2 km/h~~

… in bicycle target scenario

Maximum mass	*Mass in running order*	***Tolerance***
30	30	**+2/-0**
35	38	**+0/-2**
60	60	**+0/-2**

All values in km/h ~~with a tolerance of +0/-2 km/h~~

…"

Note: further amendments to the Annexes were adopted, as reproduced in GRVA-07-53. They are not reproduced in this report because of their length, that cannot be accommodated in this report.

Annex IX

Adopted Terms of Reference and Rules of Procedure for a new IWG on AEBS for Heavy Vehicles

Based on informal document GRVA-09-03, amended by GRVA-09-40

A. Terms of Reference

1. The Informal Working Group (IWG) shall develop a draft regulatory proposal to revise UN Regulation No. 131 with the aim to adapt the Regulation to the state of the art technology and to align it with new concepts which were developed for Advanced Emergency Braking Systems (AEBS) for M_1 and N_1 vehicles (UN Regulation No.152).

2. In particular the IWG shall address the following issues:

(a) Assess the accident situation for heavy duty vehicles in regions where UN Regulation No. 131 is presently applied, looking at the effectiveness of the current performance requirements, differentiated between M_2/N_2-vehicles and M_3/N_3-vehicles.

(b) Define state of the art performance requirements, especially for collisions involving stationary vehicles and/or objects, based on the results from the action item above.

(c) Review the values for the target speed reduction for M_2 and N_2 vehicles (as requested in Annex 3 of UN-Regulation No. 131) before November 2021.

(d) Review AEBS on Car to Car (C2C), Car to Pedestrian (C2P) and Car to Bicycle (C2B) for heavy duty vehicles. Incorporate new concepts from UN-Regulation No.152 on AEBS for M_1 and N_1 vehicles (e.g. definition of requirements for a range of parameters)**, before November 2021** ~~as far as possible~~.

3. The IWG shall take full account of developments and work in full cooperation with other subsidiary Working Parties (GRs) of WP.29 and their IWGs.

4. The IWG should take into account existing data, research and voluntary standards available in the contracting parties in developing its proposals.

5. Text shall, to the fullest extent possible, be performance based and technology neutral.

6. The IWG shall deliver the complete regulatory text for AEBS for heavy duty vehicle requirements as revision of UN Regulation No. 131 for the February 2022 session of GRVA.

B. Rules of Procedure

1. The IWG shall report to GRVA and is open to all participants of WP.29.

2. Two Co-Chairs and a Secretary will manage the IWG.

3. The Co-Chairs may invite experts (at their discretion), including non-participants of WP.29, to assist in the development of technical standards.

4. The working language of the IWG will be English.

5. All documents and/or proposals must be submitted to the Secretary of the relevant group in a suitable electronic format in advance of the meeting. The group may refuse to discuss any item or proposal which has not been circulated five working days in advance to the meeting.

6. An agenda and related documents will be circulated to all members of the IWG in advance of all scheduled meetings.

7. Decisions will be reached by consensus. When consensus cannot be reached, the Co-Chairs of the group shall present the different points of view to GRVA. The Co-Chairs may seek guidance from GRVA as appropriate.

8. The progress of the IWG will be reported routinely to GRVA – wherever possible as an informal document and presented by the Co-Chairs.

9. All documents shall be distributed in digital format. Meeting documents should be made available to the Secretary for publication on the dedicated website.

10. Final decision on proposals rests with WP.29 and the Contracting Parties.

Annex X

Amendments to ECE/TRANS/WP.29/GRVA/2020/30

Adopted on the basis of GRVA-07-71 (see para. 62)

Add a new paragraph 1.2.4., to read:

1.2.4. Hinged drawbar dolly, as defined in paragraph 2.42.1.;

Paragraph 5.1.3.9., amend to read:

5.1.3.9. ~~In the case of tractor and semi-trailer combinations, the flexible hoses and cables shall be a part of the power-driven vehicle. In all other cases, the flexible hoses and cables shall be a part of the trailer.~~ **The flexible hoses and cables used for the connection between a towing vehicle for semi-trailer ~~[(e.g. a tractor, a link-trailer, a dolly)]~~ and its following semi-trailer shall be part of the towing vehicle.**

The flexible hoses and cables used for the connection between a towing vehicle for trailer other than a semi-trailer ~~[(e.g. a rigid truck, a centre-axle towing trailer)]~~ and its following trailer ~~[(e.g. a dolly, a centre-axle trailer)]~~ shall be part of the following trailer.

In the case of an automated connector, this requirement regarding the allocation of flexible hoses and cables is not applicable.

Paragraph 5.2.1.29.2.1., amend to read:

5.2.1.29.2.1. In the case of a power-driven vehicle equipped with an electric control line, when electrically connected to a trailer with an electric control line, the red warning signal specified in paragraph 5.2.1.29.1.1. above shall also be used to indicate certain specified failures within the braking equipment of the trailer, whenever the trailer provides corresponding failure information via the data communication part of the electric control line. **The above requirement shall also apply when a towing trailer connected to the power-driven vehicle transmits the red warning signal request from any succeeding towed trailer as defined within ~~part 2 of [~~ISO 11992-2:2014~~]~~.** This indication shall be in addition to the yellow warning signal specified in paragraph 5.2.1.29.2. above. Alternatively, instead of utilizing the red warning signal specified in paragraph 5.2.1.29.1.1. and the accompanying yellow warning signal above, a separate red warning signal may be provided in the **power-driven** ~~towing~~ vehicle to indicate such a failure within the braking equipment of **a** ~~the~~ trailer.

Paragraph 5.2.1.34., amend to read:

5.2.1.34. ~~[Additional / ~~Special~~]~~ requirements applicable to power-driven vehicles authorised to tow more than one trailer of category O_3 or O_4.

Paragraph 5.2.2.17.3., amend to read:

5.2.2.17.3. Repeater

In case the length of an electric control line installed in a trailer exceeds the maximum permissible length(s) according to ISO 11992-1:2003, a device to repeat the transmitted messages shall be installed to split the electric control line in two electric segments which both fulfil the maximum permissible length according to ISO 11992-1:2003 ~~[In all cases repeating of messages shall not delay the transmission of messages.]~~ The requirements of ISO 11992 and the relevant requirements of this Regulation shall continue to be fulfilled. Regarding the application of ~~[~~ISO 11992-2:2014~~]~~, the function of the repeater device shall be considered as a special message routing function where all messages are directly routed without modification.

New paragraphs. 5.2.2.24. to 5.2.2.25.2., amend to read:

5.2.2.24. ~~[~~Additional / ~~Special]~~ requirements applicable to towing trailers of Category O_3 or O_4 able to tow another trailer of Category O_3 or O_4

5.2.2.24.1. Towing trailers shall be equipped with pneumatic control/supply lines and electric control line as specified in paragraph 5.1.3.1.2. of this Regulation, for the purpose of being connected to the towing and to the towed vehicles~~[~~, respectively via the "front" and the "rear" coupling heads & electric connector~~]~~.

5.2.2.24.2. Message routing function

Towing trailers shall be equipped with a message routing function as defined in paragraph 6.3 of ~~[~~ISO 11992-2:2014~~]~~. The device supporting this function is deemed to fulfil the point to point requirement specified in paragraph 5.1.3.6. for the electric control line between electronic control units.

5.2.2.24.3. The "pin 5" signal transmitted from the towed trailer via pin 5 of the ISO 7638:2003 electric connector (or as relevant via the equivalent pin of an automated connector meeting the requirements of Annex 22) shall be ~~combined~~ electrically connected with the "pin 5" signal generated by the towing trailer, and transmitted to the towing vehicle. ~~The pin 5 of the rear electric connector shall be electrically isolated from the pin 5 of the front electric connector.~~

…

5.2.2.24.7. The braking system of the towed trailer may only be operated in conjunction with the service, parking braking system or automatic braking system of the towing trailer. However, application of the towed trailer brakes alone is permitted where the operation of the towed trailer brakes is initiated automatically by the towing vehicle(s) ~~trailer [or power driven vehicle]~~ for the sole purpose of vehicle stabilization.

…

5.2.2.24.11. ~~[~~Additional / ~~Special]~~ requirements for dollies

5.2.2.24.11.1. Rigid drawbar dolly

A rigid drawbar dolly as defined in paragraph 2.42.1. of this Regulation shall be considered to be a centre axle trailer with respect to the requirements of paragraph 3. of Annex 4 and paragraph 5. of Annex 10.

5.2.2.24.11.2. Hinged drawbar dolly

(Reserved; not covered by this Regulation)

5.2.2.24.12. ~~[~~Additional / ~~Special]~~ requirements for link-trailers

A link-trailer as defined in paragraph 2.42.2. of this Regulation shall be considered to be a semi-trailer with respect to the requirements of paragraph 3. of Annex 4 and paragraph 5. of Annex 10.

5.2.2.25. ~~[~~Additional / ~~Special]~~ requirements applicable to trailers other than towing trailers of Category O_3 or O_4, authorized to be coupled to a towing trailer

5.2.2.25.1. The trailer shall be equipped with a pneumatic and an electric control line, as per paragraph 5.1.3.1.2.

5.2.2.25.2. The parking brake performance of the trailer shall be fulfilled by the application of spring brakes fulfilling the relevant requirements of Annex 4 and Annex 8.

Note: further amendments to the Annexes were adopted, as reproduced in GRVA-07-71. They are not reproduced in this report because of their length, that cannot be accommodated in this report.

Annex XI

Amendments to ECE/TRANS/WP.29/GRVA/2020/36

Adopted on the basis of GRVA-07-73-Rev.1 (see para. 69)

Amend new paragraph 2.40., to read:

2.40. ***"Brake performance Estimator"*** **means a function estimating ~~being able to estimate~~ the ~~remaining~~ available friction brake ~~vehicle deceleration~~ performance taking into account the effect of ~~due to~~ brake heat, operating by models considering inputs such as for example type and position of the brakes, number and intensity of brake applications, vehicle speed or ambient temperature.**

Amend new paragraph 5.1.2.4. and subparagraphs, to read:

5.1.2.4. **Endurance braking system**

The endurance braking system shall make it possible to maintain a constant downhill speed over a long period of time without the use of the friction brakes.

The following requirements only apply to vehicles specified in Annex 4 paragraph 1.8.1. These requirements are deemed satisfied if the relevant test requirements specified in Annex 4 paragraph 1.8. are met.

5.1.2.4.1. **As an equivalent of a long period of time, a time duration of at least [12] min is deemed to be adequate.**

5.1.2.4.2. **During the time duration specified in paragraph 5.1.2.4.1. the endurance braking system shall be able to maintain ~~a constant~~ an average speed of ~~not more than [35] km/h and not less than~~ [30] km/h on a 7 per cent down-gradient ~~for a distance of 6 km~~.**

However, for vehicles in which the energy is absorbed by the braking action of the engine alone, the tolerance on the average speed, as specified in Annex 4 paragraph 1.8.2.3., shall be applied.

5.1.2.4.3. **Special requirements applicable endurance braking system incorporating electric regenerative braking systems**

5.1.2.4.3.1. **~~In the case of an endurance braking system incorporating electric regenerative braking systems,~~ it shall be is deemed to comply with the requirements in paragraphs 5.1.2.4.1. and 5.1.2.4.2., if the vehicle equipped with the endurance braking system is able to store and/or dissipate [(e.g. with an extra-endurance brake)] the energy of the maximum negative vertical height difference (requiring energy storage capacity in the traction battery), limited to the energy level as required to fulfil the requirements in paragraphs 5.1.2.4.1. and 5.1.2.4.2., that can be reached by the vehicle (consuming stored energy in the traction battery on the journey towards the relevant negative vertical height difference), considering the current electric state of charge, using methods such as a global navigation satellite systems combined with a topography model and an intelligent battery management system.**

This shall be demonstrated to the satisfaction of the Technical Service.

5.1.2.4.~~4.~~3.2. **~~In the case of an endurance braking system incorporating electric regenerative braking systems, as~~ As an alternative to paragraph 5.1.2.4.3.1., ~~endurance braking systems incorporating electric regenerative braking systems may use the service braking system when the vehicle's traction battery is not able to store recuperated energy due to a high state of charge, provided that~~ the service braking system ~~is able to~~ shall fulfil the requirements of Annex 4, paragraph ~~1.8.2.4~~ 1.8.2.5.**

In addition, a brake performance estimator shall warn the driver according to paragraph 5.2.1.29.7.

5.1.2.4.3.3. Additional requirement in the case of an endurance braking system solely based on an electric regenerative braking system:

Prior to the time when the braking force of the electric regenerative braking can no longer be provided (e.g. when the battery is fully loaded), the driver shall be informed about the situation (e.g. an information on the remaining retardation capacity, a reduction of the provided retardation force).

Insert a new paragraph 5.2.1.29.7., to read:

5.2.1.29.7. Vehicles equipped with an electric regenerative braking system of Category A or B (as defined in paragraphs 2.21.2. and 2.21.3.), using the service braking system in addition to the endurance braking system only when the state of charge of the traction battery does not allow storing of the energy due to a high state of charge, shall warn the driver at the latest when the service braking performance is decreased below the minimum performance value specified in

(a) Annex 4, paragraph 1.6.3. by the yellow warning signal according to paragraph 5.2.1.29.1.2. and

(b) Annex 4, paragraph 2.2.1. by the red warning signal according to paragraph 5.2.1.29.1.1.

The method to assess the service braking performance [(e.g. by temperature/ energy calculation and/or deceleration control)] shall be described by the vehicle manufacturer together with the documentation package required in Annex 18 of this Regulation to the Technical Service.

Note: further amendments to the Annexes were adopted, as reproduced in GRVA-07-71. They are not reproduced in this report because of their length, that cannot be accommodated in this report.