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Twelfth session

Geneva, 24-28 January 2022

Report of the Working Party on Automated/Autonomous and Connected Vehicles on its twelfth session

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I. Attendance

1. The Working Party on Automated/Autonomous and Connected Vehicles (GRVA) met from 24 to 28 January 2022, hosted from 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): Australia, Austria, Belgium, Brazil, Canada, China, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Hungary, India, Israel, Italy, Japan, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Republic of Korea, Russian Federation, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, the United Kingdom of Great Britain and Northern Ireland (UK) and the United States of America (USA). An expert from the European Commission (EC) also participated.

2. 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), European Association of Automotive Suppliers (CLEPA/MEMA/JAPIA), European Garage Equipment Association (EGEA), European Tyre and Rim Manufacturer Association (ETRMA), European Transport Safety Council (ETSC), European Association of Internal Combustion Engine Manufacturers (EUROMOT), Federation of European Manufacturers of Friction Materials (FEMFM), International Automobile Federation (FIA), International Federation of Automotive Distributors (FIGIEFA), International Motorcycle Manufacturers Association (IMMA), International Organization for Standardization (ISO), International Telecommunication Union (ITU), International Organization of Motor Vehicle Manufacturers (OICA), SAE International, Securing America's Future Energy (SAFE), Self-Driving Coalition for Safer Streets and World Bicycle Industry Association (WBIA).

3. The Chair opened the meeting by mentioning the Coronavirus 2019 outbreak context, the reason why the meeting was conducted in a hybrid format, with most of the delegations attending online. He gave the floor to Mr W. Nissler, Chief of Section, who announced the promotion of Mr. E. Gianotti as Secretary to the Working Party on General Safety provisions (GRSG). Mr. W. Nissler also announced that, therefore, the post dealing with the secretariat of the Working Party on Passive Safety (GRSP) was vacant. He strongly encouraged female experts, as well as experts from underrepresented geographical areas to apply. The Chair noted the changes in the secretariat.

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.29/GRVA/2022/1
Informal documents GRVA-12-01 and GRVA-12-27/Rev.1

4. GRVA considered the provisional agenda prepared for this session (ECE/TRANS/WP.29/GRVA/2022/1). GRVA adopted it without modification, as reproduced in GRVA-12-27/Rev.1, a version that included the reference to all informal documents received until 24 January 2022. (All informal documents submitted are listed in Annex I of this report. Annex II provides the list of Informal Working Groups (IWG) reporting to GRVA.)

5. GRVA noted the efforts made by the secretariat to find time arrangements to accommodate as much as possible the different time zones from experts attending. GRVA also agreed on the running order for the session (GRVA-12-01).

III. Highlights of the November 2021 session of WP.29 (agenda item 2)

Documentation: (ECE/TRANS/WP.29/1161)
Informal document GRVA-12-02

6. The Secretary presented GRVA-12-02 with some highlights of the WP.29 session in November 2021, having relevance for GRVA. He referred to the session report ECE/TRANS/WP.29/1161 for more details. GRVA noted the report from the secretariat.

IV. Artificial Intelligence in vehicles (agenda item 3)

Documentation: Informal documents GRVA-12-03, GRVA-12-06, GRVA-12-26 and GRVA-12-32

7. GRVA recalled the purpose of GRVA-11-03, a document from the GRVA leadership gathering all positions expressed so far by GRVA regarding Artificial Intelligence (AI) in the context of vehicle regulations.

8. The experts from France, Germany, and CLEPA/OICA submitted comments to the document (GRVA-12-03, GRVA-12-06 and GRVA-12-32). The experts from Canada and the United States of America also provided comments. GRVA advised to inform the Administrative Committee for the Coordination of Work (AC.2) on the current activities.

9. The expert from FIA fully supported the developments on AI at GRVA. He committed to contribute to the discussions, stating the importance of transparency regarding the technology for the sake of clarity for consumers.

10. GRVA agreed to organize a technical workshop, possibly in March 2022 (before the May 2022 session of GRVA), primarily focusing on common definitions for AI relevant for GRVA activities, and, if possible i.e. if time is available, exploring more in detail the potential role of vehicle regulation(s) and guidance document(s) with regard to AI.

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 documents GRVA-12-22 and GRVA-12-23

11. GRVA received a progress report (GRVA-12-22) from the expert of the United States of America, Co-Chair of the IWG on Functional Requirements for Automated and Autonomous Vehicles (FRAV), on the activities of the group. He introduced GRVA-12-23, highlighting the significant progress made on the draft proposal for guidelines and recommendations concerning Safety Requirements for Automated Driving Systems (ADS). He detailed the four sections of the document, the purpose, the terms and definitions, the guidelines to describe an ADS and recommendations. He explained that these draft guidelines were providing a safety driven framework.

12. GRVA went through GRVA-12-23. The Co-Chair of the IWG explained that Table 1 in the document provided recommendations that would be expended with a third column, that would include criteria against which the safety recommendations in the column one and the detailed provisions in column two could be assessed.

13. The expert from ETSC highlighted the importance of the coordination between the IWGs on FRAV and on Validation Method for Automated Driving (VMAD) and advised that the coordination meetings involving the leadership of the two groups should systematically review the user requirements as the latter were not fitting the current VMAD structure.

14. The experts from OICA and CLEPA welcomed the progress made by the IWG on FRAV.
15. GRVA requested the secretariat to submit GRVA-12-23 to WP.29 at its March 2022 session.

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

Documentation: ECE/TRANS/WP.29/GRVA/2022/2
Informal documents GRVA-12-12 and GRVA-12-30

16. GRVA received the status report (GRVA-12-30) from the expert from the Netherlands, Co-Chair of the IWG on VMAD, highlighting the work done on guidelines for the New Assessment/Test Method (NATM), as required by the Framework Document on Automated Vehicles. He described the open issues addressed by the subgroups and the collaboration activities with the IWG on FRAV.
17. He explained that the group convened three times since September 2021 and that the four subgroups met 20 times, in total. He detailed that the second iteration of the master document on NATM grew from 46 pages to 103 pages.
18. GRVA acknowledged that the master document prepared by the IWG on VMAD contained information about the pillars of the new assessment test method and went beyond guidelines. GRVA noted that the IWG on VMAD would develop a second document containing guidelines as there was the need to separate recommendations from the descriptive information.
19. The expert from OICA highlighted the importance of the work done by the group and its subgroups. He inquired whether the task of the subgroup 2 was about pass/fail criteria or about information sharing.
20. The expert from China mentioned the different pillars that composed the NATM. He asked how to apply them and how to ensure that the combination of the four pillars was sufficient. The expert from Canada, Co-Chair of the IWG, referred to Chapter 4 titled “Applying a Multi-pillar Approach to the NATM”.
21. The expert from Sweden inquired whether some activities, in parallel to the development of the VMAD guidelines, would be performed under the framework of the 1958 Agreement and if yes, when. The Chair responded that no Contracting Party to the 1958 Agreement had requested to start regulatory activity at this stage.
22. The expert from the Netherlands highlighted the open question regarding the inclusion (or exclusion) of provisions for the user manual concerning misleading names or names given to systems that imply a different performance of the system than the real one.
23. The expert from ETSC referred to his comment under item 4(a) and pointed at Annex IV, item 1.
24. GRVA requested the secretariat to submit GRVA-12-12 to WP.29 for information (in March 2022) and for consideration and vote at its June 2022 session, subject to final review by GRVA at its May 2022 session.

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

Documentation: Informal documents GRVA-12-33

25. GRVA received a progress report (GRVA-12-33) by the expert from Japan, Co-Chair of the IWG on Event Data Recorder (EDR) / Data Storage System for Automated Driving (DSSAD) on the current activities of the group.

26. GRVA discussed that the comparison table between EDR and DSSAD was no longer up-to-date and needed to be entirely revisited to clarify that EDR was focusing on crash analysis and that DSSAD was for ADS.

D. UN Regulation on Automated Lane Keeping Systems

Documentation: ECE/TRANS/WP.29/GRVA/2022/3
ECE/TRANS/WP.29/GRVA/2022/4
Informal documents GRVA-12-20 and Rev.1, GRVA-12-34,
GRVA-12-35, GRVA-12-36, GRVA-12-51/Rev.1 and GRVA-12-52

27. GRVA received a progress report from the expert from United Kingdom of Great Britain and Northern Ireland, Co-Chair of the Special Interest Group on UN Regulation No. 157 (GRVA-12-36) on the activities of the group. He introduced ECE/TRANS/WP.29/GRVA/2022/3 and ECE/TRANS/WP.29/GRVA/2022/4, aimed at proposing provisions addressing lane change manoeuvres and increasing the maximum design speed of ALKS, up to 130 km/h.

28. The expert from Germany introduced GRVA-12-20. She announced that some discussions were still taking place and that a revised document would be produced in the course of the week. The expert from EC recalled that the document had been discussed by the IWG on EDR/DSSAD and considered by GRSG, as it had been initially drafted as an amendment to UN Regulation No. 160 (EDR). He explained that following discussions, it was advised that the provisions should be inserted in UN Regulation No. 157, and that therefore the document had then been submitted to the Special Interest Group on UN Regulation No. 157. The expert from CLEPA confirmed that the industry did not have issues with the proposal but that a few last-minute clarifying amendments to the document were necessary. The expert from AAPC mentioned that he would circulate the proposal among his members, with the aim to provide feedback, if possible, during the week.

29. Later in the week, GRVA considered a revised document (GRVA-12-20/Rev.1). The expert from the United States of America, Co-Chair of the IWG on EDR/DSSAD, requested the possibility for her group to review the revised proposal, at a meeting taking place one working day after GRVA. Accordingly, GRVA agreed to keep the text contained in the document in square brackets.

30. GRVA reviewed GRVA-12-51 and GRVA-12-51/Rev.1 prepared during the week and requested the secretariat to submit GRVA-12-52 (based on formal documents ECE/TRANS/WP.29/GRVA/2022/3, ECE/TRANS/WP.29/GRVA/2022/4 and informal documents GRVA-12-34, GRVA-12-35, GRVA-12-20/Rev.1 (including square brackets) to WP.29 and AC.1 for consideration and vote at their June 2022 sessions, subject to final review by GRVA at its May 2022 session.

E. Other business

Documentation: Informal document GRVA-12-04

31. The expert from ISO provided a copy of one of their standards, reproduced in GRVA-12-04, at the request of some GRVA delegates. GRVA thanked ISO for this effort in keeping GRVA up to date, regarding their activities.

32. GRVA noted the information provided by the secretariat concerning the recommendation of AC.2 and the corresponding decision of WP.29 concerning external signalling for automated vehicles.

33. The expert from OICA informed GRVA that the Global Forum on Road Traffic Safety (WP.1) was discussing the pros and cons of specific light signalling for automated driving.

34. The Chair proposed to contact the Chair of the Working Party on Lighting and Light-Signalling (GRE) before the next AC.2 session in March 2022.

VI. Connected vehicles (agenda item 5)

A. Cyber security and data protection

Documentation: ECE/TRANS/WP.29/GRVA/2022/5
Informal documents GRVA-12-05, GRVA-12-21 and GRVA-12-37

35. The expert from Japan, co-organizer (together with the secretariat) of workshops on the implementation of UN Regulation No. 155, reported on recent activities (GRVA-12-21). GRVA thanked Japan and the secretariat for these efforts to build capacity and support uniform application of the regulation.

36. The expert from China highlighted that his country, even though not Contracting Party to the 1958 Agreement, begun, following the entry into force of UN Regulation No. 155, the preparation of national standards on cyber security for whole vehicles, with references to concepts in UN Regulation No. 155. He reported however that they faced issues related to standard tests and verifications. He detailed that paragraph 5.3. contributed to the uniform application of the regulation as it required the Contracting Parties to upload their assessment method in the Database for the Exchange of Type Approval documentation (DETA). He explained that parties not signatory to UN Regulation No. 155 would face the same issue when drafting their own cyber security standards with reference to UN Regulation No. 155. He wondered how Contracting Parties to the 1998 Agreement could achieve consistency in the application and implementation of the requirements and inquired if an access to DETA could be organized for the Contracting Parties of the 1998 Agreement so that they can access to the methodology posted there according to the provisions under para. 5.3 of the regulations. The expert from the Russian Federation supported the expert from China and pointed at the IWG on DETA to check how to provide access. GRVA agreed to address this matter and to resume its consideration at its next session.

37. The expert from CEMA presented GRVA-12-05, recalling the CEMA position regarding UN Regulations Nos. 155 and 156. He also recalled the request of CEMA to remove the Categories S, R and T from the scope of UN Regulation No. 156. He claimed that the vehicles of these categories, even though similar, were different from other vehicle categories (such as trucks). He acknowledged that over-the-air software updates were performed by vehicle types of these three categories. He pointed at the case of all-terrain vehicles, that were either belonging to the Category L (and as such not being subject to UN Regulation No. 156), or to the Category T (and be subject to UN Regulation No. 156).

38. The expert from Germany mentioned that a market analysis exercise showed that vehicles of Categories S, R and T included automated driving systems on field; such equipment was mature and well developed. She noted that such vehicles were also driven on public roads and that, even though their maximum speed was lower than the one of other vehicles, they were characterized by their high torque and were therefore hard to stop. These vehicles, as such, were therefore posing a risk in traffic that could be addressed by that regulation. She supported the inclusion of these vehicle categories in the scope of UN Regulation No. 155 and to keep them in UN Regulation No. 156. She added that lead-time could be envisaged, and she suggested a transition period of five years.

39. The expert from Italy suggested to remove these three vehicle categories from the scope of UN Regulation No. 156, until appropriate work is conducted.

40. The expert from the European Commission confirmed that the European Union did not mandate the application of UN Regulation No. 156 and that this topic was not considered as a priority for the region. He recalled that the Category L was included in the scope of UN Regulation No. 155, but limited to automated vehicles.

41. The expert from United Kingdom of Great Britain and Northern Ireland recalled that vehicles of Category L were exempted because they were unlikely to be connected vehicles. He stressed that many new vehicles of the Category T were connected and automated. He therefore supported that they were subject to cyber security requirements. He added that he struggled to understand why Category T vehicle manufacturers would struggle to implement

UN Regulation No. 156, as its provisions were primarily about software management. He assumed that reputable firms would already comply with such requirements.

42. The experts from Luxembourg and the Netherlands supported the experts from Germany and from the United Kingdom of Great Britain and Northern Ireland.

43. The expert from Denmark stated that he was not in the position to express any position on this matter as such matters would be relevant for another ministry in his country.

44. The expert from Spain agreed with the expert from Italy.

45. GRVA agreed to keep the three Categories S, R and T in the scope of UN Regulation No. 156 and to resume consideration of this item at the next session in order to develop a road map for their future inclusion in UN Regulation No. 155.

46. The expert from CLEPA presented GRVA-12-37 with corrections proposals to references to the standard ISO/SAE 21434. GRVA adopted the document GRVA-12-37 and requested the secretariat to submit it to WP.29 for consideration and vote at its June 2022 session.

47. The expert from Japan, Co-Chair of the IWG on Cyber Security and OTA issues, presented ECE/TRANS/WP.29/GRVA/2022/5, a proposal prepared by the group for recommendations on uniform provisions concerning cyber security and software updates, suitable for the Contracting Parties to the 1998 and/or 1958 Agreements. The experts from China, Italy and the United States of America supported the document. GRVA adopted it and requested the secretariat to submit it to WP.29 for consideration and vote at its June 2022 session.

B. Software updates and over-the-air issues

Documentation: (Informal document GRVA-12-05)

48. This item was addressed together with item 5(a).

C. Data and vehicle communications

Documentation: Informal documents GRVA-12-11/Rev.1, GRVA-12-14/Rev.1 and GRVA-12-40

49. The expert from CITA presented GRVA-12-14/Rev.1, giving an overview of the content in GRVA-12-11/Rev.1 and GRVA-12-40, regarding remote access to in-vehicle data. He recalled various models and technical solutions presented to WP.29 and GRVA to enable such access, e.g. to third parties and for sovereign use cases such as Periodic Technical Inspection or Market Surveillance. He proposed a role for GRVA in that field, i.e. to prepare the design of vehicles so as to enable data collection, transmission and guaranty authenticity (no repudiation) of the data. He called on for the establishment of an ad hoc group that would perform a full assessment, possibly using the assessment template proposed in GRVA-12-40.

50. The expert from FIA explained that he was more in favour to have this matter addressed in Brussels by the European Commission. He explained that GRVA should not negatively influence the access to in-vehicle data because of UN Regulations Nos. 155 and 156.

51. The expert from ITU explained that all models listed in the document would create an unnecessary cyber security risk. He claimed that the role of regulations was to create the conditions under which the vehicle manufacturers should make data available as per the terms of that regulation.

52. The expert from OICA felt that this topic was relevant to national or regional levels and was not sure if the United Nations had a role to play in this. He explained, even though OICA was not fundamentally against a new group, the current workload associated with GRVA activities was already high and therefore explaining the defensive position expressed.

53. The expert from AAPC echoed the positions expressed by ITU and OICA.
54. The expert from CLEPA stated that there was a value for GRVA to host this conversation.
55. The expert from the United States of America supported the position expressed by AAPC. He felt that it was premature to create a group on this matter.
56. The expert from Germany proposed to distinguish two aspects of this matter: (a) the technical aspects related to data transmission and cyber security and (b) the national and regional laws on data privacy.
57. The expert from United Kingdom of Great Britain and Northern Ireland agreed that there were challenges related to national laws, but he also supported a harmonized approach on how to share data, as data would not only benefit the vehicle owner but also the whole transport system.
58. The expert from Austria supported a discussion at GRVA on this matter.
59. The expert from CITA welcomed the comments received and stated the importance of cyber security, of national and regional laws but also the need for harmonization activities at GRVA level to avoid the situation where potential national laws would lead to different technical solutions that would impair the aim of data sharing.
60. GRVA agreed to further discuss the role of GRVA with regards to remote access to in-vehicle data at its May 2022 session and consider approaching AC.2 and WP.29 in June 2022 for further guidance regarding future proceedings concerning that matter.

D. Other business

61. No document was submitted under this agenda item.

VII. Advanced Driver Assistance Systems and UN Regulation No. 79 (agenda item 6)

A. Advanced Driver Assistance Systems

Documentation: Informal documents GRVA-12-17 and GRVA-12-18

62. The expert from the Russian Federation, Co-Chair of the Task Force on Advanced Driver Assistant Systems (ADAS), introduced GRVA-12-18 with a status report of the activities performed by the group. He emphasised his intention to speed up the process and suggested the creation of a drafting group. He mentioned the reduced participation in recent meetings, with a usual attendance of 80 experts dropping recently to 50 experts and called for more engagement. He reported on the two workstreams of the group, on UN Regulation No. 79 and on a new regulation on a subset of ADAS that the group calls Driver Control Assistance Systems (DCAS). He detailed items from the current group's discussions.
63. The expert from the Russian Federation also reported on activities of the group related to the task assigned by GRVA on the clarification of boundaries between ADAS and ADS. He presented GRVA-12-18. He referred to the literature e.g. the SAE International standard J3016. He mentioned that the key element distinguishing ADAS from ADS levels was the presence of a driver when the system is operating. He clarified that, according to this, DCAS would be an ADAS. He reported on the group's consideration of ADAS systems claiming an increased performance and that were sometimes referred to as Level 2+. He explained that the group identified the challenges related to some ADAS that would perform similarly to ADS. He added, the task force discussed that the driver should not be the mitigator of risks associated with the operation of an automated system. He continued that taking routines and workload away from the driver would not automatically provide more safety and that systems performing like ADS should be subject to ADS regulations. He concluded by detailing a list of items that the group could focus on to develop regulatory provisions.

64. The outcome of the work done by the task force on boundaries between ADAS and ADS received comments from the European Commission, France, FIA and OICA. GRVA agreed to resume consideration of this item.

B. UN Regulation No. 79 (Steering equipment)

Documentation: ECE/TRANS/WP.29/GRVA/2022/6
(ECE/TRANS/WP.29/GRVA/2021/9,
ECE/TRANS/WP.29/GRVA/2021/10,
ECE/TRANS/WP.29/GRVA/2021/11),
Informal documents GRVA-12-19 and GRVA-12-43

65. The expert from OICA recalled the purpose of ECE/TRANS/WP.29/GRVA/2021/11 (aimed to include truck-trailer data transmission in the Automatically Commanded Steering Functions (ACSF) of Category C provisions in UN Regulation No. 79) and introduced a revised proposal (GRVA-12-19). GRVA adopted GRVA-12-19 and requested the secretariat to edit it and to submit it, as draft supplement for the 03 and 04 series of amendments to UN Regulation No. 79, to WP.29 and AC.1 for consideration and vote at their June 2022 sessions.

66. The expert from OICA introduced ECE/TRANS/WP.29/GRVA/2022/6, introducing clarifications and correcting omissions. GRVA adopted it as amended by GRVA-12-43 (reproduced in Annex III) and requested the secretariat to submit it, as draft supplement for the 03 and 04 series of amendments to UN Regulation No. 79, to WP.29 and AC.1 for consideration and vote at their June 2022 sessions.

C. Other business

67. No document was submitted under this agenda item.

VIII. Advanced Emergency Braking Systems (agenda item 7)

Documentation: ECE/TRANS/WP.29/GRVA/2022/7
Informal documents GRVA-12-08, GRVA-12-09/Rev.1,
GRVA-12-10, GRVA-12-29, GRVA-12-38, GRVA-12-39,
GRVA-12-41, GRVA-12-42/Rev.1, GRVA-12-44, GRVA-12-45,
GRVA-12-46, GRVA-12-47, GRVA-12-49 and GRVA-12-50/Rev.1

68. GRVA received a report (GRVA-12-09/Rev.1) from the expert from Germany, Co-Chair of the IWG on AEBS for heavy duty vehicles, on the progress made by the group to upgrade UN Regulation No. 131. He presented ECE/TRANS/WP.29/GRVA/2022/7 (amended by GRVA-12-08), proposing to adjust the performance requirements in UN Regulation No. 131 to the current state of the art.

69. The expert from the Czech Republic highlighted that the upgraded provisions would be a significant contribution to road safety. He denied that the provisions corresponded to the current state of art technology. He explained that this assessment would only be true for a limited number of truck manufacturers and added that smaller truck manufacturers would be impacted as they were not working closely enough with the big systems suppliers for such systems.

70. The expert from ETSC mentioned the potential positive impact on road safety that this amendment, if adopted, could bring.

71. GRVA worked during the week on different options to introduce the requirements related to the vehicle to vehicle and the vehicle to pedestrian use cases and the corresponding transitional provisions as well as the AEBS deactivation conditions, on the basis of positions expressed by Australia, Germany, Japan, CLEPA, ETSC and OICA (GRVA-12-38, GRVA-12-39, GRVA-12-41, GRVA-12-42/Rev.1, GRVA-12-44, GRVA-12-46 and GRVA-12-47). GRVA also discussed provisions restricting the ability to switch off AEBS.

72. GRVA requested the secretariat to submit ECE/TRANS/WP.29/GRVA/2022/7 as amended by GRVA-12-49 (reproduced in GRVA-12-50/Rev.1), to WP.29 and AC.1 for consideration and vote at their June 2022 sessions.

73. The expert from the United Kingdom of Great Britain and Northern Ireland introduced GRVA-12-29, highlighting an amendment proposal adopted at the last session that inadvertently removed the 1 per cent slope criterion for the test track. GRVA supported the proposal and introduced further clarifications addressing omissions, as reproduced in GRVA-12-45.

74. GRVA adopted the document GRVA-12-45 and requested the secretariat to submit it, as amendment to ECE/TRANS/WP.29/2022/18, ECE/TRANS/WP.29/2022/19 and ECE/TRANS/WP.29/2022/20, to WP.29 and AC.1 for consideration and vote at their March 2022 sessions.

75. The expert from Germany, Co-Chair of the IWG on AEBS for HDV proposed revised terms of references for the group, with two new items 7 and 8. GRVA agreed to keep GRVA-12-10 on the agenda until its May 2022 session.

IX. UN Regulations Nos. 13, 13-H, 139 and 140 and UN GTR No. 8 (agenda item 8)

A. Electronic Stability Control

Documentation: ECE/TRANS/WP.29/GRVA/2022/12
(ECE/TRANS/WP.29/GRVA/2020/34
ECE/TRANS/WP.29/2020/99)
Informal documents GRVA-12-07 and GRVA-12-13

76. GRVA received an oral report from the expert from the Republic of Korea regarding the development of an amendment proposal to UN Global Technical Regulation (GTR) No. 8 (GRVA-12-13).

77. GRVA noted that following discussions, ECE/TRANS/WP.29/GRVA/2022/12 and ECE/TRANS/WP.29/GRVA/2020/34 were withdrawn by the experts from Canada and the Republic of Korea, respectively.

78. The expert from France reported on recent crashes involving concrete mixer trucks, such vehicles being currently exempted from the electronic stability requirements. He presented GRVA-12-07, proposing to remove the exemption for concrete mixers trucks.

79. GRVA agreed to resume consideration of the French proposal and requested the secretariat to distribute GRVA-12-07 with an official symbol at the next GRVA session in May 2022.

B. Electromechanical brakes

Documentation: ECE/TRANS/WP.29/GRVA/2022/8

80. GRVA noted the oral report of the expert from CLEPA concerning ongoing discussions regarding electromechanical brakes (ECE/TRANS/WP.29/GRVA/2022/8) and agreed to consider a revised document at its May 2022 session.

C. Clarifications

Documentation: ECE/TRANS/WP.29/GRVA/2022/9,
ECE/TRANS/WP.29/GRVA/2022/10,
ECE/TRANS/WP.29/GRVA/2022/11,
Informal documents GRVA-12-24, GRVA-12-25 and GRVA-12-48

81. The expert from CLEPA introduced ECE/TRANS/WP.29/GRVA/2022/9, with an amendment proposal to UN Regulation No. 13, aimed at resolving problems with installation of stronger spring brake actuators in trailers to realize higher deceleration in the case of emergency braking caused by a cut of the supply line between towing vehicle and trailer.

82. GRVA adopted ECE/TRANS/WP.29/GRVA/2022/9 and requested the secretariat to submit it as draft supplement to the 11 and 12 series of amendments to UN Regulation No. 13 to WP.29 and AC.1 for consideration and vote at their June 2022 sessions.

83. The expert from OICA presented GRVA-12-35, recalling the purpose of ECE/TRANS/WP.29/GRVA/2022/10, aimed at clarifying paragraph 5.2.22.2. in UN Regulation No. 13-H, which dealt with deceleration thresholds generating braking light signal in the case of regenerative braking and/or automatically commanded braking. GRVA adopted ECE/TRANS/WP.29/GRVA/2022/10 as amended by GRVA-12-24 (reproduced in Annex IV) and requested the secretariat to submit it as draft supplement to UN Regulation No. 13-H to WP.29 and AC.1 for consideration and vote at their June 2022 sessions.

84. The expert from OICA presented GRVA-12-48, proposing to allow that the required warning actuation may be delayed until the parking brake was in a stable state. The proposal received comments from France, Germany, United Kingdom of Great Britain and Northern Ireland and Russian Federation. GRVA agreed that the expert from OICA, in consultation with interested Contracting Parties, would submit a revised proposal on the basis of ECE/TRANS/WP.29/GRVA/2022/11, at its May 2022 session.

X. Motorcycle braking (agenda item 9)

A. UN Global Technical Regulation No. 3

Documentation: Informal document GRVA-12-15

85. The expert from Italy informed GRVA that he had submitted to the WP.29 secretariat in December 2021 a request for authorization to amend UN GTR No. 3, for consideration at the March 2022 session of AC.3. He detailed the technical matters to be addressed to harmonize UN Regulation No. 78 and UN GTR No. 3. He clarified that GRVA would be invited to consider introducing provisions for the activation of the stop lamp under regenerative braking and updating the references to ASTM standards to enable the use of the new ASTM standard reference test tyre F2493 for the measurement of the Peak Braking Coefficient (PBC). GRVA encouraged the expert from Italy to further discuss this item at the next AC.3 session.

86. GRVA agreed to keep GRVA-12-15 on the agenda as a reference document until its next GRVA session in May 2022.

B. UN Regulation No. 78

87. No document was submitted under this agenda item.

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

Documentation: ECE/TRANS/WP.29/GRVA/2021/29
Informal document GRVA-12-16

88. The expert from Italy recalled the purpose of ECE/TRANS/WP.29/GRVA/2021/29 and the questions received at the previous session. He presented GRVA-12-16, including amendment to the initial proposal.

89. The expert from the United Kingdom of Great Britain and Northern Ireland thanked Italy for addressing their questions and supported the document.

90. GRVA requested the secretariat to submit the document, as amended by GRVA-12-16 (reproduced in Annex V), as a supplement to the 02 series of amendments to UN Regulation No. 90, to WP.29 and AC.1 for consideration and vote at their June 2022 sessions.

XII. Exchange of views on guidelines and relevant national activities (agenda item 11)

Documentation: Informal document GRVA-12-31

91. The expert from Germany provided information on the first approval issued according to UN Regulation No. 157 (GRVA-12-31). He provided details on the time and workload needed to perform the full assessment as required by the regulation. He answered to questions raised by the experts from China and the Netherlands.

XIII. Revision 3 of the 1958 Agreement (agenda item 12)

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

Documentation: Informal document GRVA-12-28

92. GRVA reviewed GRVA-12-28, containing a list of UN Regulations prepared by the secretariat in consultation with the experts from OICA, for which the use of Unique Identifier should be prevented.

93. GRVA agreed to keep GRVA-12-28 on the agenda until its next session in May 2022.

B. International Whole Vehicle Type Approval

94. No document was submitted under this agenda item.

XIV. Other business (agenda item 13)

A. Review of a proposal from the IWG on Periodic Technical Inspection

Documentation: (ECE/TRANS/WP.29/2021/148)

95. The expert from the Russian Federation, Co-Chair of the IWG on PTI, recalled the previous discussion of GRVA regarding the draft framework document on whole life compliance (ECE/TRANS/WP.29/2021/148). The expert from CITA supported the document. GRVA did not provide further input and noted that experts could share views at the IWG on PTI meeting, as needed.

B. Arrangement of meetings

96. The Secretary recalled the ambition of GRVA to organize meetings outside of Geneva.

97. GRVA noted the remaining difficulties related to COVID-19 to organize in person sessions outside of Geneva in 2022.

98. GRVA agreed to investigate possibilities for 2023.

C. Any other business

99. GRVA noted the information provided by the secretariat concerning the authorization by WP.29 to respond positively to WP.1 invitation. GRVA asked the secretariat to add an item on the agenda for the next session of AC.2 on the joint event with WP.1 on automated driving.

100. The expert from OICA suggested GRVA to initiate early discussions on its programme of work for 2023. He highlighted that, apart from a few exceptions, the framework document only provided clarity on the items to be delivered in 2022. He asked which follow-up activities for GRVA would be defined, once the IWGs on FRAV and VMAD would have completed their activities until November 2022. GRVA agreed to start discussions regarding its 2023 programme of work at its next session in May 2022.

101. The Secretary mentioned that the brochure based on GRVA-11-26, presented in September 2021, was published after having taken into account all comments received.

102. The Secretary informed GRVA on his activities related to the organization of a series of three webinars under the IWG on Intelligent Transport Systems. He also informed GRVA on his contribution to the organization of a side event during the Inland Transport Committee session in February 2022, on the occasion of its seventy-fifth anniversary. He also highlighted that the 2022 session of the UNECE /ITU Future Networked Symposium would take place from 22-25 March 2022.

103. The Secretary informed GRVA that he would prepare a list of decisions for adoption via silence procedure.

D. Tributes

104. GRVA learned that Ms. T. Kirschner (OICA) and Mr. H. Hesse (OICA) would no longer attend GRVA sessions. GRVA acknowledged the great contributions of Ms. Kirschner during the last few years at GRVA and wished her success in her carrier. GRVA recalled the participation of Mr. Hesse as member of the German delegation in former sessions, noted his contributions as OICA delegate and wished him a happy retirement.

Annex I

[English only]

List of informal documents (GRVA-12-...) considered during the session

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
1	(Chair) Running order of the twelfth GRVA session	C
2	GRVA-12-02 - (Secretariat) Highlights of the November 2021 session of WP.29	C
3	(Germany) Input on AI (based on GRVA-11-03)	C
4	(ISO) ISO/DIS 34502	C
5	(CEMA) Position paper on UN Regulations Nos. 155 and 156	C
6	(France) Comments on GRVA-11-03	C
7	(France) Proposal for amendments to UN Regulation No. 13 (Braking)	B
8	(IWG on AEBS for HDV) Proposal for the 02 series of amendments to UN Regulation No. 131 (AEBS for heavy vehicles)	C
9	(IWG on AEBS for HDV) Status report	C
10	(IWG on AEBS for HDV) Proposal for revised terms of reference	D
11	(CITA) Position paper - Access to in-vehicle data	D
12	(VMAD) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2022/2	A
13	(Korea) Proposal for amendments to UN GTR No. 8 (Electronic Stability Control)	C
14	(CITA) Presentation on access to in-vehicle data (introducing GRVA-12-11)	D
15	(Italy) Proposal for Amendment 4 to Global Technical Regulation No. 3 (Motorcycle braking)	D
16	(Italy) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2021/29	A
17	(TF ADAS) Clarification of the boundaries between ADAS and ADS	C
18	(TF ADAS) Report of the TF on ADAS to the 12th GRVA session	C
19	(TF ADAS) Amendment proposal to ECE/TRANS/WP.29/2021/11	A
20	(Germany, EC) Proposal for amendments to UN Regulation No. 157	C
21	(Japan, sec) Report of the workshop on the implementation of UN Regulation No. 155	C
22	(FRAV) FRAV status report to the 12th GRVA session	C
23	(FRAV) Proposal for Guidelines and Recommendations concerning Safety Requirements for Automated Driving Systems	D
24	(CLEPA/OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2022/10	A
25	(OICA/CLEPA) Stop lamp illumination (UN Regulations Nos. 13-H and 78)	C
26	(Secretariat) Consolidation of the comments on GRVA-11-03 provided by France and Germany	C
27	(Secretariat) Updated and consolidated agenda for the 12th GRVA session (incl. informal documents received until 21 January 2022 COB)	C
28	(Secretariat) The use of UI in UN Regulations under the purview of GRVA	C
29	(UK) Proposal for amendments to UN Regulation No. 152 (WP.29/2022/18, /19 and /20)	A
30	(VMAD) Status report of the IWG on VMAD	C
31	(Germany) First type approval for UN Regulation No. 157 (ALKS)	C
32	(CLEPA/OICA) Comments on GRVA-11-03	C
33	(DSSAD/EDR) IWG on EDR/DSSAD status report	C
34	(SIG R157) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2022/3	C

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
35	(SIG R157) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2022/3 and /4	C
36	(SIG R157) Progress report from the SIG on UN Regulation No. 157 (ALKS)	C
37	(CLEPA) Proposal for amendments to ECE/TRANS/WP.29/2021/59 (Interpretation document for UN Regulation No. 155 (CS and CSMS))	A
38	(CLEPA/OICA) Proposal for transitional provisions for the 02 series of amendments to UN Regulation No. 131	C
39	(ETSC) ETSC proposal on transitional provisions for the 02 series of amendments to UN Regulation No. 131	C
40	(CITA) Assessment spreadsheet	D
41	(Germany) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2022/7	C
42	(Germany) Proposal for amendments to the 02 series of amendments to UN Regulation No. 131	C
43	(Secretariat) Adopted amendments to ECE/TRANS/WP.29/GRVA/2022/6	A
44	(Germany) Presentation of the Short-term advantages and disadvantages of splitting the proposed 02 series to UN Regulation No. 131	C
45	(Secretariat) Adopted amendments to GRVA-12-29	A
46	(Japan) Proposal for amendments to GRVA-12-41 (reissued for technical reason)	C
47	(Australia) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2022/7	C
48	(OICA) Elements supporting ECE/TRANS/WP.29/GRVA/2022/11	C
49	(Secretariat) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2022/7 (based on GRVA-12-08 and GRVA-12-42/Rev.1)	C
50/ Rev.1	(Secretariat) Consolidated proposal for the 02 series of amendments to UN Regulation No. 131	A
51/ Rev.1	(OICA) Consolidated proposal for the 01 series of amendments to UN Regulation No. 157	B
52	(Secretariat) Proposal for the 01 series of amendments to UN Regulation No. 157 (after final review by GRVA)	A

Notes:

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

- A Adopted;
- B Distribute with an official symbol at the next session;
- C Consideration completed;
- D Resume consideration at the next session.

Annex II

List of Informal Working Groups reporting to GRVA (as of January 2022)

<i>Informal Working Group</i>	<i>Chair/Co-Chairs</i>	<i>Country</i>	<i>Mandate until</i>
Functional Requirements for Automated and Autonomous Vehicles (FRAV)	Ms. C. Chen ¹ Mr. R. Damm ¹ Mr. E. Wondimneh ¹	China Germany USA	July 2022
Validation Method for Automated Driving (VMAD)	Mr. I. Sow ¹ Mr. T. Onoda ¹ Mr. P. Striekwold ¹	Canada Japan Netherlands	July 2022
Cyber Security and Over-The-Air software updates (CS/OTA)	Mr. T. Niikuni ¹ Mr. D. Handley ¹ Ms. M. Versailles ¹	Japan UK USA	November 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	June 2024
Advanced Emergency Braking Systems (AEBS) for M ₁ and N ₁	Mr. A. Lagrange ¹ Mr. T. Hirose ¹	EC Japan	February 2022
Advanced Emergency Braking Systems (AEBS) for heavy vehicles	Mr. P. Seiniger ¹ Mr. T. Hirose ¹	Germany Japan	February 2022

¹ IWG Co-Chairs

Annex III

Adopted amendments to ECE/TRANS/WP.29/GRVA/2022/6

Adopted on the basis of GRVA-12-43 (see para. 66)

I. Proposal for a Supplement to the 03 series of amendments to UN Regulation No. 79

Paragraph 5.1.6.1.1., amend to read:

“5.1.6.1.1. Every CSF intervention shall immediately be indicated to the driver by an optical warning signal which is displayed for at least 1 s or as long as the intervention exists, whichever is longer.

When a flashing mode is used, a lighting phase shall be visible at the end of the intervention or later.

In the case of a CSF intervention which is controlled by an Electronic Stability Control (ESC) or a Vehicle Stability Function as specified in the relevant UN Regulation (i.e. UN Regulations Nos. 13, 13-H or 140), the ESC flashing tell-tale indicating the interventions of ESC may be used, as long as the intervention exists, as an alternative to the optical warning signal specified above.”

Paragraph 5.3.3.1., amend to read:

“5.3.3.1. The system shall be designed such that the vehicle cannot be driven ~~indefinitively~~ **indefinitely** at speeds above 10 km/h where there is any fault which requires operation of the warning signal referred to in paragraph 5.4.2.1.1.”

Annex 8, paragraph 3.5.4.1., amend to read:

“3.5.4.1. The test vehicle shall be driven in a lane of a straight test track, which has at least two lanes in the same direction of travel, with road markings on each side of the lanes.

The vehicle speed shall be: $V_{\text{min}} + 10\text{km/h}$.

The ACSF of Category C shall be activated (standby mode) and, unless the system is already enabled according to paragraph 5.6.4.8.3., another vehicle shall approach from the rear in order to enable the system as specified in paragraph 5.6.4.8.3. above.

The approaching vehicle shall then pass the vehicle under test entirely.

A Lane Change Procedure shall then be initiated by the driver.

The test shall be repeated for each of the following conditions, which shall occur before the lane change manoeuvre has started:

- (a) The system is overridden by the driver;
- (b) The system is switched off by the driver;
- (c) The vehicle speed is reduced to: $V_{\text{min}} - 10\text{ km/h}$;
- (d) The driver has removed his hands from the steering control and the hands-off warning has been initiated;
- (e) The direction indicator lamps are manually deactivated by the driver;
- (f) The lane change manoeuvre has not commenced within 5.0 seconds following the initiation of the lane change procedure. (e.g. another vehicle is driving in the adjacent lane in a critical situation as described

in paragraph 5.6.4.7.) or 7.0 seconds if initiated by a second deliberate action.

- (g) The second deliberate action for an appropriate system is performed later than 5.0 seconds after the initiation of the lane change procedure."

II. Proposal for a Supplement to the 04 series of amendments to UN Regulation No. 79

Paragraph 2.3.4.18. (former), renumber as paragraph 2.4.18. (content unchanged), to read:

"~~2.3.4.18.~~ "Specified maximum RCM operating range (S_{RCMmax})" means the maximum distance between the nearest point of the motor vehicle and the remote-control device up to which RCM is designed to operate."

Paragraph 2.4.18. (former), re-number as paragraph 2.4.19.

Paragraph 5.1.6.1.1., amend to read:

"5.1.6.1.1. Every CSF intervention shall immediately be indicated to the driver by an optical warning signal which is displayed for at least 1 s or as long as the intervention exists, whichever is longer.

When a flashing mode is used, a lighting phase shall be visible at the end of the intervention or later.

In the case of a CSF intervention which is controlled by an Electronic Stability Control (ESC) or a Vehicle Stability Function as specified in the relevant UN Regulation (i.e. UN Regulations Nos. 13, 13-H or 140), the ESC flashing tell-tale indicating the interventions of ESC may be used, as long as the intervention exists, as an alternative to the optical warning signal specified above."

Paragraph 5.3.3.1., amend to read:

"5.3.3.1. The system shall be designed such that the vehicle cannot be driven ~~indefinitively~~ indefinitely at speeds above 10 km/h where there is any fault which requires operation of the warning signal referred to in paragraph 5.4.2.1.1."

Annex 8, paragraph 3.5.4.1., amend to read:

"3.5.4.1. The test vehicle shall be driven in a lane of a straight test track, which has at least two lanes in the same direction of travel, with road markings on each side of the lanes.

The vehicle speed shall be: $V_{min} + 10\text{km/h}$.

The ACSF of Category C shall be activated (standby mode) and, unless the system is already enabled according to paragraph 5.6.4.8.3., another vehicle shall approach from the rear in order to enable the system as specified in paragraph 5.6.4.8.3. above.

The approaching vehicle shall then pass the vehicle under test entirely.

A Lane Change Procedure shall then be initiated by the driver.

The test shall be repeated for each of the following conditions, which shall occur before the lane change manoeuvre has started:

- (a) The system is overridden by the driver;
- (b) The system is switched off by the driver;
- (c) The vehicle speed is reduced to: $V_{min} - 10\text{ km/h}$;

- (d) The driver has removed his hands from the steering control and the hands-off warning has been initiated;
- (e) The direction indicator lamps are manually deactivated by the driver;
- (f) The lane change manoeuvre has not commenced within 5.0 seconds following the initiation of the lane change procedure. (e.g. another vehicle is driving in the adjacent lane in a critical situation as described in paragraph 5.6.4.7.) **or 7.0 seconds if initiated by a second deliberate action.**
- (g) **The second deliberate action for an appropriate system is performed later than 5.0 seconds after the initiation of the lane change procedure."**

Annex IV

Adopted amendments to ECE/TRANS/WP.29/GRVA/2022/10

Adopted on the basis of GRVA-12-24 (see para. 83)

Paragraph 5.2.22.2. (and subparagraphs), amend to read:

"5.2.22.2. Requirements for vehicles equipped with automatically commanded braking and/or regenerative braking which produce a retarding force (e.g. upon release of the accelerator control).⁶

Deceleration by automatically commanded braking and/or regenerative braking

$\leq 1.3 \text{ m/s}^2$	$> 1.3 \text{ m/s}^2$
May generate the signal	Shall generate the signal

⁶ At the time of type approval, compliance with this requirement shall be confirmed by the vehicle manufacturer.

Once generated the signal shall be kept as long as a deceleration demand persists. However, the signal may be suppressed at standstill **or when the deceleration demand falls below *1.3 m/s²* or that value which generated the signal, *whichever is lower*.**

An appropriate measure (e.g. switch-off-hysteresis, averaging, time delay) shall be implemented in order to avoid fast changes of the signal resulting in flickering of the stop lamps."

Annex V

Adopted amendments to ECE/TRANS/WP.29/GRVA/2021/29

Adopted on the basis of GRVA-12-16 (see para. 90)

Annex 7a, paragraph 1, amend to read:

“1. Grouping criteria

The grouping is made according to the following approach:

- (a) According to the individual friction material of the brake lining;
- (b) Depending on the area of the friction material area of the brake lining assembly operated by the piston/pistons of only one side of the brake calliper **or, in case of drum brakes, of only one brake shoe.**

Friction material area means all the area enclosed within the perimeter of the brake lining (see the red cross-hatched area, Figure 1, **Figure 2**), thus excluding the presence of any grooves and/or chamfers:

Figure 1

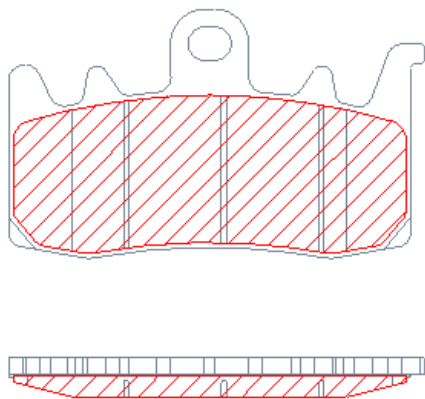
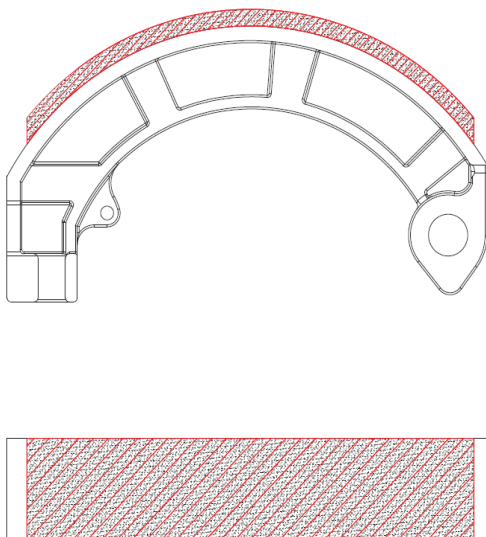


Figure 2



3 area groups are foreseen, as in Table 1 (for brake pads) and in Table 2 (for brake shoes):

.....

Table 2

<i>Group</i>	<i>Brake lining area [cm²]</i>
A	≤ 21
B	$> 21 \leq 54$
C	> 54

“
