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

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I. Attendance and opening

1. The Working Party on Automated/Autonomous and Connected Vehicles (GRVA) met from 1 to 5 February 2021 online, 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, Ireland, Israel, Italy, Japan, Luxembourg, Malaysia, the Netherlands, Norway, Portugal, Republic of Korea, Romania, Russian Federation, Slovakia, South Africa, Spain, Sweden, Switzerland, Ukraine, the United Kingdom of Great Britain and Northern Ireland (UK), the United States of America (USA) and Vietnam. 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), 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 Road transport Union (IRU), Institute for Security and Safety, Brandenburg University of Applied Sciences (ISS), International Organization for Standardization (ISO), International Telecommunication Union (ITU) International Organization of Motor Vehicle Manufacturers (OICA), Recreational Vehicle Industry Association (RVIA), SAE International, Securing America's Future Energy (SAFE) and World Bicycle Industry Association (WBIA).
2. The Chair opened the meeting by mentioning the new Coronavirus 2019 outbreak context, the reason why the meeting was conducted online.
3. The secretariat invited the delegations that were submitting documents to ensure that any picture and material used in presentations and documents were obtained in accordance with copyright regulations.

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.29/GRVA/2021/1
Informal documents GRVA-09-01/Rev.1, GRVA-09-02 and
GRVA-09-24/Rev.1

4. GRVA considered the provisional agenda prepared for this session (ECE/TRANS/WP.29/GRVA/2021/1) and decided to delete the proposed item 6(c). GRVA adopted the agenda as reproduced in GRVA-09-24/Rev.1, that included the informal documents received before the session started. (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 also agreed on the running order for the session (GRVA-09-01/Rev.1) and noted the technical information contained in GRVA-09-02 for this online session.

III. Highlights of the November 2020 session of WP.29 (agenda item 2)

Documentation: (ECE/TRANS/WP.29/1155)

6. GRVA recalled the information provided by the secretariat at the December 2020 session of GRVA and the reference made to the session report ECE/TRANS/WP.29/1155.

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

Documentation: Informal documents GRVA-09-03 and GRVA-09-21

7. The expert from France introduced GRVA-09-03, describing the strategy of France for the development of an automated roads mobility (2020-2021). He highlighted the challenges to be tackled such as remote supervision, connectivity, safety validation and the intention to keep the regulatory framework in alignment with European and International developments.

8. The expert from IEA presented GRVA-09-21. He presented the activities of the group Human Factors in International Regulations for Automated Driving Systems (HF-IRADS). He explained that they differentiated three types of relevant remote actions: remote assistance, remote management and remote control of an automated driving system (ADS). He concluded that: (a) remote control and operation was complex and that it should not be assumed that remote handling constitutes a viable backup for problems encountered by vehicles under the control of an ADS, (b) thorough investigation of different use cases was needed and a safety case should be prepared for each specific application of remote support and control, (c) there was a lack of evidence that remote vehicle operation on public roads could be performed safely and (d) the proper design of the work environment for remote control and operation was vital.

9. GRVA agreed with the proposal of the expert from the Russian Federation that this matter should be considered by the IWG on Functional Requirements for Automated Vehicles (FRAV).

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-09-10, GRVA-09-27 and GRVA-09-28

10. The expert from the United States of America, Co-Chair of the Informal Working Group (IWG) on Functional Requirements for Automated and Autonomous Vehicles (FRAV), presented GRVA-09-27 with a status report of the activities of the group and a summary of the white paper prepared by the group (GRVA-09-28). He highlighted that the white paper contained definitions and addressed the development of a structure for ADS safety requirements. He added that the Group's work followed a top-down approach, based on five main aspects of ADS performance. He explained that, from these five categories, the group derived 40 inter-related safety topics. He concluded his presentation by stating that the group was collecting data supporting the elaboration of safety requirements and ADS description requirements and was coordinating activities together with the IWG on Validation Methods for Automated Driving (VMAD).

11. The expert from OICA presented GRVA-09-10, a document tabled by CLEPA and OICA, on certification of automated vehicles. He stated that the ideas proposed in the presentation were suitable for both the 1958 and 1998 Agreements, type approval and self-certification and were not in contradiction with the activities under the IWGs on FRAV and VMAD. He explained that the ADS certification could be based on two tools: (a) the Automated Driving Management System dealing with the capability of a manufacturer to develop, validate, verify and maintain ADS in the field by evaluating its processes regarding risk assessment and treatment, validation and verification, and field monitoring and response; (b) the ADS Validation dealing with scenario based ADS validation approach with flexible testing configurations using virtual, physical and real-world test methods as well as safety assessments to cover the safety aspects of complex electronic ADS. GRVA agreed to further discuss the ideas proposed in this document.

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

Documentation: Informal documents GRVA-09-07 and GRVA-09-29

12. The expert from Canada, Co-Chair of the IWG on VMAD, presented the progress report of the group (GRVA-09-29) and introduced the proposal for a Master Document on the New Assessment / Test Method (NATM) in GRVA-09-07. He explained that the Master Document provided a clear overview of the NATM and its constituent pillars, outlining the scope and general overview of the scenario catalogue and each of the pillars (simulation/virtual testing, test track, and real-world testing, audit/assessment and in-use monitoring). He added that it described the overall process of the NATM and e.g. how the components of the NATM (for example the scenarios catalogue and pillars) operate together, producing an efficient, comprehensive, and cohesive process. He informed GRVA that this version of the Master Document provided a high-level framework for the NATM reflecting the current status of work of VMAD and that it would still be under further development within the scope of the IWG.

13. The expert from the Netherland, Co-Chair of the IWG on VMAD, explained that the group was aiming to take the use case "motorway" in a first step as an example to verify fitness of the NATM for the safety validation of ADS.

14. GRVA endorsed the progress report of the group and agreed to present the Master Document, as informal document, to WP.29 at its March 2021 session.

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

15. 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 achievements of the group on DSSAD for UN Regulation No. 157 and on EDR in the year 2020. She noted that activities on DSSAD were behind schedule as it focused on EDR since March 2020. She mentioned that the group discussed technical considerations on sensors necessary to collect data for ADS of Levels 3 to 5 and storage systems as well as considerations on privacy and security. She announced that the group would organize a next meeting to exchange views on the possible work program for 2021-2022.

16. The expert from the European Commission congratulated the group for its achievements especially related to EDR. He proposed that the next steps for the groups would include considerations related to EDR for Automated Driving, a priority for the European Union as their General Safety Regulation included this item in it.

17. The expert from Germany proposed that the group focused on interactions between DSSAD and EDR.

18. GRVA invited the group to deal with DSSAD issues with priority, noting that the challenge due to the fact that the group was reporting both to GRSG and GRVA.

D. UN Regulation on Automated Lane Keeping Systems

Documentation: (ECE/TRANS/WP.29/GRVA/2020/32
ECE/TRANS/WP.29/GRVA/2020/33)
ECE/TRANS/WP.29/GRVA/2021/2
ECE/TRANS/WP.29/GRVA/2021/3
ECE/TRANS/WP.29/GRVA/2021/4
ECE/TRANS/WP.29/GRVA/2021/17
Informal documents GRVA-09-09, GRVA-09-19, GRVA-09-22,
GRVA-09-33, GRVA-09-34 and GRVA-09-40

19. The expert from the United Kingdom of Great Britain and Northern Ireland introduced the report of the Special Interest Group on UN Regulation No. 157, provided in

GRVA-09-22. He recalled the matters that the group was willing to address. He announced the ambition of the group to meet on a monthly basis and to complete its activities until September 2021. He also mentioned the workshop organized by the industry that discussed emergency vehicles and vehicle categories. GRVA agreed to keep ECE/TRANS/WP.29/GRVA/2020/32 and ECE/TRANS/WP.29/GRVA/2020/33 as well as ECE/TRANS/WP.29/GRVA/2021/2 and ECE/TRANS/WP.29/GRVA/2021/4 on the agenda for reference.

20. The expert from USA explained that in his opinion, there were two distinct activities. On one hand, activities related to scope extension to additional vehicle categories, speed increase and lane change for emergency situations. On the other hand, so called convenience lane changes that would fall in the remit of FRAV activities.

21. The expert from Japan supported the ongoing activities. He mentioned that the timeline was ambitious and would have to be adjusted as necessary to allow sufficient time for technical discussions and satisfactory coordination with the IWGs on FRAV and VMAD.

22. The expert from France fully supported the ongoing activities. He also noted that the timeline was ambitious but felt that it was necessary. He mentioned that the group did not discuss some important technical details such as speeds, accelerations, decelerations and the tyre performance. He explained that tyres were replaced in the lifetime of the vehicle and that the performance of tyre could vary, also in case of winter tyres installation, which has to be addressed as a safety risk. He wrote in the messaging system of the meeting that the IWG on FRAV could address this issue.

23. The expert from OICA introduced their proposal to extend the scope of UN Regulation No. 157 in ECE/TRANS/WP.29/GRVA/2021/3 (amended by GRVA-09-19) and invited the GRVA expert to provide views and input on the questions in GRVA-09-34.

23bis. The expert from Korea noted that the time gap values were governed by traffic rules and that UN Regulation No. 157 took the reference deceleration values from UN Regulation No. 13- H. He suggested that the corresponding values in UN Regulation No. 13 should be used for heavy vehicles.

24. GRVA thanked the secretariat for having provided an interactive schedule of meetings that helps coordination in the organization of informal working group meetings.

25. The expert from France introduced ECE/TRANS/WP.29/GRVA/2021/17, which aimed at clarifying the requirements in case an alternative to the Software Identification Number (SWIN) is used. The expert from OICA provided comments on the proposal (GRVA-09-09). The expert from UK supported the proposal. He inquired about the reason why long transitional provisions would be needed. The expert from Germany commented that the French proposal was logic and consistent. He stated that Germany did not insist on the possibility of an alternative to SWIN. The expert from AVERE supported the French proposal. GRVA continued discussions in the course of the week.

26. Following consultations, GRVA adopted ECE/TRANS/WP.29/GRVA/2021/17 as amended by Annex III (GRVA-09-40) and requested the secretariat to submit it as draft supplement to UN Regulation No. 157 to WP.29 and the Administrative Committee of the 1958 Agreement (AC.1) for consideration and vote at their June 2021 sessions.

27. The expert from UK introduced GRVA-09-33, providing information on the discussions in his country regarding the implementation of UN Regulation No. 157, also related to traffic rules. The expert from ITU mentioned the complexity of traffic rules and the existing nuances regarding traffic rules something within the same country. He mentioned that he learned about activities of the Group of Expert reporting to WP.1 on the development of a database for traffic signs and asked if it was accessible.

28. GRVA noted the local nuances in traffic rules that had to be properly taken into account and inquired whether the Type Approval of a foreign Country would have enough knowledge about nuances in other countries. The expert from the Netherlands suggested that this discussion could be held at the level of the Executive Task Force of WP.1/WP.29. GRVA agreed that this point would require coordination among the GRVA IWGs.

VI. Connected vehicles (agenda item 5)

A. Cyber security and data protection

Documentation: ECE/TRANS/WP.29/GRVA/2021/5
Informal documents GRVA-09-08 and GRVA-09-11

29. The expert from Japan, Co-Chair of the IWG on Cyber Security and Over-the-Air issues (CS/OTA) reported on the activities of the group (GRVA-09-11). He proposed that the group would focus with high priority on the development of a guidance document for the purpose of the 1998 Agreement in order to develop a harmonized approach for both the 1958 and 1998 Agreement. GRVA supported the proposal.

30. The expert from the Russian Federation introduced ECE/TRANS/WP.29/GRVA/2021/5. He recalled the discussion at the seventh session of GRVA on para. 5.3.5 in UN Regulation No. 155. The expert from OICA provided comments (GRVA-09-08). The expert from Germany advised to not paraphrase Schedule 6 or add requirements that would differ from those in the 1958 Agreement. The expert from Japan expressed concerns related to the implementation of the provisions in the 1958 Agreement and therefore proposed to keep the text unchanged. The expert from France supported the position expressed by the expert from Japan. The experts from Italy and UK expressed similar positions. The expert from the Russian Federation explained that the case was not related to disputes as in Schedule 6. He proposed to withdraw his proposal and to discuss it at a meeting of the IWG on International Whole Vehicle Type Approval.

31. The expert from the European Commission suggested that the IWG considered developing provisions for agricultural vehicles and for L-category vehicles. The Co-Chair of the group explained that the group only focused on Categories M and N, that the group would need some opinion from IMMA and that more discussions would be needed to include them in UN Regulation No. 155. GRVA discussed whether this reflection would take place during this session or at the next session.

32. The expert from IMMA explained that IMMA supported to focus on the cyber security of L-category vehicles, that IMMA was continuing examining the matter and that therefore the discussion was premature since the level of automation of L-category vehicles was not the same as for cars.

33. GRVA agreed to resume discussion on this matter at the next session of GRVA.

B. Software updates and Over-the-Air issues

Documentation: ECE/TRANS/WP.29/GRVA/2021/6
ECE/TRANS/WP.29/GRVA/2021/14

34. GRVA dealt with ECE/TRANS/WP.29/GRVA/2021/6 when discussing the parallel proposal ECE/TRANS/WP.29/GRVA/2021/17 under the agenda item 5(a). Following discussions and consultations, GRVA agreed to resume consideration of ECE/TRANS/WP.29/GRVA/2021/6 or to consider a revised proposal at its next session.

35. The expert from CEMA introduced ECE/TRANS/WP.29/GRVA/2021/14 proposing to correct UN Regulation No. 156 by deleting the agricultural vehicle categories from the scope of UN Regulation No. 156.

36. The experts from Italy, Spain and Czech Republic agreed with the proposal.

37. The expert from the European Commission proposed to postpone this discussion.

38. The expert from UK invited GRVA to reflect on the safety and environmental matters of relevance in the present case. He stated that this was a fundamental question. The expert from the Netherlands and France agreed with this statement.

39. The expert from CEMA explained that CEMA would join these activities as soon as possible and that CEMA was requesting a temporary exclusion from the scope. He mentioned

that CEMA member were already regulated by the Machinery Regulation in the European Union and that they preferred one regulation only.

40. The expert from the European Commission stated that time was needed to further discuss. He stated that this should be one item for discussion at the IWG on CS/OTA.

41. GRVA did not adopt ECE/TRANS/WP.29/GRVA/2021/14 and invited the experts from CEMA to participate in the meetings of the IWG on CS/OTA. GRVA invited the IWG on CS/OTA to add an agenda item on its agenda to discuss this matter.

C. Legal considerations regarding technical provisions over the vehicle lifetime

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

42. GRVA noted that WP.29-180-18 was provided for reference.

D. Other business

Documentation: Informal documents GRVA-09-12, GRVA-09-13 and GRVA-09-14

43. The expert from ISO introduced GRVA-09-12, with a description of the Extended Vehicle concepts and the corresponding ISO standards. GRVA noted that ISO provided copies of ISO 20077-1 and ISO 20077-2 developed by the ISO Technical Committee (TC) 22 (GRVA-09-13 and GRVA-09-14).

44. The expert from CITA mentioned the existence of alternative models to the one presented by the expert from ISO (Extended Vehicle as in GRVA-09-12) and the Open Telematic Platform (OTP), mentioned in WP.29-178-10, also based on the ISO standards, developed by the ISO TC 204. He volunteered to present a comparison and an alternative, if other CITA members would also agree.

45. The expert from CEN (also member of ISO) stated that he did not underestimate the work done on Extended Vehicles but asked whether there was a unique Extended Vehicle or one per manufacturer and, in that case, if they would be interoperable. He explained that this concept implied that the data is generated by the vehicle. He stressed that in fact, the vehicle was only one actor out of more than twenty in an Intelligent Transport System, that the vehicle was not the controller of that system, that the regulator and road operator determined the static road regulations and controlled the dynamic flow and management of traffic. He added that, the vehicle did not control its operating environment, that the vehicle could only achieve its journey within the control of the regulator and the dynamic control of the road operator. He wondered what involvement the extended vehicle had with the great intelligent transport system paradigm and its standards and controls. He asked if the extended vehicle functions within that paradigm or if it believed that the vehicle was the controlling element.

46. The expert from ISO explained that the Extended Vehicle concepts of the vehicle manufacturers were interoperable and that with this concept, the process of data exchange was initiated with a request issued by any stakeholder. He added that data would be made available to any kind of stakeholder independently from the service itself, in a safe and secure way and that the manufacturer would only check that data can be provided in a safe and secure way. He concluded that therefore the Extended Vehicle was not opposing to any type of system paradigm shift. GRVA agreed that further detailed exchange would be helpful, but GRVA could not further discuss this proposal, due to time constraints.

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

A. Automatically Commanded Steering Function

Documentation: ECE/TRANS/WP.29/GRVA/2021/7
 ECE/TRANS/WP.29/GRVA/2021/8
 ECE/TRANS/WP.29/GRVA/2021/9
 ECE/TRANS/WP.29/GRVA/2021/10
 ECE/TRANS/WP.29/GRVA/2021/11
 ECE/TRANS/WP.29/GRVA/2021/12
 Informal documents GRVA-09-15, GRVA-09-16, GRVA-09-30 and
 GRVA-09-37

47. The expert from AVERE introduced ECE/TRANS/WP.29/GRVA/2021/7, a revised amendment proposal to the Automatically Commanded Steering Function (ACSF) of Category B1 provisions in UN Regulation No. 79 (maximum lateral acceleration $a_{y_{max}}$). The expert from the Netherlands opposed to the proposal, as it could generate *mode confusion* and *overreliance* on the market. The experts from France, the European Commission and UK supported the proposal. The expert from Germany suggested that the proposal is further discussed by a task force. GRVA agreed to keep the proposal on hold.

48. The expert from OICA introduced ECE/TRANS/WP.29/GRVA/2021/8 as amended by GRVA-09-37 on continued support of ACSF of Category B1 when the boundary conditions are exceeded. The proposal received comments from the experts from France and UK. GRVA agreed to resume consideration of this proposal at its next session.

49. The expert from OICA introduced ECE/TRANS/WP.29/GRVA/2021/9 as amended by GRVA-09-30. She announced that the amendment to the tolerance in square bracket was withdrawn. GRVA adopted the proposal (without the amendment to the tolerance in para. 5.6.4.7.) and requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their June 2021 sessions.

50. The expert from AVERE introduced ECE/TRANS/WP.29/GRVA/2021/10 proposing revised amendments to the ACSF of Category C provisions (time range during which the lane change manoeuvre is initiated) in UN Regulation No. 79. The experts from UK, European Commissions and Japan supported the proposal. The expert from Korea supported the proposal and indicated that a longer time than the one proposed would be preferable. The expert from the Netherlands opposed to the proposal for the same reasons as the one expressed in September 2020. The expert from Norway also opposed to the proposal. He wondered about the possible benefits of stretching the limits. The expert from France supported the proposal but pointed out inconsistencies in the drawing compared to the provisions in the text. The expert from OICA supported the proposal. The expert from AVERE provided answers to the statements and questions raised. The Chair asked if all doubts were cleared. The experts from the Netherlands, Sweden, Germany and Finland still had reservations to the proposal but agreed that it could be further discussed at a task force meeting.

51. The expert from OICA introduced ECE/TRANS/WP.29/GRVA/2021/11, an amendment proposal to the ACSF of Category C provisions, with the main aim to include a truck-trailer data transmission. He proposed that the industry would invite for a specific workshop to discuss this until June 2021. He announced that OICA was targeting the adoption of an amendment proposal on this matter at the September 2021 session of GRVA.

52. The expert from the European Commission introduced GRVA-09-15, proposing revised Terms of Reference for the Task Force (TF) on Advanced Driver Assistance Systems (ADAS). He explained that the TF would work on amendments to UN Regulation No. 79 or a new Regulation as needed, that it would consider the use cases expected in the next years, that it would envisage a generic approach as well as Human Machine Interface (HMI), mode confusion, overreliance and misuse related concerns, in full coordination with the IWGs on FRAV and VMAD. He mentioned that the outcome of this work would be delivered in three

phases, in September 2021 (finalization of pending proposals), in 2022 (second phase) and in 2023 (work under the 1998 Agreement).

53. The expert from AAPC recalled that UN Regulation No. 79 was only dealing with Advanced Driver Assistance Steering Systems (ADASS).

54. The expert from Japan expressed support for the ToR and committed to contribute to the work. He agreed about the importance to address HMI and social acceptance aspects and to review technical data and accidentology data. He mentioned that the USA, Canada and China included other systems than those covered in UN Regulation No. 79 on their markets and stated that 1998 Contracting Parties should participate to that work and provide data.

55. The expert from AVERE provided comments and expressed support for these activities. He presented GRVA-09-16, providing a report of the preliminary meeting of the Task Force on ADAS that developed the revised Terms of Reference.

56. The expert from Sweden expressed a positive position about the document. He mentioned that the scope of the TF would be complex and that the timing proposed was unsure. He wondered if the task force could work without ToR.

57. The expert from UK supported that work. He mentioned that the ToR established a plan and that they could be revisited as needed.

58. The expert from China agreed to join the meetings of the TF.

59. The expert from the Netherlands highlighted the challenging timeline proposed.

60. The expert from Germany supported the proposal.

61. The expert from China mentioned their readiness to work on ADAS including items beyond ADASS.

62. The expert from OICA recalled the aim of this workstream, that was to address the limitations of UN Regulation No. 79 e.g. new functions not fitting in existing definitions in UN Regulation No. 79 or longitudinal requirements that would not really fit in a steering regulation. He supported, for this reason, that the task force would focus on ADASS.

63. The expert from the United States of America expressed reservations. He recalled that UN Regulation No. 79 was about steering; going beyond that scope would get the work of the task force close to the one of the IWG on FRAV. He mentioned that there might be areas where ADAS and ADS are well separated by clear lines but that others don't, such as HMI. He mentioned that if the group deliver a new UN Regulation by September 2021, then the group would be well ahead of the IWG on FRAV, so that it could prejudice the IWG's work. He also mentioned that anticipating work on a UN GTR derived from a UN Regulation did not make sense.

64. The expert from OICA stated that ADAS and ADS had different scopes and recalled that their respective scopes had been defined at WP.29 level in ECE/TRANS/WP.29/2018/2.

65. The expert from Canada expressed support to the position expressed by the United States of America. He requested that the session report reflected the concerns expressed in terms of organization, overlap and realistic timeframes.

66. GRVA took note of the reservations expressed, of the importance of coordination and adopted the proposal with the deletion of paragraph 2 in part C of the document, as reproduced in Annex IV to this report.

67. The expert from OICA introduced ECE/TRANS/WP.29/GRVA/2021/12 proposing an alternative HMI for remote control parking in UN Regulation No. 79.

68. The expert from UK noted that, under the current provisions, a remote served as interface and, that in the alternative HMI proposed, the human would serve as interface. He inquired about the safety mechanism in place to make sure that the driver knows how to stop controlling and moving the vehicle.

69. The expert from Germany proposed that the Task Force could review the proposal and the question raised. The experts from France and the Netherlands supported Germany.

70. GRVA invited the expert from OICA to liaise with France, Germany and the Netherlands, and also to discuss the proposal at the task force meetings.

B. Steering equipment

Documentation: ECE/TRANS/WP.29/GRVA/2021/13
Informal documents GRVA-08-06, GRVA-08-28, GRVA-09-35 and GRVA-09-43

71. The expert from OICA introduced ECE/TRANS/WP.29/GRVA/2021/13. He recalled that Risk Mitigation Functions related provisions would need to be adopted because safety systems that were type-approved in the past could no longer being able to receive a type approval under the 03 series of amendments to UN Regulation No. 79. He explained that the proposed lane change related provisions were still under discussion and could be deleted as an interim solution, if deemed necessary by GRVA.

72. The expert from Japan stated than Risk Mitigation Functions were important systems for the sake of safety, he added that Japan contributed to the proposal, that Japan supported it as an interim solution and that Japan would contribute to further activities, as necessary.

73. The expert from France expressed support for the working document. He stated that he would need more time to study the informal document amending it, as it had been recently submitted. He proposed to finalize the discussion at the next session.

74. The expert from Germany inquired whether systems already type-approved under the 02 series of amendment to UN Regulation No. 79 were including lane changing features.

75. The expert from OICA explained that existing systems could already perform a lane change. He recalled that the date B^{1***} of the transitional provisions for the 03 series was 1 September 2021 and that, therefore, the adoption should not be delayed.

76. The expert from CLEPA confirmed this information.

77. The expert from UK stated the benefits of such functions but also the lack of clarity on the HMI robustness.

78. The expert from Sweden stated that he had no clear position as he was still considering traffic safety impact of such systems.

79. The expert from Norway stated that he supported these emergency systems. He asked to OICA whether there would be risks associated to Risk Mitigation Function (RMF) that GRVA should know about.

80. The expert from OICA explained that zero risk did not exist but that OICA was not aware of any critical situation or crash induced by these systems: OICA was not aware of any police report giving a hint in that situation. He responded to the expert from UK that paragraph 6.1.6.3.2. would address the statement made on HMI.

81. The expert from Germany explained that systems without lane change were type approved as corrective steering function, which was not really intended like this. Therefore, she could support provisions for RMF without lane change. She stated that allowing systems with lane change was a precedent, a situation that wasn't clear. She wondered if this should be allowed for all vehicle categories, on all road types. She inquired about pedestrian safety implications. OICA responded that these elements would be clarified through the assessment imposed by Annex 6, on the fault and non-fault conditions. Following the consultations held during the week, the expert from OICA introduced GRVA-09-43, aimed at addressing the comments received.

82. Following the discussion and positions expressed by the experts from the European Commission, France, Germany, Japan, Netherlands, Norway, Russian Federation, Sweden, UK, GRVA concluded that removing such systems from the market was an issue.

*** As defined in the guidelines for transitional provisions in ECE/TRANS/WP.29/1044/Rev.2

83. GRVA agreed to forward the proposal in GRVA-09-43 as supplement to the 03 series of amendments to UN Regulation No. 79 for consideration and vote by WP.29 and AC.1, subject to reconfirmation by GRVA at its next session, in order to allow a potential solution to be developed until June 2021. GRVA noted the reservations expressed by some delegations due to the fact that the technical discussion was not completed and agreed that the document could be amended until June 2021.

C. Remote control manoeuvring

84. This provisional agenda item was deleted from the agenda.

D. Other business

Documentation: Informal documents GRVA-09-04 and GRVA-09-20

85. GRVA-09-04 and GRVA-09-20 were considered under agenda item 8(c). No new information was provided under this agenda item.

VIII. Advanced Emergency Braking Systems (agenda item 7)

Documentation: Informal documents GRVA-09-17, GRVA-09-18, GRVA-09-18/Rev.1, GRVA-09-26 GRVA-09-32 and GRVA-09-32/Rev.1

86. The expert from Japan, co-chair of the IWG on AEBS (for M₁ and N₁) presented a progress report to GRVA (GRVA-09 26). He explained their activities on virtual testing, on the performance of AEBS to detect big animals and the discussion on Peak Break Coefficient (PBC) reference in UN Regulation No. 152.

87. GRVA inquired whether virtual testing should be addressed by this IWG. The expert from OICA mentioned the importance of virtual testing for this matter. The expert from the European Commission, Co-Chair of the group, explained that he consulted the subgroup 2 of the IWG on VMAD, which answered that their activities were different as AEBS was not an ADS. He added that the mandate of the group was still running and that it had capacity to deal with this item. The expert from France supported these activities.

88. The expert from the European Commission asked the expert from Sweden if information would be available concerning the detection of big animals. The expert from Sweden explained that further thoughts were needed on this matter. GRVA agreed that this issue was not a high priority but that it should be further discussed.

89. The expert from OICA introduced GRVA-09-18 and mentioned GRVA-09-17 explaining an issue related to the PBC reference in UN Regulation No. 152. She explained that deceleration of nine m/s² were the basis for calculation of performance criteria and that therefore a PBC value of 0.9 was not sufficient. She mentioned a revised proposal contained in GRVA-09-18/Rev.1 to be discussed until the next session of GRVA.

90. The expert from Germany supported the proposed way forward. The expert from Canada raised a study reservation. The experts from Korea and the European Commission supported the OICA proposal.

91. GRVA agreed to resume consideration of this item at its next session.

92. The expert from Germany, Co-Chair of the IWG on AEBS for heavy vehicles reported on the outcome of the first meeting, a market review, an accidentology data review and a proposal for Terms of Reference, reproduced in GRVA-09-32. He explained that the document contained two options for consideration by GRVA.

93. The expert from Japan noted the very good progress already made by the group and expressed support for the proposal for Terms of Reference. He mentioned the importance of the detection of vulnerable road users as more than 50 per cent of the fatalities heavy duty

vehicles were pedestrian and bicycles. He acknowledged the technical challenge of the task. He did not express preference of any options.

94. Following discussion, also on the two options in the document, GRVA adopted the Terms of Reference reproduced in Annex V of this report (based on GRVA-09-32/Rev.1)

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/2020/34
(ECE/TRANS/WP.29/2020/99)
Informal document GRVA-09-36

95. The expert from Korea, technical sponsor to the amendment to UN GTR No. 8 (see ECE/TRANS/WP.29/2020/99), introduced GRVA-09-36 amending ECE/TRANS/WP.29/GRVA/2020/34, a revised proposal for amendment to UN GTR No. 8 aimed at accommodating new types of steering equipment, low gear systems, not being able to reach the 270 degree request in the sine with dwell test.

96. The expert from Canada expressed reservation with the revised proposal as it would still open the door to safety issues. He explained that the last paragraph of the amendment proposal should only belong to the test procedure and not to the requirement. He explained that this was up to the test facility or manufacturer to perform the test to reach the maximum operable steering angle without overshoot and not for the regulation to accommodate such overshooting risk with a tolerance.

97. GRVA requested the expert from Canada to work together with the expert from Korea so that progress could be achieved until the next session.

B. Electromechanical Brakes

Documentation: ECE/TRANS/WP.29/GRVA/2020/21
Informal documents GRVA-09-05 and GRVA-09-06

98. The expert from CLEPA presented GRVA-09-06, introducing ECE/TRANS/WP.29/GRVA/2020/21, as amended by GRVA-09-05, providing provisions for the type approval of trucks equipped with electromechanical brakes. He clarified that no trailer with electromechanical brakes was considered in the proposal. He explained the benefits of such system for hybrid electric and electric vehicles. He acknowledged that further work was needed to develop Periodic Technical Inspection and electric storage devices requirements.

99. GRVA agreed to review a revised proposal based on GRVA-09-05, as formal document, at its next session.

C. Clarifications

Documentation: ECE/TRANS/WP.29/GRVA/2021/16
Informal documents GRVA-09-04 and GRVA-09-20

100. The expert from Poland withdrew ECE/TRANS/WP.29/GRVA/2021/16.

101. The expert from Germany introduced GRVA-09-04 proposing amendments to the parking brake requirements, justified by the fact that Germany registers three fatalities per year involving trucks or buses and inadequate parking brake operation.

102. The expert from OICA responded (GRVA-09-20) to the proposal of the expert from Germany. OICA agreed that the proposal could help to increase safety. He provided comments on the implementation of the requirement modification as well as editorial comments.

103. The expert from UK supported the intention of the proposal. He mentioned possible editorial corrections to the proposal. He highlighted the importance of balanced requirements to avoid unnecessary user frustration.

104. The expert from Germany agreed with the comments provided and volunteered to resume consideration of this item at its next session.

X. Motorcycle braking (agenda item 9)

A. UN Global Technical Regulation No. 3

105. No discussion took place under this agenda item.

B. UN Regulation No. 78

Documentation: Informal document GRVA-09-25

106. The expert from IMMA introduced GRVA-09-25, recalling the adoption of stop lamp activation criteria at the last session of GRVA. He proposed that GRVA would harmonise stop lamp activation thresholds for regenerative braking in UN Regulation No. 78 with new provisions in UN Regulation No. 13-H. He announced the submission of a working document for the May or September 2021 session of GRVA.

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

Documentation: ECE/TRANS/WP.29/GRVA/2021/15
Informal document GRVA-09-41

107. The expert from CLEPA introduced ECE/TRANS/WP.29/GRVA/2021/15 as amended by GRVA-09-41. The expert from Germany explained that he could only support parts of the proposal and stressed the need for the type approval authority to be able to check the setup used for the Conformity of Production (CoP) tests. The expert from CLEPA explained that he could not agree with the position expressed by the expert from Germany.

108. The expert from Germany stated his readiness to further discuss this matter. The expert from France explained that he could support the text marked in red in the document. The expert from FEMFM supported this discussion. GRVA agreed to resume consideration of this item at its next session.

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

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

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

B. International Whole Vehicle Type Approval

110. 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)
Informal documents GRVA-08-13/Rev.1, GRVA-09-38/Rev.1 and
GRVA-09-39

111. GRVA reviewed GRVA-08-13/Rev.1, proposing GRVA priorities for 2021. Following consultations and discussion during the week, GRVA adopted the priorities for 2021 proposed in GRVA-09-39, with the addition of a category for UN Regulation No. 131 (AEBS for heavy vehicles) at the request of Germany, as reproduced in Annex VI to this report.

112. The expert from the European Commission introduced GRVA-09-38/Rev.1 aimed at unifying the activities on the definition of work priorities for GRVA and the activities related to the update of the Framework Document on Automated Vehicles to increase the level of details and to clarify the expectations from GRVA for the year 2021. GRVA proposed that this document be reviewed by the Administrative Committee for the Coordination of Work (AC.2).

B. Artificial Intelligence

Documentation: Informal documents GRVA-09-23 and GRVA-09-44

113. The expert from the Russian Federation introduced GRVA-09-23 suggesting definitions (taken from the International Standard Organization) for Artificial Intelligence (AI) with relevance for wheel vehicles, their subsystems and parts. He proposed to consider that AI is considered as a software i.e. a design feature of an automotive product and that therefore no design requirements should be developed. He mentioned the impossibility to verify the performance of AI systems. He also suggested that any risk mitigation may be part of the audit as defined in the NATM.

114. The expert from CLEPA explained that methods to validate the performance of AI agent were existing. He mentions methods such as blackbox testing, statistical approaches and therefore disputed the word "impossible" as GRVA could rely on methods developed by Institute of Electrical and Electronics Engineers (IEEE), ISO and International Electrotechnical Commission (IEC) for this purpose. He mentioned existing issues to be addressed at the regulatory level, such as the use of continuous learning features at "Vehicle Identification Number (VIN) level" (i.e. individual vehicle level, opposed to vehicle fleet level)

115. GRVA could not further discuss this proposal, due to time constraints, but agreed to prioritize this item at its May 2021 session.

116. The expert from Israel, Chief Operating Officer of Ride Vision, presented GRVA-09-44 complementing the information already provided at the September 2020 session about the potential benefits of a AI powered collision warning system that can be retrofitted to motorcycles.

C. Any other business

117. The Chair of GRVA noted the effort made during the last 12 months from the delegations in Asia and in the Americas, due to numerous meetings taking place at unfavourable times outside regular business hours. He informed that he consulted these delegations and that it would be a clear signal of global collaboration and a promotion of the WP.29 work if GRVA meetings would take place in other regions of the world, too. He invited GRVA to consider organizing sessions in Asia and in America in 2022. The expert from Canada expressed strong support for this idea.

118. The secretariat announced that the adoption of a list of decision would take place via a silence procedure, following the recommendations of the Executive Committee of UNECE. He explained that the next session of GRVA would be organized in May or June 2021 but that no information on the precise date and duration was available to date.

D. Framework document on automated/autonomous vehicles (FDAV)

Documentation: Informal documents GRVA-08-26/Rev.1, GRVA-09-31, GRVA-09-42 and GRVA-09-42/Rev.1

119. The Chair recalled the purpose of GRVA-08-26/Rev.1 and asked for comments. Following the consultations held during the week, he introduced GRVA-09-31, proposing amendments to the current version of the Framework Document for Automated Vehicles. The expert from the European Commission explained that he would welcome clarity on the nature of the deliveries: discussion papers, guidelines or regulatory text. GRVA exchanged views on the proposal. Consultations took place during the week and interested experts participating in these informal consultations produced GRVA-09-42 and then GRVA-09-42/Rev.1, which could not be fully reviewed by GRVA due to the lack of time.

120. The experts from USA noted that GRVA-09-42 and GRVA-09-42/Rev.1 were submitted by the expert from OICA. He explained that the online informal consultation meetings, which took place during that week and which lead to the drafting of GRVA-09-42 and Rev.1, included not only industry members but also representatives of Contracting Parties. He expressed support for these documents, as expert from USA and as Co-Chair of the IWG on FRAV.

Annex I

[English only]

List of informal documents (GRVA-09-...) considered during the session

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
1	(Chair) Running order	B
1-		B
Rev.1	(Chair) Revised running order	
2	(Secretariat) Virtual meeting participation guidelines and information	B
3	(France) The French strategy for development of automated roads mobility 2020-2022	B
4	(Germany) Proposal for amendments to UN Regulation No. 13 (Heavy vehicle braking)	B
5	(CLEPA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/21	B
6	(CLEPA) UN Regulation No. 13 and ElectroMechanical Brakes (EMB)	B
7	(VMAD) New assessment/test method for automated driving - Master Document (final draft)	A
8	(CLEPA/OICA) Comments to ECE/TRANS/WP.29/GRVA/2021/5	B
9	(CLEPA/OICA) Comments to ECE/TRANS/WP.29/GRVA/2021/06 (for R156) and ECE/TRANS/WP.29/GRVA/2021/17 (for R157)	B
10	(CLEPA/OICA) Certification of Automated Vehicles	B
11	(CS/OTA) Report of current activities of the IWG on CS/OTA	B
12	(ISO) Safe & Secure Connectivity - The Extended Vehicle Concept and Standards	B
13	(ISO) ISO 20077-2	B
14	(ISO) ISO 20077-1	B
15	(Russian Federation/EC) Revised proposal for establishing a new Task Force on Advanced Driver Assistance Systems (TF on ADAS)	B
16	(TF on ADAS) Draft Meeting Minutes of the Preliminary meeting of the [Task Force on Advanced Driver Assistance Systems]	B
17	(CLEPA/OICA) Proposal to amend the PBC reference for AEBS M1/N1	B
18	(CLEPA/OICA) Proposal for amendments to UN Regulation No. 152	B
19	(CLEPA/OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2021/3	B
20	(CLEPA/OICA) Comments and amendments to GRVA-09-04	B
21	(IEA) Human Factors Challenges of Remote Support and Control	B
22	(D, EC, UK) Special Interest Group on UN Regulation No. 157: Meeting notes	B
23	(Russian Federation) Artificial intelligence definition and specifics of its application for automated road vehicles	B
24	(Secretariat) Updated provisional agenda	B
24-		B
Rev.1	(Secretariat) Updated provisional agenda	
25	(IMMA) Proposal to harmonise stop lamp activation thresholds for regenerative braking in UN Regulation No. 78 with new provisions in UN Regulation No. 13-H	B
26	(AEBS) Report from the Informal Working Group on AEBS	B
27	(FRAV) Progress report	B
28	(FRAV) Progress report	B
29	(VMAD) Status report	B
30	(CLEPA/OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2021/9	B
31	(Chair/Vice Chairs) Proposal for amendments to the Annex in ECE/TRANS/WP.29/2019/34/Rev.2	B

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
32	([AEBS HDV]) Draft Terms of Reference (ToR) for an IWG on AEBS (HDV)	B
32-		B
Rev.1	(Secretariat) Revised proposal for Terms of Reference for the IWG on AEBS (HDVs)	
33	(UK) ALKS implementation	B
34	(CLEPA/OICA) Automated Lane Keeping Systems (ALKS) for Heavy Duty Vehicles (HDVs)	B
35	(CLEPA/OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2021/13	B
36	(Rep. of Korea) Proposal for amendment to UN GTR No. 8 (Electronic Stability Control)	B
37	(CLEPA/OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2021/8	B
38	(EC) Proposal for GRVA work programme for 2021-2022	B
38-		B
Rev.1	(EC) Proposal for GRVA work programme for 2021-2022	
39	(Secretariat) Draft GRVA priorities for 2021	B
40	(UK) Alternative proposal to GRVA-09-09	B
41	(CLEPA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/15	B
42	(CLEPA/OICA) Proposal for amendments to ECE/TRANS/WP.29/2019/34/Rev.2	B
42-		B
Rev.1	(OICA/CLEPA) Proposal for amendments to ECE/TRANS/WP.29/2019/34/Rev.2	
43	(CLEPA, OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2021/13	B
44	(Israel) Collision Aversion Technology - for every motorbike	B

Notes:

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

A Adopted, submitted to WP.29 for consideration at its March 2021 session;

B Consideration completed.

Annex II

List of Informal Working Groups reporting to GRVA (as of February 2021)

<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	March [2020] ²
Validation Method for Automated Driving (VMAD)	Mr. I. Sow ¹ Mr. T. Onoda ¹ Mr. P. Striekwold ¹	Canada Japan Netherlands	December [2020] ²
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	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	November [2020] ²
Advanced Emergency Braking Systems (AEBS) for M ₁ and N ₁	Mr. A. Lagrange ¹ Mr. T. Hirose ¹	EC Japan	March 2022
Advanced Emergency Braking Systems (AEBS) for heavy vehicles	Mr. P. Seiniger ¹ Mr. T. Hirose ¹	Germany Japan	March 2022

¹ IWG Co-Chairs

² The mandate dates are being reviewed by WP.29 in the review process of the Framework Document on Automated Vehicles

Annex III

Adopted amendments to ECE/TRANS/WP.29/GRVA/2021/17

Adopted on the basis of GRVA-09-40 (see para. 26)

Paragraph 9.3. to 9.3.3., amended to read:

- “9.3. Requirements for software identification
- 9.3.1. The vehicle manufacturer shall have a valid approval according to UN Regulation No. 156 (Software Update Regulation).
- 9.3.1.1. As specified in the Software Update Regulation, for the purpose of ensuring the software of the System can be identified, an R₁₅₇SWIN shall be used. The R₁₅₇SWIN may be held on the vehicle or, if R₁₅₇SWIN is not held on the vehicle, the manufacturer shall declare the software version(s) of the vehicle or single Electronic Control Units (ECUs) with the connection to the relevant type approvals to the Approval Authority.
- 9.3.2. The vehicle manufacturer shall provide the following information in the communication form of this Regulation:
- (a) The R₁₅₇SWIN;
- (b) How to read the R₁₅₇SWIN or software version(s) in case the R₁₅₇SWIN is not held on the vehicle.
- 9.3.3. The vehicle manufacturer may provide in the communication form of this Regulation a list of the relevant parameters that will allow the identification of those vehicles that can be updated with the software represented by the R₁₅₇SWIN. The information provided shall be declared by the vehicle manufacturer and may not be verified by an Approval Authority.
- 9.3.4. The vehicle manufacturer may obtain a new vehicle approval for the purpose of differentiating software versions intended to be used on vehicles already registered in the market from the software versions that are used on new vehicles. This may cover the situations where type approval regulations are updated, or hardware changes are made to vehicles in series production. In agreement with the testing agency, duplication of tests shall be avoided where possible.”

Annex IV

Adopted Terms of Reference and Rules of Procedure for the Task Force on Advanced Driver Assistance Systems (ADAS)

Adopted on the basis of GRVA-09-15 as amended (see para. 66)

Background

1. A number of amendment proposals to the ACSF provisions in UN Regulation No. 79 (Steering equipment) presented by various submitters at the previous GRVA sessions including several significant amendments to ACSF of Category B1 (Lane-keeping) and C (Lane change) provisions aimed at addressing innovation opportunities.
2. GRVA has been divided on these amendments for more than a year already with a lack of progress towards resolution. On the one hand, some Contracting Parties are willing to remove provisions that they consider to be design restrictions, as highlighted by the representatives of AVERE and OICA. Some other Contracting parties however highlighted the risks introduced by loosening the existing ACSF requirements and/or the initiation of new ACSF functionalities by pointing out the possibility that the driver would assume that the system is able to temporarily take over the driving task, leading among others to driver overreliance and mode confusion. They therefore call for sufficient evidence that such amendments will ensure traffic safety. (See the last slide of GRVA-05-49).
3. AC.2 at its 134th session held on 9 November 2020 discussed the possibility to take relevant provisions out of UN Regulation No. 79 and to develop a new UN Regulation on Advanced Driver Assistant Systems (ADAS). AC.2 invited GRVA to further discuss and seek consensus, especially taking into account: (i) Human Machine Interface²¹ (HMI) related provisions and (ii) relevant human factor issues such as e.g. driver overreliance, as a safety concern.
4. At the WP.29 182nd session, EC submitted the proposal (WP.29-182-17) to amend the WP.29 Programme of Work for 2021 (ECE/TRANS/WP.29/2020/1/Rev.2) to include a new item addressing the simplification of UN Regulation No. 79 and elaborating the new ADAS UN Regulation.
5. During the eighth session, GRVA agreed that the European Commission and the Russian Federation should invite GRVA participants to discuss and determine if a Task Force or other working body be formed to address any issues with UN Regulation No. 79 that need to be investigated and developed with regard to ADAS. If needed, GRVA will evaluate draft Terms of Reference for a proposed Task Force or other body on ADAS at its next session.
6. The industry is concerned with the lack of progress in addressing the issues of further development of ACSF provisions in UN Regulation No. 79 and has proposed two parallel work streams: (i) continue work to improve and adapt UN Regulation No.79, and (ii) consider the development of a new generic approach to the development of regulatory provisions in the form of a new UN Regulation to cover not only existing, but new driver assisting technologies to be introduced on the market in the next few years. Industry has consistently indicated a need to recognize the important role that ADAS continues to play in the near future in various operational environments (highway, interurban & urban).
7. The development of the new ADAS UN Regulation may affect the content of UN Regulation No. 79, possibly leading to the partial removal of the ADAS provisions of the Regulation.
8. Reference documents: WP.29-182-17, ECE/TRANS/WP.29/1155, GRVA-05-49, GRVA-07-23, FRAV-06-04, FRAV-06-05.

¹ To be interpreted as ‘Human Machine *Interaction*’ to indicate the interaction between the human and the system

Terms of Reference

9. The Task Force (TF) should focus on Advanced Driver Assistance Systems (ADAS) and shall address the simplification of UN Regulation No. 79 and if needed, develop a new ADAS UN Regulation with a focus on ADAS systems up to of level 2².

10. The scope of the new UN Regulation shall in principle aim to cover vehicles of Categories M, N and O. It is recognised that technical limitations may require vehicle category or system-specific requirements.

11. The TF on ADAS shall develop a definition of ADAS clarifying the difference of ADAS to automated driving or conventional technologies. The TF on ADAS will consider existing definitions outlined in legislation (e.g. UN Regulation No. 79), standards and informal documents.

12. The TF on ADAS shall address the following issues:

(a) Outline the use-cases that are expected to be available for the market now and in the next years.

(b) Consider the definition, classification and scope of functions of ADAS,

(c) Ensure that use-cases and functions are considered subject to a safety evaluation aimed at ensuring, maintaining and if possible improving traffic safety.

(d) Review and solve current issues on ADAS systems in Regulation No. 79 and other relevant regulations, in particular taking into consideration existing proposals for Automatically Commanded Steering Function (ACSF) of Category A (Remote Controlled Parking), Category B1 (lane keeping) and Category C (lane changes and Risk Mitigation Function).

(e) Consider and develop generic safety performance and assessment requirements for ADAS, as well as combinations of multiple ADAS, for which a manufacturer is applying for an approval.³ General principles to identify differences and help distinguish between assistance systems and automated driving functions may be considered as a basis to derive generic requirements. Based on the outlined use-cases and on the review of current issues in Regulation No. 79, consider and propose specific requirements that may be relevant for specific use-cases in addition to the generic approach.

(f) As for ADAS, the TF will pay special attention to the shared driving task between the driver and vehicle which puts specific demand on:

(i) HMI (e.g. harmonization, saliency, unambiguity, responsibilities);

(ii) Human Factor (HF) issues (e.g. out-of-loop phenomena, driver engagement and vigilance, confusion, calibration of trust, ergonomics, misuse and overreliance);

(iii) Information to the user (e.g. system functioning, capabilities and limitations)

13. Based on the findings from item 3, the TF on ADAS shall consider if the development of a new draft UN Regulation focusing on ADAS systems for vehicle longitudinal and lateral control and/or an amendment to UN Regulation No. 79 is appropriate, taking into account existing ADAS provisions from UN Regulation No. 79.

14. In developing its proposals, the TF on ADAS shall take into account existing data, research results, legislation and voluntary standards available.

15. TF ADAS shall take full account of developments and work in full cooperation with other informal working groups of GRVA, such as FRAV and VMAD.

² As defined in ECE/TRANS/WP.29/1140 on pages 3 up to 1

³ Similar approach to what is being developed by FRAV/VMAD for automated vehicles (from SAE level 3).

16. The regulatory text shall, to the fullest extent possible, be performance-based and technology-neutral. The technical specification will attempt to be developed in a neutral manner to the compliance assessment system: type approval and self-certification.

Rules of Procedure

17. The TF on ADAS shall report to GRVA and is open to all participants of WP.29.
18. Two Co-Chairs and a Secretary will manage the TF.
19. The working language of the TF will be English.
20. All documents and/or proposals must be submitted to the TF Secretary in a suitable digital format in advance of one week of the meeting. The group may refuse to discuss any item or proposal submitted later.
21. An agenda and related documents will be communicated to all TF members in advance of all scheduled meetings by the means of publication on the dedicated UNECE website.
22. Decisions will be reached by consensus. When consensus cannot be reached, the Co-Chairs shall present the different points of view to GRVA. The Co-Chairs may seek guidance from GRVA as appropriate.
23. The progress of TF will be reported routinely to GRVA – wherever possible as an informal document and presented by the Co-Chairs.

Deliverables and Timings

24. As a first phase of activities, the TF on ADAS shall deliver regulatory texts intended to:
 - (a) Finalize pending proposals to UN Regulation No. 79 taking into account existing proposals, for consideration and potential adoption by GRVA at the September 2021 session;
 - (b) In parallel, consider and develop a first proposal for generic safety performance and assessment requirements for ADAS in the form of a new UN Regulation and/or amendments to UN Regulation No. 79, which will be submitted for consideration by GRVA at the September 2021 session and at the latest in February 2022, and;
 - (c) Subject to GRVA agreement, finalize the new UN Regulation and/or amendments to UN Regulation No. 79 for review and possible adoption by GRVA at the February 2022 session or at the following session.

Annex V

Adopted Terms of Reference and Rules of Procedure for the IWG on Advanced Emergency Braking System for heavy vehicles

Adopted on the basis of GRVA-09-32/Rev.1 (see para. 94)

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 M1 and N1 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 M₂/N₂-vehicles and M₃/N₃-vehicles, and differentiated after accident collision partner (specifying car, Vulnerable Road Users (VRU), construction vehicles, others).
 - (b) Investigate the feasibility of a generic marker triggering AEBS reaction with the purpose to increase safety in road servicing areas and at railroad crossings.
 - (c) Define state of the art performance requirements, especially for collisions involving stationary vehicles and the relevant targets based on the results from the action item above.
 - (d) Review the values for the target speed reduction for M₂ and N₂ vehicles (as requested in Annex 3 of UN Regulation No. 131) before November 2021.
 - (e) Review AEBS on:
 - (i) Vehicle to Car (V2C);
 - (ii) Vehicle to Pedestrian (V2P);
 - (iii) Vehicle to Bicycle (V2B);
 - (iv) Others;For heavy duty vehicles, and taking into account the performance requirements as specified under item 2c.
 - (f) Contemplate and incorporate as relevant new concepts from UN Regulation No. 152 on AEBS for M₁ and N₁ vehicles (e.g. definition of requirements for a range of parameters).
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 technical requirements for AEBS for heavy duty vehicle according to paragraphs 2.(e).(i). to 2.(e).(iii) as a revision of UN Regulation No. 131 with the necessary adjustments and administrative text (including the transitional provisions attached to the introduction of the different series of amendments) at the GRVA session of February 2022. This target date shall be reviewed at the GRVA session of September 2021 according to the progress achieved by the informal group.

Rules of Procedure

7. The IWG shall report to GRVA and is open to all participants of WP.29.
8. Two Co-Chairs and a Secretary will manage the IWG.
9. The Co-Chairs may invite experts (at their discretion), including non-participants of WP.29, to assist in the development of technical standards.
10. The working language of the IWG will be English.
11. 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.
12. An agenda and related documents will be circulated to all members of the IWG in advance of all scheduled meetings.
13. 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.
14. The progress of the IWG will be reported routinely to GRVA – wherever possible as an informal document and presented by the Co-Chairs.
15. All documents shall be distributed in digital format. Meeting documents should be made available to the Secretary for publication on the dedicated website.
16. Final decision on proposals rests with WP.29 and the Contracting Parties.

Annex VI

GRVA priorities for 2021

Adopted on the basis of GRVA-09-39 as amended (see para. 111)

<i>GRVA priorities stemming from the Framework Document on Automated/Autonomous Vehicles</i>			
<i>Category</i>	<i>IWG activities</i>	<i>Priorities and deliverables in 2021</i>	<i>Source</i>
ADS	FRAV	X	Framework document (ECE/TRANS/WP.29/2019/34/Rev.2)
	VMAD	X	
	DSSAD	X	
Connectivity	Cyber security Software Updates (OTA)	X	

<i>GRVA activities stemming from other sources</i>			
<i>Category</i>	<i>Item</i>	<i>Outcomes expected in 2021</i>	<i>Source</i>
ADAS	Review of the Regulation - Amend UN Regulation No. 79 - Draft a new UN Regulation, if necessary	X	AC.2 responses to GRVA requests (Reproduced in GRVA-08-10)
ADS	Extension of UN Regulation No. 157	X	WP.29 recommendation (ECE/TRANS/WP.29/1155, para. 33)
AEBS	UN Regulation No. 131	X	Terms of Reference of the group
Maintenance of existing UN Regulations and UN GTRs	UN Regulations and UN GTRs will be reviewed, as necessary Example of UN Regulations and UN GTRs for which input is expected: <ul style="list-style-type: none"> • UN GTR No. 8 • UN Regulation No. 156 • UN Regulation No. 155 • UN Regulation No. 90 • UN Regulation No. 13 and UN Regulation No. 13-H • Etc. 	X	-AC.3 decisions, according to the provisions in the 1998 Agreements. -As per the provisions of the 1958 Agreement. -Agenda adopted as per Chapter III, Rule 7 of the Rules of Procedure of WP.29, applicable to GRVA.