



Economic Commission for Europe
Inland Transport Committee
World Forum for Harmonization of Vehicle Regulations
Working Party on Automated/Autonomous and Connected Vehicles
Second session

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**Report of the Working Party on Automated/Autonomous and
 Connected Vehicles on its second session**
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I. Attendance

1. The Working Party on Automated/Autonomous and Connected Vehicles (GRVA) held its second session from 28 January to 1 February 2019 in Geneva. 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 as amended): Australia, Belgium, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Hungary, India, Italy, Japan, Luxembourg, the Netherlands, Norway, Poland, Russian Federation, Republic of Korea, Singapore, South Africa, Spain, Sweden, Switzerland, Thailand and the United Kingdom of Great Britain and Northern Ireland (UK). 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), International Motor Vehicle Inspection Committee (CITA), European Association of Automotive Suppliers (CLEPA/MEMA/JAPIA), European Garage Equipment Association (EGEA), European Transport Safety Council (ETSC), European Tyre and Rim Technical Organisation (ETRTO), Euro NCAP, Federation of European Manufacturers of Friction Materials (FEMFM), Fédération Internationale de l'Automobile (FIA), Federation Internationale des Grossistes, Importateurs et Exportateurs en Fournitures Automobiles (FIGIEFA), International Cooperative Alliance (ACI), International Motorcycle Manufacturers Association (IMMA), International Organization for Standardization (ISO), International Telecommunication Union (ITU), International Organization of Motor Vehicle Manufacturers (OICA) and World Blind Union (WBU).

II. Adoption of the agenda (agenda item 1)

Documentation: ECE/TRANS/WP.29/GRVA/2019/1 and Add.1
Informal documents GRVA-02-01 and GRVA-02-15-Rev.1

2. GRVA considered the provisional agenda prepared for this first session and adopted it (ECE/TRANS/WP.29/GRVA/2019/1 and Add.1). The adopted agenda is reproduced in GRVA-02-15-Rev.1, including all informal documents received until the session's starting date. GRVA also agreed on the running order for the session as proposed in GRVA-02-01. The informal documents distributed during the session are listed in Annex I of this report.

III. Highlights of the November 2018 session of WP.29 (agenda item 2)

Documentation: ECE/TRANS/WP.29/1142
Informal document GRVA-02-12

3. The Secretary introduced GRVA-02-12, informing on the highlights of the November 2018 session of WP.29. He referred to the session report ECE/TRANS/WP.29/1142 for further details.

4. The Secretary of WP.29 invited the GRVA delegates to participate in the Global Forum for Road Traffic Safety (WP.1) and WP.29 event during the week of the eighty-first session of the Inland Transport Committee (ITC) and presented the programme of the ITC week.

IV. Exchange of views on work priorities and structure of GRVA informal working groups (agenda item 3)

Documentation: ECE/TRANS/WP.29/2019/2
Informal documents GRVA-02-31, GRVA-02-40, GRVA-02-41,
GRVA-02-42, GRVA-02-44 and GRVA-02-47

5. The Chair introduced ECE/TRANS/WP.29/2019/2 proposing priorities related to WP.29 and its subsidiary bodies activities on Automated Driving Vehicles (ADVs).
6. The expert from Japan mentioned that the framework document work stream proposed in ECE/TRANS/WP.29/2019/2 should be based on the existing national and regional guidelines to provide the big picture of what GRVA should do. GRVA agreed to make progress on this work stream but noted some minor variations in the precise understanding of what this document should include: a document setting principles and guidelines (compiling existing guidelines) and a document that would also have an operational dimension to guide the future work on ADVs.
7. GRVA also reviewed the other priority items listed in the document and agreed that these priorities proposed can be addressed by GRVA.
8. GRVA discussed the need to address both the activities already started as well as the short-term priorities. Therefore, GRVA discussed the potential structure of GRVA to best address these current activities as well as the new short-term priorities defined in ECE/TRANS/WP.29/2019/2. Several proposals for a new structure were presented (GRVA-02-31, GRVA-02-40, GRVA-02-42 and GRVA-02-47). The Chair also submitted GRVA-02-41 with draft Terms of Reference (ToR) and Rules of Procedures (RoP) for a new Informal Working Group (IWG).
9. The secretariat drafted at the end of the session a consolidation of inputs made by the Contracting Parties during the discussions (GRVA-02-44). GRVA agreed with this consolidation in form of a table as reproduced in Annex II, with the expectation that this would provide a base for continued discussions at the March 2019 session of WP.29.

V. Exchange of views on guidelines and relevant national activities (agenda item 4)

Documentation: Informal documents GRVA-02-17, GRVA-02-34 and GRVA-02-43

10. The expert from Japan introduced GRVA-02-17, prepared by the Validation Method of Automated Driving (VMAD) group, providing a consolidated overview of items within Guidelines on ADVs, issued in Australia, Canada, Europe, Japan and USA. He explained that the group was dealing with a novel assessment method, had to look at existing reference documents including Guidelines on ADVs from various Contracting Parties and therefore produced this document. GRVA noted that this work would be very useful for the work under other agenda items.
11. The expert from Spain introduced GRVA-02-34, presenting the Aerodynamic and Flexible Truck for Next Generation of Long Distance Road Transport (AEROFLEX project). GRVA noted that such project could potentially lead to future regulatory activities and agreed that technical barriers should be removed if the safety performance of such systems would be demonstrated.
12. The experts from China and Japan introduced GRVA-02-43 containing preliminary suggestions to the framework document on automated/autonomous driving. GRVA agreed that the workstream on the framework document was strategic and that further work needed to be further discussed in view of March 2019 session of WP.29. Therefore, GRVA requested

the Secretary to organize a series of virtual meetings of the Contracting Parties to discuss this matter.

VI. Automated/autonomous and connected vehicles (agenda item 5)

A. Task Force on Automated Vehicle Testing and its subgroups

Documentation: ECE/TRANS/WP.29/GRVA/2019/13
Informal documents GRVA-02-09, GRVA-02-11, GRVA-02-13, GRVA-02-14, GRVA-02-16, GRVA-02-20, GRVA-02-21, GRVA-02-26, GRVA-02-27 and GRVA-02-32.

13. The expert from Japan, Co-Chair of the Task Force on Automated Vehicle Testing, introduced the status report (GRVA-02-13) of the group, reporting the outcome of the meetings in Japan and China. The group decided to propose new ToR (see GRVA-02-14) for the group, renamed "Validation Method of Automated Driving (VMAD)". He presented GRVA-02-16, providing clarity on the proposed activities of the group in the form of questions and answers. He also presented GRVA-02-26 with a proposed roadmap for the group. GRVA heard concerns about the proposed ToR, in particular it was felt that more precision was required regarding the objectives and the timeline for delivery. GRVA did not adopt the proposed ToR.

14. The expert from France introduced GRVA-02-11, providing considerations of his country on the ADV-performance evaluation. GRVA agreed that this should be considered by the group responsible for developing the new assessment procedure.

15. The expert from ISO introduced GRVA-02-32, presenting the outcome of the ISO working group dealing with the safety of the intended functionality as defined in ISO/PAS 21448. GRVA discussed aspects of the presentation e.g. the definition of an acceptable minimum level of safety, the notion of residual risk, and noted the work done as well as the convergence of this work with the activities of GRVA.

16. The expert from OICA presented briefly GRVA-02-20, introducing GRVA-02-21 with considerations on Data Storage Systems for Automated Driving (DSSAD). GRVA agreed on the need to make progress on this item and requested the secretariat to introduce a new agenda item on DSSAD for the next session of GRVA.

17. Due to lack of time, GRVA did not consider ECE/TRANS/WP.29/GRVA/2019/13, describing the principles of the "Three-Pillar Approach", proposed by the experts from OICA (see GRVA-02-09 and GRVA-02-27).

B. Cyber security and data protection

Documentation: ECE/TRANS/WP.29/GRVA/2019/2
Informal documents GRVA-02-03, GRVA-02-18 and GRVA-02-46

18. The expert from Japan, Co-Chair of the Task Force on Cyber Security and Over-the-Air Software Updates presented GRVA-02-03, containing a status report of the group's activities since the previous GRVA session and introducing ECE/TRANS/WP.29/GRVA/2019/2. He mentioned that the group responded in writing to all the questions and comments received on the proposal.

19. The expert from FIA welcomed the proposal produced by the group but mentioned that it did not reflect their position regarding life time requirements.

20. The expert from OICA wondered whether such aspect raised by FIA would belong to the scope of the 1958 Agreement. The secretariat answered that some precedents could help answering this question e.g. UN Regulation No. 49 (including conformity of in-service vehicles/engines provisions), UN Regulation No. 59 (Replacement (retrofit) silencing systems), UN Regulation No. 83 (including durability requirements and "in use" requirements), UN Regulation No. 90 (Replacement braking parts) and UN Regulation No. 133 (Recyclability of motor vehicles). He stated that he was not aware of any provision of the Agreement that would limit the activities under this Agreement only to the performance of new vehicles. The expert from OICA, Secretary of the Task Force agreed to submit in written an informal document highlighting the difficulty faced by the group with this aspect. He presented, on the last day of the second GRVA session, GRVA-02-46 that described the issue of post-production, understood as the product lifetime starting after the production is definitely discontinued.

21. The expert from Germany and the Netherlands stated that the document should address the three following phases: system/vehicle development, production and post-production.

22. The expert from Japan supported the proposal ECE/TRANS/WP.29/GRVA/2019/2 and stated the need to adopt this document during this session, since the new UN Regulation proposed in the document was one of the important and needed Regulations for the improvement of vehicle safety.

23. The expert from EC provided comments on the proposal (GRVA-02-37).

24. The expert from IMMA presented GRVA-02-18, proposing to exclude vehicles of category L from the scope of the document.

25. The expert from Japan, Co-Chair of the Task Force, responding to the advice received from the previous session of GRVA, reported on its proposal for a test phase to assure the draft produced. He presented the aim and the desired output of this activity.

26. GRVA agreed to keep the documents under this agenda item for continued review at next GRVA session. GRVA invited the Task Force to address the comments received and to proceed with the test phase. GRVA noted the need to make further progress on this item and requested the secretariat to explore the possibility to organize a special session of GRVA in May or June 2019.

C. Software updates (incl. Over-The-Air updates)

Documentation: ECE/TRANS/WP.29/GRVA/2019/3
Informal documents GRVA-01-18 and GRVA-01-38

27. GRVA noted that the presentation of GRVA-02-03 also introduced ECE/TRANS/WP.29/GRVA/2019/3, that the proposal for a test phase would also apply to the software updates work stream. The expert from Japan also supported the document ECE/TRANS/WP.29/GRVA/2019/3. He indicated Japan's support for the earliest adoption (during this session), since the issue was important and a UN Regulation was needed for the improvement of vehicle safety.

28. The expert from EC provided comments on the proposal (GRVA-02-37).

29. The expert from IMMA presented GRVA-02-18, proposing to exclude vehicles of Category L from the scope of the document.

30. The expert from ITU stated that regulating communication would require specific expertise and that the precedent at the Working Party on General Safety provisions with the UN Regulation No. 144 (Accident Emergency Call Systems) ignored communication aspects and durability provisions. He raised the question whether a vehicle equipped with safety

systems based on communication would still be roadworthy in case the communication would no longer function e.g. when the communication system would be obsolete. GRVA agreed that the Task Force on Cyber Security and Over-the-Air Software Updates was a good example demonstrating that WP.29 was able to attract the required experts with the right expertise and to make very quick progress on such strategic issues. GRVA agreed about the need to discuss the roadworthiness of vehicles in case of the vehicle communication unit obsolescence would impact the well performing of safety systems.

31. GRVA agreed to keep ECE/TRANS/WP.29/GRVA/2019/3 and GRVA-01-18 on the agenda of the next GRVA session.

D. Automatically Commanded Steering Function

Documentation: ECE/TRANS/WP.29/GRVA/2019/9
ECE/TRANS/WP.29/GRVA/2019/10
Informal documents GRVA-02-24, GRVA-02-33, GRVA-02-35,
GRVA-02-36 and GRVA-02-45

32. The expert from Japan, on behalf of the Co-chair of the IWG on Automatically Commanded Steering Function (ACSF), introduced GRVA-02-35, containing a status report on the activities of the IWG. He mentioned the consensus reached by the group so far on: Automated Lane Keeping System (ALKS) activation criteria, driver presence provisions, transition demand provisions, minimum risk manoeuvre and emergency manoeuvre considered in parallel with the transition demand provisions. He also mentioned the challenge related to a vehicle not implementing all driver inputs when an ALKS was activated (e.g. in the case of unintended action by the driver), that should be discussed with WP.1. The Chair of GRVA noted that there was a concern that the minimum risk manoeuvre should not automatically result in a vehicle stopping in a live traffic lane.

33. The expert from Spain asked how to verify the activation criteria related to the vehicle driving on roads where pedestrians and cyclists are prohibited at the time of Type Approval. The expert from Germany answered that one technical solution could imply inspecting the maps used by the system.

34. The secretariat asked whether maps would be in the scope of the Regulation. The expert from OICA stated that maps belong to the technical solutions being part of the designs of the system, implying that Regulations on maps would be undesired design requirements. The expert from ITU stated that maps would have to be certified in the future in case maps would serve as redundancy for safety reasons. He also mentioned that maps could have other purposes, e.g. helping Advanced Emergency Braking Systems (AEBS) to eliminate false positive activations on stationary objects and that therefore map providers would have to be fully liable for their products. He offered to provide GRVA with an overview of map development.

35. The expert from France introduced ECE/TRANS/WP.29/GRVA/2019/9 based on GRRF-86-13 proposing clarifications of the Annex 8 testing provisions. The proposal received some comments from Japan, France, Germany and OICA. The expert from France agreed with the suggestion of GRVA to submit a revised proposal with more data for consideration at the September 2019 session. The experts from Japan, Germany and OICA were invited to share with GRVA their test data, supporting their positions.

36. The expert from France introduced ECE/TRANS/WP.29/GRVA/2019/10, proposing clarifications to the tall-tell requirements for Corrective Steering Function (CSF), Emergency steering Function (ESF) and ACSF. GRVA adopted the proposal as amended and reproduced in Annex III. GRVA requested the secretariat to submit Annex III to the report as draft Supplement 1 to the 03 series of amendments to UN Regulation No. 79 to WP.29 and the

Administrative Committee of the 1958 Agreement (AC. 1) for consideration and vote at their June 2019 sessions.

37. The expert from OICA introduced GRVA-02-24 (based on ECE/TRANS/WP.29/GRVA/2018/2), proposing to insert in the Regulation some provisions for ACSF of Category C with a two-step Human Machine Interface (HMI) approach. The expert from the Netherlands disagreed with the proposed seven seconds as the time during which the second deliberate action by the driver should take place while this time for the one-step HMI approach (latest time by which an automatic initiation should occur), already in force, is limited to five seconds. The expert from France supported the proposal and showed flexibility on the seven seconds value to reach consensus among CPs. The expert from Germany asked whether this proposal would allow one single vehicle to be equipped with both a one-step HMI and a two-step HMI and how the combination of both would work. GRVA invited OICA to consider the issues raised by the experts and requested the secretariat to distribute the proposal with an official symbol for review at its September 2019 session.

E. Complex Electronic (CEL) control system requirements

Documentation: ECE/TRANS/WP.29/GRVA/2019/4
Informal document GRVA-02-19

38. The expert from UK introduced ECE/TRANS/WP.29/GRVA/2019/4 as amended by GRVA-02-19, proposing clarifications to Annex 6 of UN Regulation No. 79. The expert from OICA stated that the amendments proposed would require too much work for the approval of simple braking systems. He added that these amendments would make sense to properly assess Advanced Driver Assistant Systems (ADAS). The expert from EC stated that this proposal would be suitable as an amendment to UN Regulation No. 79 but would not be enough for the assessment of ALKS and ADAS. The expert from Spain mentioned that the Type Approval Authority signature provisions' implications were too far-reaching to be mentioned in a footnote. Spain also observed that the proposal placed too much responsibility on the Type Approval Authority to identify risks and stated that the manufacturer should have that responsibility. The expert from the Netherlands explained that this work initially started for the purpose of ACSF of Category B2 defined in UN Regulation No. 79 and that this explained why the document was titled "Proposal for amendments to UN Regulation No. 79". The expert from UK volunteered to submit a revised proposal for amendments to UN Regulation No. 79, addressing the comment received. GRVA agreed that similar provisions should be specifically developed for ALKS and systems with higher levels of autonomy. The Chair noted the implications that this would have on the delivery of a regulatory provision for ALKS.

F. Periodic Technical Inspection / Roadworthiness

39. No document was submitted under this agenda item.

VII. Advanced Emergency Braking Systems (agenda item 6)

Documentation: (ECE/TRANS/WP.29/GRVA/2018/4)
ECE/TRANS/WP.29/GRVA/2019/5
Informal documents GRVA-02-02, GRVA-02-04, GRVA-02-05,
GRVA-02-06, GRVA-02-22, GRVA-02-28 and GRVA-02-39-Corr.1

40. The expert from Japan, Co-Chair of the IWG on AEBS presented GRVA-02-28 with a status report on the activities of the group drafting a new UN Regulation with provisions applicable to vehicles of category M₁ and N₁ and introduced the corresponding proposal in

ECE/TRANS/WP.29/2019/5. He presented the key performance requirements defined for so called vehicle-to-vehicle and vehicle-to-pedestrians AEBS. He mentioned that some provisions were contained in square brackets indicating that decisions by GRVA were needed, e.g. the provisions for manual AEBS deactivation and the definition of performance requirements for vehicle-to-bicycle systems.

41. GRVA discussed provisions allowing for the manual deactivation of an AEBS. The expert from Australia informed that according to their survey, 93 per cent of respondents answered that they never deactivated their AEBS. GRVA, taking into account the risks in case of a misalignment of sensors, agreed to include provisions allowing manual deactivation on the basis that the provisions in the proposal ensured that the process required more than one action to complete.

42. GRVA reviewed the proposal and agreed with the text as reproduced in GRVA-02-39-Corr.1.

43. GRVA requested the secretariat to submit the proposal as amended in para. 42 as draft UN Regulation on Uniform provisions concerning the approval of motor vehicles with regard to the Advanced Emergency Braking System (AEBS) for M₁ and N₁ vehicles for consideration and vote by WP.29 and the Administrative Committee AC.1 at their June 2019 sessions.

44. GRVA invited the IWG on AEBS to submit a formal proposal for a new series of amendments addressing the performance of vehicle-to-bicycles AEBS for review at the September 2019 of GRVA.

45. GRVA did not consider GRVA-02-02 as its content was not anymore relevant, given the decision in para. 42 above.

46. The expert from OICA introduced GRVA-02-22, proposing amendments to ECE/TRANS/WP.29/GRVA/2019/5. GRVA recommended that the proposal be reviewed by the IWG on AEBS and that this proposal would either be included in the submission of the IWG for the September 2019 session or be submitted as a separate proposal for review in September 2019, if no consensus would be reached on this proposal by the IWG on AEBS.

VIII. UN Regulations Nos. 13, 13-H, 139 and 140 (agenda item 7)

A. Electronic Stability Control

Documentation: ECE/TRANS/WP.29/GRVA/2019/6
(Informal document WP.29-175-05)
Informal documents GRVA-02-23 and GRVA-02-30

47. The expert from Australia introduced ECE/TRANS/WP.29/GRVA/2019/6 addressing the concern expressed during the 175th WP.29 session. GRVA adopted the proposal as amended (GRVA-02-30) and reproduced in Annex IV. GRVA requested the secretariat to submit it to WP.29 and AC.1 as draft Supplement 3 to UN Regulation No. 140 for consideration and vote at their June 2019 sessions.

48. The expert from OICA, on behalf of OICA and CLEPA, and anticipating the development of future steering systems, introduced GRVA-02-23, proposing amendments to the Electronic Stability Control related test conditions. GRVA questioned the impact on UN Global Technical Regulation (GTR) No. 8. as well as the unintended impact on the compliance with the initial spirit of the Regulation.

B. Modular Vehicle Combination

49. No document was submitted under this agenda item.

C. Clarifications

Documentation: ECE/TRANS/WP.29/GRVA/2019/12
(Informal document WP.29-175-04)
Informal documents GRVA-02-10 and GRVA-02-29

50. GRVA considered ECE/TRANS/WP.29/GRVA/2019/12 (together with ECE/TRANS/WP.29/GRVA/2019/6) under agenda item 7 (a) above. GRVA adopted the proposal as amended (GRVA-02-29) and reproduced in Annex V. GRVA requested the secretariat to submit it to WP.29 and AC.1 as draft Supplement 2 to the 01 series of amendments to UN Regulation No. 139 (BAS) for consideration and vote at their June 2019 sessions.

51. The expert from the Russian Federation introduced GRVA-02-10, aimed at clarifying the provisions on the evaluation of the energy source and energy storage devices performance defined in Annex 7 to UN Regulation No. 13. GRVA discussed in detail the proposal and requested the secretariat to distribute this document with an official symbol for the September 2019 session of GRVA.

D. Other business

Documentation: Informal documents GRVA-01-27 and GRVA-02-25

52. The expert from OICA introduced GRVA-02-25, proposing clarifications of the requirements regarding the generation of a brake signal to illuminate the stop lamp especially in the context of hybrid electric and battery electric vehicles. The proposal received some comments. GRVA invited the expert from OICA to submit a revised proposal for review at the September 2019 session of GRVA.

53. The expert from OICA presented GRVA-01-27 proposing an alternative approach for conducting the Type II-A test (defined in UN Regulation No. 13) for battery electric vehicles (also including hybrid electric vehicles). He highlighted the economic burden on manufacturers producing battery electric vehicles of category M₃ (Classes II, II and B) as well as N₃ (for the carriage of dangerous goods and those towing trailers of Category O₄). GRVA agreed to discuss this issue but expressed reservations with the idea presented because of the high safety risk related to the situation of such vehicle driving downhill with a full state of charge of the traction battery. The expert from Czech Republic reported on their experience with city buses equipped with battery electric vehicles. GRVA agreed that more information including statistics on the battery state of charge, effect on aftermarket replacement parts, details on the working principle of the proposed "brake estimator" would be needed in order to further discuss this matter.

IX. Motorcycle braking (agenda item 8)

A. UN Global Technical Regulation No. 3

Documentation: (ECE/TRANS/WP.29/GRVA/2018/9)
Informal document GRVA-02-07

54. The expert from Italy introduced GRVA-02-07 proposing amendments to the original proposal (ECE/TRANS/WP.29/GRVA/2018/9) for amendments to UN GTR No. 3 for harmonization of the GTR and UN Regulation No. 78. The proposal received some comments. The expert from the Netherlands asked why the proposal contained technical requirements that differed from those in UN Regulation No. 78. The expert from Canada

highlighted some formulations that could be better defined to facilitate the implementation of the UN GTR into Self Certification regulations.

B. UN Regulation No. 78

Documentation: ECE/TRANS/WP.29/GRVA/2019/7

55. The expert from IMMA presented ECE/TRANS/WP.29/GRVA/2019/7, introducing revised provisions on the stop lamps activation under more conditions than the application of the service brake only (e.g. regenerative braking). GRVA adopted the proposal as amended and reproduced in Annex VI to the report. GRVA requested the secretariat to submit Annex VI to WP.29 and AC.1 as draft Supplement 1 to the 04 series of amendments to UN Regulation No. 78 for consideration and vote at their June 2019 sessions.

X. UN Regulation No. 79 (agenda item 9)

Documentation: ECE/TRANS/WP.29/GRVA/2019/8
Informal document GRVA-02-08

56. The expert from UK introduced ECE/TRANS/WP.29/GRVA/2019/8 and GRVA-02-08 amending it, proposing to insert technical prescriptions on Remote Control Manoeuvring (RCM) which were systems that were already installed on vehicles without being regulated to date. The expert from Germany did not support the proposal and suggested to insert one sentence in the Regulation that would forbid RCM in vehicles of category M₁ and N₁. The expert from OICA explained that such system already existed for vehicles of category M₁G and that there would be future applications such as reverse assistant for trailers that would bring quantifiable benefits in terms of safety. Following comments and input from the experts from Australia, France and Sweden, the Chair asked GRVA whether the status quo would be acceptable, i.e. do Contracting Parties accept that such systems are permitted and do not require recognition by Regulation. The expert from the Russian Federation summed-up the discussion and suggested to adopt the proposal. GRVA adopted the proposal as amended (Annex VII). GRVA requested the secretariat to submit it to WP.29 and AC.1 for consideration and vote at their November 2019 session. GRVA unanimously agreed with this delayed submission until the November 2019, so that the dissent from the experts from Germany and the Netherlands could be considered again during the September 2019 session of GRVA, in view of reaching a broader consensus.

XI. UN Regulation No. 89 (agenda item 10)

57. In the absence of documents, no discussion took place under this agenda item.

XII. UN Regulation No. 90 (agenda item 11)

Documentation: ECE/TRANS/WP.29/GRVA/2018/12
(Informal documents GRRF-86-41 and GRRF-86-40)
Informal document GRVA-01-12

58. The expert from Spain presented ECE/TRANS/WP.29/GRVA/2018/12, proposing to extend the scope of UN Regulation No. 90 by including replacement brake lining assemblies for vehicles of Category L₆ and L₇, which were recently included in the latest version of UN Regulation No. 78 and to align the provisions in Annex 7 to UN Regulation No. 90 with those in the current text of UN Regulation No. 78. GRVA adopted the proposal and requested the

secretariat to submit it to WP.29 and AC.1 as draft Supplement 5 to the 02 series of amendments to UN Regulation No. 90 for review and vote at their sessions in June 2019.

59. The expert from CLEPA introduced GRVA-01-12 with minor amendment proposals to UN Regulation No. 90, addressing the concern expressed in GRRF-86-40. The expert from France proposed that the amendment to the table in para. 5.3.4.1.1 should also include the vehicles of category L₆ and L₇ (in alignment with the vehicles of category M₁ and N₁). The experts from Spain and from CLEPA supported the proposed alignment of L₆ and L₇ values with the existing values for M₁ and N₁. The expert from CLEPA agreed to prepare a revised proposal for review at the September 2019 session.

60. GRVA did not receive information from the Special Group of Experts on UN Regulation No. 90 (see more details see the former status report GRRF-86-41).

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

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

61. The secretariat briefly introduced this agenda item suggesting actions potentially needed for aligning the provisions in UN Regulations with those of the Revision 3 to the 1958 Agreement. GRVA agreed to reflect on the points proposed in the agenda and to resume discussion at the next session of GRVA. The expert from the Russian Federation drew the attention of GRVA to the last slide of WP.29-176-19 on the necessary modification of the communication documents in UN Regulations.

B. International Whole Vehicle Type Approval

Documentation: ECE/TRANS/WP.29/GRVA/2019/11
Informal documents WP.29-176-21, GRVA-01-15 and GRVA-01-41

62. The expert from the Russian Federation introduced ECE/TRANS/WP.29/GRVA/2019/11 aimed at addressing the issue raised in WP.29-176-19. The expert from CLEPA expressed reservations because customs could be confused by the introduction of differences between the Approval Number and the Approval Code proposed in this document. The expert from Spain mentioned that UN Regulation No. 90 was used in various countries not being Contracting Party to the 1958 Agreement and that therefore the issue raised concerning customs could be valid. The expert from Spain stated that Transitional Provisions could be added to the document. The expert from CLEPA stated the need to first test the markets with this new approach and agreed to undertake a study. The expert from the Russian Federation agreed to submit a revised proposal for consideration at the September 2019 session of GRVA.

63. The expert from Spain, Ambassador to the IWG on International Whole Vehicle Type Approval (IWVTA) reported on the activities of this group. He recalled that WP.29-176-21 was referred by WP.29 to WP.29 subsidiary bodies ("GRs"). GRVA agreed that UN Regulation No. 89 could be added to the list in Annex 4 of UN Regulation No. 0 at the condition that the inclusion of this UN Regulation would not require it to be split and that the IWG would have to first identify that no administrative adverse effect would exist.

XIV. Election of Officers (agenda item 13)

Documentation: (ECE/TRANS/WP.29/1142
ECE/TRANS/WP.29/2018/166)

64. In compliance with Rule 35 of the Rules of Procedure (TRANS/WP.29/690 as amended) and as authorised by WP.29 at its November 2018 session (ECE/TRANS/WP.29/1142, para 75), GRVA called for the election of Vice Chair(s). The secretariat informed GRVA that he received two nominations for candidate Vice-Chairpersons. He also informed GRVA that the latest amendment to the RoP adopted by WP.29 at its November 2018 session (ECE/TRANS/WP.29/2018/166). GRVA elected Ms. C. Chen (China) and Mr. T. Onoda (Japan) as Vice-Chairpersons of GRVA for the sessions 2019.

XV. Other business (agenda item 14)

65. No discussion took place under this agenda item.

Annex I

[English only]

List of informal documents (GRVA-02-...) considered during the session

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
1	(Chair) Running order and tentative timetable	A
2	(AEBS) Proposal for amendments to ECE/TRANS/WP29/GRVA/2019/5	F
3	(TF on CS/OTA) Status report of the TF on CS/OTA	F
4	(ISO) ISO 19206-1	F
5	(ISO) ISO 19206-2	F
6	(ISO) ISO 19206-3	F
7	(Italy) Proposal for amendments to ECE/TRANS/WP29/GRVA/2018/9	E
8	(UK) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2019/8 (RCM)	A
9	(OICA) Future certification of Automated/Autonomous Driving Systems	D
10	(Russian Federation) Proposal for a Supplement to the 11 series of amendments to UN Regulation No. 13 (Heavy Vehicle Braking)	C
11	(France) New validation approaches for automated driving safety	F
12	(Secretariat) Highlights of the 176th WP.29 session and general information	F
13	(VMAD) Status report of the IWG on [VMAD]	D
14	(VMAD) Proposal for Terms of Reference and Rules of Procedures for the IWG on VMAD	D
15- Rev.1	(Secretariat) Updated and consolidated provisional agenda (incl. informal documents submitted until 27 January 2019)	F
16	(VMAD) Explanation on VMAD - questions and answers	F
17	(VMAD) Reference Guidelines for Automated Driving Vehicles	F
18	(IMMA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2019/2 and ECE/TRANS/WP.29/GRVA/2019/3	D
19	(UK) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2019/4	F
20	(OICA) Data Storage System for Automated Driving (DSSAD)	D
21	(OICA) Proposal for a draft Regulation on DSSAD	D
22	(OICA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2019/5	F
23	(CLEPA/OICA) Proposal for amendments to UN Regulation No. 140 (ESC)	F
24	(CLEPA/OICA) Proposal for a draft Supplement to the 03 series of amendments to UN Regulation No. 79	F
24	(CLEPA/OICA) Proposal for a Supplement to the 03 series of amendments to UN Regulation No. 79	F
25	(CLEPA/OICA) Proposal for a Supplement to the 01 series of amendments to UN Regulation No. 13-H	F
26	(VMAD) Roadmap and working schedule for VMAD IWG	F
27	(OICA) Future Certification of Automated Driving Systems	D
28	(AEBS) Status report from the IWG on AEBS	F

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
23	(Secretariat) Agreed amendments to ECE/TRANS/WP.29/GRVA/2019/12	A
30	(Secretariat) Agreed amendments to ECE/TRANS/WP.29/GRVA/2019/6	A
31	(Germany) GRVA work priorities - Proposal Draft Structure	F
32	(ISO) The Safety Of the Intended Functionality	F
33	(Germany) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2019/9	F
34	(Spain) AEROFLEX - For the next Generation of Long Distance Road Transport	F
35	(ACSF) Status report	F
36	(ACSF) Proposal for revised Terms of Reference	D
37	(EC) Comments on ECE/TRANS/WP.29/GRVA/2019/2	D
38	(EC) Comments on ECE/TRANS/WP.29/GRVA/2019/3	D
39	(Secretariat) Agreed amendments to ECE/TRANS/WP.29/GRVA/2019/5	B
40	(EC) Discussion on the priorities	F
41	(Chair) Informal Working Group on Functional Requirements for Automated and Autonomous Vehicles	D
42	(Japan) Proposal for a new GRVA structure based on ECE/TRANS/WP.29/2019/2	F
43	(China/Japan) Preliminary suggestions for the framework document on automated/autonomous driving	E
44	(Secretariat) Current allocation of the priorities (in ECE/TRANS/WP.29/2019/2) to the IWGs of GRVA	A
45	(Secretariat) Agreed amendments to ECE/TRANS/WP.29/GRVA/2019/10	A
46	(CS/OTA) Issues identified in connection with the work of the TF on CS/OTA	D
47	(Chair) IWGs of GRVA - Structure and management proposal	F

Notes:

- A Endorsed or adopted without amendment.
- B Endorsed or adopted with amendments or corrections.
- C Resume consideration on the basis of a document with an official symbol.
- D Kept as reference document/continue consideration.
- E Revised proposal for the next session.
- F Consideration completed or to be superseded.

Annex II

Allocation of the priorities (ECE/TRANS/WP.29/2019/2) to IWGs of GRVA

Note: The table below was drafted and agreed by GRVA at the end of its 2nd session as a consolidation of inputs made by the Contracting Parties during the discussions at this GRVA session, with the expectation that this provide a base for continued discussions at the March 2019 session of WP29. It allocates the priorities (ECE/TRANS/WP.29/2019/2) to IWGs of GRVA and defines indicative deadlines for these priorities in order to guide the Chairs of IWGs. It recalls that GRVA authorizes the IWGs to work while the final Terms of Reference will be further developed to reflect the decisions taken by GRVA after endorsement of WP.29.

<i>Task</i>	<i>Allocation to</i>	<i>Deadline</i>
Framework document on automated/ autonomous vehicles	GRVA (supported by webex meetings)	2 months
Functional Requirements for automated / autonomous vehicles	FRVA * (* working under the former mandate of the IWG on ACSF)	36 months
ALKS	FRVA	12 months
New Assessment / Test Methods	VMAD** (** working under the temporary general mandate proposed in informal doc GRVA-02-14)	[December 2020]
Requirements for functional safety “CEL”	VMAD	ALKS: 12 months
Cyber security and (OTA) software updates	CS/OTA*** (*** working under the current mandate, extended to perform the test phase)	12 months
DSSAD Specific for ALKS	FRVA (or subgroup)	DSSAD for ALKS: 12 months
General	New group	Review in September 2019 (incl. Clear objectives, deadline and the identification of differences with EDR to be determined first before discussion on detailed data information)

Note:

- FRVA is the new Informal Working Group on Functional Requirements for Automated/Autonomous Vehicles
- VMAD is the new Informal Working Group on the Validation Method for Automated Driving

Annex III

Agreed amendments to ECE/TRANS/WP.29/GRVA/2019/10

Based on GRVA-02-45 (see para 36. of this report)

Amendments to UN Regulation No. 79

Paragraph 5.1.6.1.1., amend to read:

"5.1.6.1.1. Every CSF intervention shall ..., 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 ... optical warning signal specified above."

Paragraph 5.1.6.2.6., amend to read:

"5.1.6.2.6. Any intervention of an ESF shall be indicated to the driver with an optical and with an acoustic or haptic warning signal to be provided at the latest with the start of the ESF intervention and maintained as long as the intervention exists.

For this purpose appropriate ... fulfil the requirements for the respective optical, acoustic or haptic signals above."

Paragraph 5.6.4.2.3., amend to read:

"5.6.4.2.3. The system shall only be activated (standby mode) after a deliberate action by the driver.

Activation by the driver ... least two independent means.

In the case of a transition from a road type with a classification permitting an ACSF of Category C, to a type of road where an ACSF of Category C is not permitted, the system shall be deactivated automatically (off mode)."

Paragraph 5.6.4.5.6., amend to read:

"5.6.4.5.6. The system shall provide ... in accordance with the warning strategy below:

If, after a period of no longer than 3s after the initiation of the lane change procedure and before the start of the lane change manoeuvre, the driver is not holding the steering control, an optical warning signal shall be provided. This signal shall be the same as the signal specified in paragraph 5.6.2.2.5. above.

The warning signal shall be active until the driver is holding the steering control, or until the system is deactivated, either manually or automatically according to 5.6.4.6.8."

Annex IV

Agreed amendments to ECE/TRANS/WP.29/GRVA/2019/6

Based on GRVA-02-30 (see para 47. of this report).

Amendments to UN Regulation No. 140

Paragraph 5.1., amend to read:

- "5.1. To comply with this UN Regulation, vehicles shall be equipped with an ESC system that meets the functional requirements specified in paragraph 6. and the performance requirements in paragraph 7. under the test procedures specified in paragraph 9. and under the test conditions specified in paragraph 8. of this Regulation."

Annex V

Agreed amendments to ECE/TRANS/WP.29/GRVA/2019/12

Based on GRVA-02-29 (see para 50. of this report)

Amendments to UN Regulation No. 13-H

Paragraph 5.1., amend to read:

- "5.1. To comply with this UN Regulation, vehicles shall be equipped with a brake assist system meeting the functional requirements specified in paragraph 6. of this Regulation. Compliance with these requirements shall be demonstrated by meeting the provisions of paragraphs 8. or 9. of this Regulation under the test requirements specified in paragraph 7. of this Regulation. In addition to the requirements of this Regulation, vehicles equipped with a brake assist system shall also be equipped with ABS in accordance with technical requirements of Regulation 13-H."

Annex VI

Agreed amendments to ECE/TRANS/WP.29/GRVA/2019/7

See para 55. of this report

Amendments to UN Regulation No. 78

Insert a new paragraph 2.31., to read:

"2.31. *"Braking Signal"* means a logic signal indicating when illumination of the stop lamp is required or allowed as specified in paragraph 5.1.17. of this Regulation".

Insert a new paragraph 2.32., to read:

"2.32. *"Electric Regenerative Braking System"* means a braking system which, during deceleration, provides for the conversion of vehicle kinetic energy into electrical energy and is not part of the service braking system."

Insert a new paragraph 5.1.17. and its sub-paragraphs, to read:

"5.1.17. Generation and de-activation of the braking signal to illuminate stop lamp(s) as defined in UN Regulation No. 53 shall only be under the following conditions:

5.1.17.1. Application of any service brake by the rider shall generate a braking signal that will be used to illuminate the stop lamps.

5.1.17.2. In addition, in case of vehicles powered solely by electric powertrain equipped with electric regenerative braking systems as defined in paragraph 2.32. of this Regulation, which produces a retarding force upon release of the accelerator control, the braking signal shall be generated also according to the following provisions:

<i>Vehicle decelerations</i>	<i>Signal generation</i>
$\leq 0.7 \text{ m/s}^2$	The signal shall not be generated
$> 0.7 \text{ m/s}^2$ and $\leq 1.3 \text{ m/s}^2$	The signal may be generated
$> 1.3 \text{ m/s}^2$	The signal shall be generated

In all cases the signal shall be de-activated at the latest when the deceleration has fallen below 0.7 m/s^2 .*"

*Insert a footnote *, to read:*

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

Annex VII

Adopted amendments to ECE/TRANS/WP.29/GRVA/2019/8

Based on GRVA-02-08 (see para 56. of this report)

Amendments to ECE/TRANS/WP.29/GRVA/2019/8

Renumber paragraph 2.3.4.18. to 2.4.18.

Insert a new paragraph 5.7., to read:

"5.7. Provisions for RCM fitted to vehicles of category M₁ and N₁.
Any RCM shall be subject to the requirements of Annex 6."

Renumber paragraph 5.6.5. to 5.7.1 and amend, to read:

"5.7.1. Vehicles of category M₁ and N₁ meeting the requirements of Category G may be equipped with RCM provided the system fulfils the following requirements."

Renumber paragraphs 5.6.5.1. to 5.6.5.6. as 5.7.1.1 to 5.7.1.6. respectively.

Renumber paragraph 5.6.5.7. to 5.7.1.7. and amend, to read:

"5.7.1.7. The specified maximum RCM operating range (S_{RCMmax}) shall not exceed 6m."

Renumber paragraphs 5.6.5.8. to 5.6.5.10. as 5.7.1.8 to 5.7.1.10. respectively.

Amend and renumber paragraphs 5.6.5.11. and 5.6.5.12., to read:

"5.7.1.11. System information data
The Following data shall be provided together with the documentation package required in Annex 6 of this Regulation to the Technical Service at the time of type approval:"

Renumber paragraphs 5.6.5.12.1. to 5.6.5.12.3. as 5.7.1.11.1. to 5.7.1.11.3. respectively.

Delete paragraph 5.6.5.13.

Renumber paragraphs 5.6.5.13.1. to 5.6.5.13.2. as 5.7.1.12. to 5.7.1.13. respectively.

Renumber paragraph 5.6.5.13.3. to 5.7.1.14 and amend, to read:

"5.7.1.14. If the vehicle stops having detected an obstacle in the manoeuvring area, subsequent operation shall only be possible following confirmation from the driver. The vehicle shall respond to any subsequent objects detected in the manoeuvring area as prescribed in paragraph 5.7.1.13."

Renumber paragraph 5.6.5.13.4. to 5.7.1.15.

Renumber paragraph 5.6.5.13.5. to 5.7.1.16. and amend, to read:

"5.7.1.16. The vehicle shall detect if, while the RCM function is active, the vehicle enters any of the locations listed under paragraph 5.7.1.12. In such a case, the vehicle shall stop immediately and the RCM function shall be deactivated."

Renumber paragraphs 5.6.5.13.6. to 5.6.5.13.7. as 5.7.1.17. to 5.7.1.18. respectively.

Renumber paragraph 5.6.5.13.8. to 5.7.1.19. and amend, to read:

"5.7.1.19. If the vehicle reaches or exceeds the maximum total distance travelled defined in paragraph 5.7.1.17., the vehicle shall stop immediately and the RCM function shall be deactivated. It shall not be possible to subsequently activate the RCM until a time period of at least 1 minute has elapsed. This shall be indicated to the driver at least at the remote control device."

Insert a new paragraph 5.7.1.20., to read:

"5.7.1.20. The manufacturer shall provide the Technical Service with documentation and supporting evidence to demonstrate compliance with the provisions of paragraphs 5.7.1.12., 5.7.1.13., and 5.7.1.16. This information shall be subject to discussion and agreement between the Technical Service and vehicle manufacturer."
