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### World Forum for Harmonization of Vehicle Regulations

### Working Party on Automated/Autonomous and Connected Vehicles

#### Fifth session

Geneva, 10-14 February 2020

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

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## I. Attendance and opening

1. The Working Party on Automated/Autonomous and Connected Vehicles (GRVA) held its fifth session from 10 to 14 February 2020 in Geneva, 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, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, India, Ireland, Israel, Italy, Japan, Luxembourg, the Netherlands, Norway, Poland, Russian Federation, Republic of Korea, Singapore, Slovakia, South Africa, Spain, Sweden, Switzerland, the United Kingdom of Great Britain and Northern Ireland (UK) and United States of America. 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), European Association of Automotive Suppliers (CLEPA/MEMA/JAPIA), International Association of Body and Trailer Building Industry (CLCCR), European Garage Equipment Association (EGEA), European Tyre and Rim Technical Organization (ETRTO), European Transport Safety Council (ETSC), Fédération Internationale de l'Automobile (FIA), Federation Internationale des Grossistes, Importateurs et Exportateurs en Fournitures Automobiles (FIGIEFA), Federation of European Manufacturers of Friction Materials (FEMFM), International Road Transport Union (IRU), Institute for Security and Safety, Brandenburg University of Applied Sciences (ISS), International Motorcycle Manufacturers Association (IMMA), International Cooperative Alliance (ICA), International Road Federation (IRF), International Organization for Standardization (ISO), International Telecommunication Union (ITU) and International Organization of Motor Vehicle Manufacturers (OICA), Recreational Vehicle Industry Association (RVIA), Securing America's Future Energy (SAFE), International Association of Public Transport (UITP) and World Bicycle Industry Association (WBIA).
2. The Chair opened the fifth session of GRVA mentioning the new Coronavirus 2019 outbreak context explaining the absence of the expert from China, Vice-Chair of GRVA.

## II. Adoption of the agenda (agenda item 1)

*Documentation:* ECE/TRANS/WP.29/GRVA/2020/1 and Add.1  
Informal documents GRVA-05-01 and GRVA-05-32

3. GRVA considered the provisional agenda prepared for this session and adopted it (ECE/TRANS/WP.29/GRVA/2020/1 and Add.1) with the addition below. The adopted agenda is reproduced in GRVA-05-32, including the informal documents received before the session started. (All informal documents distributed during the session are listed in Annex I of this report.)

*Item 8(c), documentation,* insert reference to ECE/TRANS/WP.29/GRVA/2020/14/Rev.1

4. GRVA also agreed on the running order for the session as proposed in GRVA-05-01.

## III. Highlights of the November 2019 session of WP.29 (agenda item 2)

*Documentation:* ECE/TRANS/WP.29/1149  
Informal documents GRVA-05-28

5. The Secretary presented GRVA-05-28, with the highlights of the November 2019 session of the World Forum for Harmonization of Vehicle Regulations (WP.29). He highlighted, among others, the question raised by WP.29 to the subsidiary bodies concerning the use of the Unique Identifier in relation with e.g. installation marking provisions. He referred to ECE/TRANS/WP.29/1149 for more details.

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

*Documentation:* Informal documents GRVA-05-21, GRVA-05-48 and GRVA-05-49

6. The expert from the Netherlands presented (GRVA-05-48 and GRVA-05-49) their report “Who is in control?” and the outcome of their crash investigations involving vehicles equipped with Advance Driver Assistance Systems (ADAS). She highlighted the importance of learning from road crashes involving these technologies. She also stressed the risk related to the discrepancies between the knowledge of drivers on these technologies and the expectations regarding drivers using them.

7. The expert from Japan presented GRVA-05-21 informing the Working Party on the Japanese regulatory activities on automated driving toward the realisation of automation of level 3 (as defined in ECE/TRANS/WP.29/1140), in line with the UN Regulations under the 1958 Agreement.

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

### **A. Deliveries of the Informal Working Group on Automatically Commanded Steering Function**

*Documentation:* Informal documents GRVA-05-07 (revised), GRVA-05-18, GRVA-05-19, GRVA-05-25, GRVA-05-31, GRVA-05-36, GRVA-05-37, GRVA-05-44, GRVA-05-45, GRVA-05-46, GRVA-05-62

8. The expert from Germany, Secretary of the Informal Working Group (IWG) on Automatically Commanded Steering Function (ACSF), presented the status report of the group GRVA-05-25, introducing the content of GRVA-05-07, proposing the text for a new UN Regulation on Automated Lane Keeping Systems (ALKS) with empty sections as placeholder for the work prepared by the IWG on Validation Methods for Automated Driving (VMAD) and the IWG on Event Data Recorder (EDR) / Data Storage Systems for Automated Driving (DSSAD). GRVA reviewed in detail GRVA-05-07 and sought consensus on provisions in square brackets.

9. The expert from OICA introduced GRVA-05-46 proposing amendments to paragraph 2.1.1. and GRVA-05-45 explaining the need for lane change allowance in ALKS minimum risk or emergency manoeuvres. The expert from UK supported this position and stated the need to allow these lane changes. GRVA could not agree to allow lane changes in the absence of corresponding provisions at this stage, but will continue the discussion.

10. The expert from Japan, Co-Chair of the IWG on EDR / DSSAD reported on the activities of the group on DSSAD for ALKS. GRVA reviewed in detail GRVA-05-31, with draft DSSAD provisions to be inserted in the draft UN Regulation on ALKS.

11. The expert from Germany introduced GRVA-05-36 presenting motivations for the cut-in requirements for ALKS.

12. The GRVA Vice-Chair, Co-Chair of the IWG on VMAD, informed GRVA on the relevant activities of the group. He provided an overview of a draft Appendix 1 to Annex 4 to the draft UN Regulation on ALKS (GRVA-05-19), for which comments from the Automotive Industry were received. He informed on the process to finalize the documents from the group for this session, agreed during a virtual meeting organized by the secretariat on 12 February 2020 (lunchtime). He commented that, although the ALKS related documents were still in a review process by the IWG, he could explain the content, in case GRVA would wish so, e.g. from the viewpoint of interface, integrity and consistency with the other ALKS documents tabled for review during this session. GRVA welcomed this offer to introduce the purpose of document.

13. The expert from Japan provided an overview of the content in the draft Appendix 1 to Annex 4 (GRVA-05-62). The expert from the Russian Federation commented that the relationship between the requirement in the main text and scenarios in the Appendix should be clarified. The expert from the European Commission stated that the parameters in paragraph 5.2.5.2. of the main text and parameters in the Appendix should be consistent.

14. The expert from the European Commission gave an overview of the proposed Annex 4 for the UN Regulation on ALKS (GRVA-05-18). He raised the question, whether introducing in-use reporting was in line with the provisions of the 1958 Agreement. The secretariat stated that he was not aware of any provisions in the Agreement that would prevent such report.

15. The expert from Germany clarified upon request that, in their view, the same Technical Service should perform the evaluation in draft Annex 4 and perform the tests prescribed in draft Annex 5.

16. The Secretary introduced GRVA-05-37 on behalf of the Vice-Chair (China). He agreed to look for the requested clarifications and to send them to the expert from China.

17. GRVA requested the Secretary to consolidate the ALKS, DSSAD and VMAD documents (GRVA-05-07-Rev.1). GRVA discussed on this basis open items such as the terms in the formula in paragraph 5.2.5.2. (GRVA-05-44), the parameters to be registered by DSSAD, the content of Appendix 1 to Annex 4 etc. The Secretary produced two other revisions in the course of the week, which were used by GRVA to build consensus. The outcome of the session on ALKS is reflected in GRVA-05-07-Rev.3. GRVA agreed to use this version in preparation of the sixth GRVA session.

## **B. Deliveries of the Informal Working Group on Functional Requirements for Automated and Autonomous Vehicles**

*Documentation:* Informal documents GRVA-05-40 and GRVA-05-41

18. The expert from the United States of America, Co-Chair of the IWG on Functional Requirements for Automated and Autonomous Vehicles (FRAV) summarized the group's work (GRVA-05-40 and GRVA-05-41). He noted that FRAV has held two full meetings contiguous with VMAD and with more than 100 experts. He highlighted the group's concern to use accurate terms. The group discouraged the use of "autonomous" as misleading and uses "Minimal", not "Minimum", Risk Manoeuvres (MRM) because an MRM responds to road conditions and best available solutions. In addition to avoidance of injury or death and compliance with traffic laws, the group noted additional aspects such as behaviour consistent with safe and fluid traffic flows and attention to economic consequences such as destruction of property. He reported that the group had identified automated vehicle configurations that fall outside the category definitions of Special Resolution S.R.1. He also suggested improvements to the Framework Document on Automated Vehicles (FDAV) would be soon necessary and presenting the group's consensus on high-level requirements. He noted unallocated elements of the FDAV (i.e. vehicle maintenance and inspection, consumer education and training, crashworthiness and compatibility, and post-crash Automated Vehicle (AV) behaviour) pertinent to functional safety. He announced planned meetings in Paris (April 2020) and California (September 2020).

19. GRVA discussed the proper use of "Operational Design Domain" versus "Operational Domain". The expert from the Russian Federation expressed support in the FRAV activities based on the terminology defined by SAE International. The experts from CEN and SAFE also expressed support. The IWG on FRAV announced that detailed discussion would continue during the next meetings.

20. The experts from the European Commission and OICA noted the importance to also involve the Global Forum on Road Traffic Safety (WP.1) on terminology and also to inform them on other relevant GRVA activities.

### **C. Deliverables of the Informal Working Group on Validation Methods for Automated Driving**

*Documentation:* Informal document GRVA-05-23

21. The expert from Japan, Co-Chair of the IWG on VMAD, presented GRVA-05-23 informing on the outcomes of the IWG according to FDAV. He commended the collaboration between IWGs on FRAV and VMAD. He recalled the outcome of the group regarding the ALKS activities. He highlighted the ongoing work on existing and upcoming assessment/test methods of automated driving. He announced the next steps for the group and the next meetings scheduled in 2020.

22. GRVA endorsed the report provided.

### **D. Deliveries of the Informal Working Group on Event Data Recorder / Data Storage Systems for Automated Driving**

*Documentation:* Informal document GRVA-05-34

23. The expert from Japan, Co-Chair of the IWG on EDR/DSSAD, informed GRVA on the outcome of the work of the group. He briefly recalled the ALKS related activities already presented under item 4(a) above and also presented GRVA-05-34 with a review of existing national and regional activities as well as a proposed way forward for DSSAD.

24. GRVA endorsed the report provided.

## **VI. Connected vehicles (agenda item 5)**

### **A. Cyber security and data protection as well as software updates**

*Documentation:* ECE/TRANS/WP.29/GRVA/2020/2,  
ECE/TRANS/WP.29/GRVA/2020/3,  
ECE/TRANS/WP.29/GRVA/2020/4,  
ECE/TRANS/WP.29/GRVA/2020/5,  
ECE/TRANS/WP.29/GRVA/2020/6  
Informal documents GRVA-05-02, GRVA-05-04, GRVA-05-05-Rev.1, GRVA-05-06, GRVA-05-13, GRVA-05-15, GRVA-05-16, GRVA-05-17, GRVA-05-20, GRVA-05-22, GRVA-05-26, GRVA-05-27, GRVA-05-29, GRVA-05-33, GRVA-05-42, GRVA-05-51, GRVA-05-54.

25. The expert from the United Kingdom and Northern Ireland, Co-Chair of the Task Force (TF) on Cyber Security and Over-The-Air issues (CS/OTA), presented the outcome of the TF. He introduced the proposed draft UN Regulation on Cyber Security and Cyber Security Management System (ECE/TRANS/WP.29/GRVA/2020/2 (withdrawn), ECE/TRANS/WP.29/GRVA/2020/3 amended by GRVA-05-05). He mentioned that the revised proposal entailed a recent proposal from Germany and the European Commission (paragraphs 5.3.1.-5.3.3.) in square brackets. He recalled that the TF was planning to deliver further documents accompanying the UN Regulation: a resolution and an interpretation document. He stated that these documents would be further elaborated during the next session of the TF and would distillate the learnings of the test phase in 2019. He informed GRVA that the work on a UN Global Technical Regulation (GTR) had to start.

26. The expert from Japan introduced GRVA-05-20 proposing amendments to paragraph 7.3.8. on the use of cryptographic modules.

27. The expert from the European Commission introduced GRVA-05-22, aimed at clarifying the consequences of the Cyber Security Management System certificate expiration.

28. The expert from Japan introduced GRVA-05-13, expressing strong objections to the proposed paragraphs 5.3.1.-5.3.3. establishing prerequisites to the granting of type approvals

not in line with the 1958 Agreement and posing a sovereignty risk. The expert from the Russian Federation expressed a similar position and proposed to draft an alternative proposal.

29. The expert from France introduced, GRVA-05-29 proposing an alternative to the proposed paragraphs 5.3.1.-5.3.3. as well as amendments proposal for paragraph 7.4 and Annex 5.

30. The expert from the European Commission introduced a compromise proposal (GRVA-05-42) for paragraphs 5.3.1.-5.3.3. aimed at addressing the proposals from Japan and France.

31. The expert from OICA introduced GRVA-05-33. He stated that the test phase's general outcome was the confirmation of the applicability of the former draft. He explained their major concerns with the current text. He mentioned their concerns from the industry point of view regarding the major type approval procedure modifications introduced by paragraphs 5.3.1.-5.3.3. and the major delay associated risks.

32. He stated that insufficient considerations were given to existing vehicle architectures and requested the introduction of transitional provisions. He also stated that the reporting provisions were excessive. He called on GRVA to consider these concerns and to resolve them on a consensus basis.

33. The expert from FIGIEFA introduced GRVA-05-15, proposing a process flow for national/regional authorities to define objective minimum compliance criteria for the UNECE cybersecurity regulation and a way forward for aftermarket issues.

34. GRVA reviewed in detail GRVA-05-05, having in mind the presentations received (paragraphs 26-32 above).

(a) GRVA discussed the scope of the draft Regulation (keeping vehicles of Categories S, R, T, O in square brackets).

(b) GRVA discussed GRVA-05-17 and agreed to keep the proposed paragraph 1.4.

(c) GRVA agreed that the Regulation and the 1958 Agreement would not be prescribing the mutual recognition, among Contracting Parties, of CSMS (and Software Update Management System) certificates.

(d) The expert from Singapore requested clarifications concerning the reporting obligations according to the draft Regulation and wondered whether any reporting would only be shared among the Contracting Parties of the 1958 Agreement. The Co-Chair of the TF explained that the current draft did not impose reporting on existing cyber security threats. He explained that there were already information sharing platforms such as Automotive Information Sharing and Analysis Center (AutoISAC) in the United States of America. GRVA invited the TF to address the question raised.

(e) GRVA resumed discussion on the paragraphs 5.3.1.-5.3.3. The expert from the Russian Federation explained that provisions regarding the competencies of Technical Services should be introduced in Schedule 2 to the 1958 Agreement. He added that GRVA-05-42 was not enough and that not trusting Approval Authorities was not a good idea, as it would be time consuming and expensive. He stated that the Database for Exchange of Type Approval documentation (DETA) could have a useful role to play, that the TF could be entitled to learn from type approvals and propose relevant Regulation amendments to GRVA, as necessary, and he proposed the corresponding regulatory wording (GRVA-05-51). The expert from the Republic of Korea stated that these paragraphs could be misused. The expert from CEN proposed an alternative procedure based on the so-called common criteria approach and referred to WP.29-179-28 and WP.29-179-29. The TF Co-Chair noted that the common criteria approach was not complete. The expert from FIA introduced GRVA-05-16. GRVA requested the TF to provide comments on this document. GRVA noted to availability of GRVA-05-02 reproducing ISO/SAE DIS 21434 addressing aspects of the draft Regulation but not the mutual recognition aspect.

35. The Secretary produced a consolidation of the draft Regulation based on the input received during the session (GRVA-05-05/Rev.1). GRVA agreed to use this consolidation as a basis for further work until the next GRVA session.

36. The expert from the United Kingdom and Northern Ireland, Co-Chair of the group introduced a proposal for a new UN Regulation on Software Updates and Software Updates Management System (ECE/TRANS/WP.29/GRVA/2020/4 amended by GRVA-05-04 and reproduced in GRVA-05-06 in a consolidated version). He explained that the group would prepare an interpretation document but that no resolution would be necessary.

37. GRVA adopted ECE/TRANS/WP.29/GRVA/2020/4 amended by Annex III and requested the secretariat to submit it (without square brackets) to WP.29 and the Administrative Committee AC.1 for consideration and vote at their June 2020 sessions.

38. The expert from the United Kingdom and Northern Ireland introduced ECE/TRANS/WP.29/GRVA/2020/5, proposing provisions for software identification numbers. GRVA adopted the proposal and requested the secretariat to consult WP.29 on the best way to implement these provisions in existing regulations.

39. GRVA noted the report of the test phase prepared by the TF (ECE/TRANS/WP.29/GRVA/2020/6) and discussed that the TF on CS/OTA should be renamed IWG on CS/OTA.

## **B. Legal considerations regarding technical provisions over the vehicle lifetime**

*Documentation:* Informal document GRVA-05-12

40. The Secretary introduced GRVA-05-12, evaluating the legal basis for lifetime and lifecycle related requirements provided by the provisions in the 1958 Agreement and the precedents in UN Regulations.

41. GRVA endorsed the document.

## **C. Other business**

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

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

## **A. Automatically Commanded Steering Function**

*Documentation:* ECE/TRANS/WP.29/GRVA/2020/7  
ECE/TRANS/WP.29/GRVA/2020/8  
ECE/TRANS/WP.29/GRVA/2020/9  
ECE/TRANS/WP.29/GRVA/2020/10  
Informal documents GRVA-05-08/Rev.2, GRVA-05-09/Rev.3,  
GRVA-05-24, GRVA-05-30, GRVA-05-47, GRVA-05-50, GRVA-  
05-52, GRVA-05-53, GRVA-05-57, GRVA-05-58 and GRVA-05-59

43. The expert from AVERE introduced ECE/TRANS/WP.29/GRVA/2020/7 and ECE/TRANS/WP.29/GRVA/2020/8 (and their respective amendments in GRVA-05-08 and GRVA-05-24), proposing amendments to the ACSF provisions, resuming the discussion started in September 2019. He mentioned the support provided by the expert from the United Kingdom. The experts from Sweden and France provided comments. The experts from Denmark, Finland, the Netherlands and Norway expressed concerns. The expert from the Netherlands explained that the dynamics problems reported by the manufacturer, member of AVERE, were not due to the provisions in the Regulation but were due to design choices made by this manufacturer. The experts from the European Commission, Korea and United Kingdom and Northern Ireland supported the proposals; the expert from OICA, too. The expert from the Russian Federation proposed alternative proposals (GRVA-05-59) improving the text. The expert from the United Kingdom proposed GRVA-05-57 aimed at addressing the comments expressed by the expert from Sweden. GRVA reviewed all revised proposals



produced by the expert from AVERE during the week but remained divided. GRVA agreed to review a revised proposal at the sixth session of GRVA, if time allows.

44. The Chair of GRVA noted the division of GRVA on this matter. He proposed that GRVA performs a general review of the Regulation at its September 2020 session.

45. The expert from AVERE introduced ECE/TRANS/WP.29/GRVA/2020/9 as amended by GRVA-05-09. The proposal received comments (GRVA-05-58). The expert from the Netherlands expressed concerns with the proposal as the proposed amendment did not improve safety. GRVA adopted the proposal as reproduced in Annex IV (based on GRVA-05-09-Rev.3) and requested the secretariat to submit it to WP.29 and AC.1 as a supplement to the 03 series of amendments to UN Regulation No. 79 for consideration and vote at their June 2020 sessions.

46. The expert from CLEPA introduced ECE/TRANS/WP.29/GRVA/2020/10, proposing amendments to the provisions applicable to ACSF of Category B. GRVA adopted the proposal as draft supplements to the 02 and the 03 series of amendments to UN Regulation No. 79 and requested the secretariat to submit them to WP.29 and AC.1 for consideration and vote at their June 2020 sessions.

47. The expert from OICA presented GRVA-05-52, introducing GRVA-05-30 with amendments to the provisions applicable to ACSF of Category C.

48. The expert from CITA introduced GRVA-05-50 with amendment proposals to Annex 8.

49. The expert from Germany introduced GRVA-05-53 with amendment proposals to para. 5.6.4.7. (critical situation).

50. GRVA requested the secretariat to distribute GRVA-05-30, GRVA-05-50 and GRVA-05-53 with official symbols at its September 2020 session.

51. The expert from OICA introduced GRVA-05-47 showing an alternative Human-Machine Interface (HMI) to control the Remote-Control Parking function. GRVA invited the expert from OICA to submit an amendment proposal addressing this new HMI for consideration at its September 2020 session.

## **B. Steering equipment**

*Documentation:* ECE/TRANS/WP.29/GRVA/2020/11  
ECE/TRANS/WP.29/GRVA/2020/16  
Informal document GRVA-05-63

52. The expert from OICA introduced ECE/TRANS/WP.29/GRVA/2020/11, proposing amendments to the warning provisions applicable to Corrective Steering Function for buses equipped with Lane Warning Departure Warning (LDWS). GRVA adopted the proposal as draft supplements for the 02 and 03 series of amendments to UN Regulation No. 79 and requested the secretariat to submit it for consideration and vote to WP.29 and AC.1 at their June 2020 sessions.

53. The expert from OICA presented GRVA-05-63, introducing ECE/TRANS/WP.29/GRVA/2020/16 inserting provisions for a new category of Emergency Steering Function (ESF) aimed to allow for the type approval of emergency assistance systems (e.g. in case of driver's health problem). GRVA agreed to resume consideration of this proposal at its September 2020 session.

## **C. Remote Control Manoeuvring**

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

## **D. Other business**

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

## **VIII. Advanced Emergency Braking Systems (agenda item 7)**

*Documentation:* ECE/TRANS/WP.29/GRVA/2020/17  
Informal documents GRVA-05-35, GRVA-05-55, GRVA-05-60 and GRVA-05-64

56. The expert from Japan, Co-Chair of the IWG on Advanced Emergency Braking Systems (AEBS), presented (GRVA-05-55) the outcome of the group. He introduced ECE/TRANS/WP.29/GRVA/2020/17 (amended by GRVA-05-35), with provisions on the evaluation of the AEBS robustness.

57. The expert from WBIA urged GRVA to take bicycles in consideration when regulating AEBS. The expert from the European Commission, Co-Chair of the group, invited WBIA to join the meetings of the group and share data regarding bicycles and announced that further amendment proposals including a bicycle detection scenario would be submitted for review in September 2020.

58. The Chair of GRVA recalled that WP.29 was addressing the safety of Vulnerable Road Users as one of its priority. He mentioned some UN Regulations already adopted by WP.29 including a recent one: UN Regulation No. 151 (Blind Spot Information System for the Detection of Bicycles).

59. GRVA adopted ECE/TRANS/WP.29/GRVA/2020/17 as amended by Annex VI (based on GRVA-05-60) as draft supplements to the 00 and 01 series of amendments to UN Regulation No. 152 and requested the secretariat to submit to WP.29 and AC.1 for consideration and vote at their June 2020 sessions.

60. The expert from OICA introduced GRVA-05-64, proposing amendments to the Electronic Stability Control deactivation provisions impacting AEBS. GRVA requested the secretariat to distribute the document with an official symbol at its September 2020 session. GRVA invited the expert from OICA to consider consulting the IWG on AEBS on this matter.

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

### **A. Electronic Stability Control**

*Documentation:* ECE/TRANS/WP.29/GRVA/2020/12  
Informal documents GRVA-05-11 and GRVA-05-56

61. The expert from OICA, recalling the purpose of GRVA-04-44, introduced ECE/TRANS/WP.29/GRVA/2020/12 with an amendment proposal of the normalized angle (A) amplitude requirement when performing the “sine with dwell” test procedure described in UN Regulation No. 140. He explained that this amendment would be necessary as the current requirement was not suitable for some future steering equipment which would have significantly low steering gear ratio.

62. The expert from the Republic of Korea introduced GRVA-05-11 proposing to keep the text of UN Regulation No. 140 and UN GTR No. 8 aligned. The experts from the United States of America and Canada offered comments and agreed to review the proposal.

63. GRVA adopted ECE/TRANS/WP.29/GRVA/2020/12 as amended by Annex V (based on GRVA-05-56) and requested the secretariat to submit it to WP.29 and AC.1 as draft supplement to UN Regulation No. 140 for consideration and vote at their June 2020 sessions. GRVA supported the initiative of the Republic of Korea. GRVA invited the representative of the Republic of Korea to proceed with the submission of an authorization

request to amend UN GTR No. 8 at the next session of the Executive Committee of the 1998 Agreement (AC.3).

## B. Modular Vehicle Combinations

*Documentation:* Informal documents GRVA-05-03-Rev.1 and GRVA-05-43

64. The expert from OICA presented, on behalf of the Chair of the IWG on Modular Vehicle Combinations (MVC), GRVA-05-43, introducing GRVA-05-03 with amendment proposal to UN Regulation No. 13, aimed at allowing the approval of Modular Vehicle Combination with regards to braking. He also presented ways forward for the IWG.

65. GRVA agreed with the proposed ways forward (option 1 noted in the document: “on the basis of an adhoc group meeting of the IWG hosted by the industry”) and encouraged the delegations to send comments to the IWG on (i) GRVA-05-03-Rev.1 and also on (ii) referring to a newer version of the ISO standard in UN Regulation No. 13 (ISO 11992-2:2014).

66. GRVA requested the secretariat to distribute GRVA-05-03-Rev.1 with an official symbol at its September 2020 session, unless a revised document would be submitted by the group.

## C. Clarifications

*Documentation:* ECE/TRANS/WP.29/GRVA/2020/13  
ECE/TRANS/WP.29/GRVA/2020/14 and Rev.1  
Informal documents GRVA-05-10, GRVA-05-14,  
GRVA-05-38-Rev.1 and GRVA-05-39-Rev.1

67. The expert from the Russian Federation, recalling previous discussions on this item at the last GRVA session, introduced ECE/TRANS/WP.29/GRVA/2020/13, proposing clarifications regarding the application of test procedures in Annex 7 to UN Regulation No. 13. GRVA adopted this proposal and requested the secretariat to submit it to WP.29 and AC.1 as supplement to the 11 series of amendments to UN Regulation No. 13 for consideration and vote at their June 2020 sessions.

68. The expert from the Russian Federation introduced ECE/TRANS/WP.29/GRVA/2020/14/Rev.1, proposing corrections to the Russian version of UN Regulation No. 13. GRVA adopted this proposal and requested the secretariat to submit it as Corrigendum (Russian only) to the 11 series of amendments to UN Regulation No. 13 to WP.29 and AC.1 for consideration and vote at their June 2020 sessions.

69. The expert from France introduced GRVA-05-10 proposing clarifications to UN Regulation No. 13-H concerning a new reconditioning protocol for brake linings, in case battery recharging or a battery replacement would interrupt a test. GRVA requested the secretariat to distribute this document with an official symbol at the September 2020 session.

70. The expert from CLEPA introduced GRVA-05-14 with a proposal for amendments to UN Regulation No.13 allowing the approval of electro-mechanical braking systems. GRVA requested the secretariat to distribute the proposal with an official symbol at it September 2020 session.

71. The expert from OICA presented GRVA-05-39-Rev.1 introducing GRVA-05-38-Rev.1 with a revised proposal for a new endurance braking testing procedure (proposed Type IV test) for Battery Electric and Hybrid Electric heavy Vehicles (including vehicle of Category M<sub>3</sub> and N<sub>3</sub>) not coping with the existing Type II-A test when the traction battery is fully charged.

72. GRVA requested the secretariat to distribute the OICA proposal with an official symbol at it September 2020 session.

## **X. Motorcycle braking (agenda item 9)**

### **A. UN Global Technical Regulation No. 3**

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

### **B. UN Regulation No. 78**

*Documentation:* ECE/TRANS/WP.29/GRVA/2020/15

74. The expert from IMMA introduced ECE/TRANS/WP.29/GRVA/2020/15, proposing to align UN Regulation No. 78 (Motorcycle braking) with the last amendment to UN GTR No. 3 adopted by GRVA at its September 2019 session.

75. GRVA adopted the proposal and requested the secretariat to submit it (without square brackets) to WP.29 and AC.1 as draft 05 series of amendments to UN Regulation No. 78 for consideration and vote at their June 2020 sessions.

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

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

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

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

*Documentation:* Informal document GRVA-05-65

77. The secretariat presented GRVA-05-65, on behalf of the IWG on DETA, with useful information about the database and its future updates, aiming its promotion.

78. GRVA also discussed the request from the IWG through WP.29, addressed to all subsidiary bodies of WP.29, to reflect on the ways to proceed with Unique Identifier markings and additional markings (e.g. installation marking provisions) that were potentially not covered by the Unique Identifier, as noted in the IWG working paper DETA-36-07.

### **B. International Whole Vehicle Type Approval**

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

## **XIII. Other business (agenda item 12)**

*Documentation:* Informal documents GRVA-05-61

80. The secretariat presented GRVA-05-61, containing a proposal drafted together with the GRVA officers for GRVA priorities for 2021. This proposal was in response to the request, addressed by the Administrative Committee for the Coordination of Work (AC.2) to the Chairs of the subsidiary bodies of WP.29, to identify the top three priorities and to provide the associated timelines to inform the strategic planning activities of the Committee. GRVA endorsed the proposal for the following top three priorities: FRAV, VMAD and Cyber Security. GRVA agreed that the delegations could send further comments to the Chair, as needed, until the March 2020 session of AC.2.

## Annex I

[English only]

### List of informal documents (GRVA-05-...) considered during the session

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
1	(Chair) Running order	D
2	(ISO/SAE) ISO/SAE DIS 21434	D
3r1	(MVC) Proposal for amendments to UN Regulation No. 13	<b>B</b>
4	(TF CS/OTA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/4	D
5	(TF CS/OTA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/3	D
6	(TF CS/OTA) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/4 (consolidated)	D
7r3	(IWG on ACSF) Proposal for a new UN Regulation on Automated Lane Keeping System (ALKS)	D
8r2	(AVERE) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/8	D
9r3	(AVERE) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/9	D
10	(France) Suggestion for amendment of UN Regulation No. 13-H	<b>B</b>
11	(Korea) Proposal for amendments to UN GTR No. 8 (Electronic Stability Control)	D
12	(Secretariat) The 1958 Agreement and lifetime/lifecycle considerations	D
13	(Japan) Proposal for amendments to GRVA-05-05	D
14	(CLEPA) Proposal for a Supplement to UN Regulation No. 13 (EMB)	<b>B</b>
15	(FIGIEFA) Explanatory document	D
16	(EGEA/FIA/FIGIEFA/ETRMA) Proposal for a Recommendation	D
17	(FIGIEFA) Proposal for amendments to the draft Regulations on Cyber Security and Software Updates	D
18	(VMAD) Draft Annex 4 on audit/CEL to the new UN Regulation on ALKS	D
19	(VMAD) Draft Appendix on Traffic Critical Scenarios to the Annex on audit/assessment to the new UN Regulation on Automated Lane Keeping systems (ALKS)	D
20	(Japan) Proposal for amendments to GRVA-05-05	D
21	(Japan) TBT notification of the draft Safety Regulations for Motor Vehicles	D
22	(EC) Proposal for amendments to GRVA-05-05	D
23	(VMAD) Status report from the 5th session of the IWG on VMAD	D
24r1	(AVERE) Proposal for amendments to ECE/TRANS/WP.29/GRVA/2020/7	D
25	(ACSF) Status of the IWG on ACSF	D
26	(CS/OTA) Report on the status of the cyber security and software update process recommendations	D
27	(Secretariat) Proposal for amendments to GRVA-05-05	D
28	(Secretariat) Highlights of the 179th WP.29 session and general information	D
29	(France) Proposal for amendments to GRVA-05-05	D
30	(OICA/CLEPA) Proposal for amendments to UN Regulation No. 79 (Steering Equipment)	<b>B</b>
31	(EDR/DSSAD) Data Storage Requirements for Draft ALKS Regulation	D
32	(Secretariat) Updated and consolidated provisional agenda (incl. informal documents received until 7 Feb. 2020 6.00 p.m.)	D
33	(CLEPA/OICA) Comments to GRVA-05-05 from the CLEPA/OICA experts	D
34	(EDR/DSSAD) Review of the existing national / regional activities and a proposed way forward for DSSAD	D

<i>No.</i>	<i>(Author) Title</i>	<i>Follow-up</i>
35	(AEBS) Proposal for amendments to UN Regulation No. 152 (AEBS M1/N1)	D
36	(Germany) Motivation of Cut-In Requirements	D
37	(China) China's comments on the test specifications of ALKS	D
38r1	(OICA) Type IIA for Batterie Electric Vehicles	D
39	(OICA) New Type IV test for vehicles equipped with an electric regenerative endurance braking system (UN Regulation No. 13)	D
40	(FRAV) Status report - Functional Performance Requirements for Automated Driving Systems and ADS-Equipped Vehicles	D
41	(FRAV) Status report	D
42	(EC) Proposal for amendment to GRVA-05-05	D
43	(MVC) Presentation of draft amendment to UN R13	D
44	(OICA) Avoidance criteria for cut-in situation	D
45	(OICA) Analysis of necessary and proposed requirements fro lane change in ALKS Minimal Risk or Emergency Maneuvers	D
46	(OICA) Proposal for amendments to GRVA-05-07 (as revised)	D
47	(OICA) RCP - Alternative HMI (video)	D
48	(Netherlands) Report "Who is in control?"	D
49	(Netherlands) Presentation "Who is in control?"	D
50	(CITA) Proposal for amendments to the 03 series of amendments to UN Regulation No. 79 (Steering equipment)	<b>B</b>
51	(Russian Federation) Proposal for amendments to GRVA-05-05	D
52	(OICA) Evidence regarding the proposed amendments to UN-R79 ACSF of Category C	D
53	(Germany) Proposal for amendments to the 03 series of amendments to UN Regulation No. 79 (Steering equipment)	<b>B</b>
54	(FIGIEFA) Proposal for amendments to the draft Regulations on Cyber Security and Software Updates	D
55	(AEBS) Proposal from the IWG on AEBS to amend UN Regulation No. 152	D
56	(OICA) Additional proposal for a supplement to UN Regulation No. 140 (ESC)	D
57	(UK) Proposal for amendment to the 03 series of amendments to Un Regulation No. 79 (Steering equipment)	D
58	(Russian Federation) Proposal for amendments to GRVA-05-09-Rev.1	D
59	(Russian Federation) Proposal for amendments to GRVA-05-24	D
60	(GRVA) Adopted amendments to UN Regulation No. 152 (AEBS)	D
61	(Secretariat) GRVA priorities	D
62	(VMAD/SG1a) Necessity of the traffic critical scenarios drafting at SG1a	D
63	(OICA) Proposal for ESF (c) - Emergency Assistance	D
64	(OICA) Proposal for amendments to UN Regulation No. 152	<b>B</b>
65	(DETA) Database for the Exchange of Type Approval documentation	D

*Notes:*

Administrative follow-up with the documents:

- A Adopted and to be forwarded to WP.29 as informal document.
- B** Resume consideration on the basis of a document with an official symbol.
- C Revised proposal for the next session.
- D Consideration completed.

## Annex II

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

<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)	Mr. E. Wondimneh. <sup>1</sup> Ms. C. Chen <sup>1</sup> Mr. R. Damm <sup>1</sup>	USA China Germany	March 2020
Validation Method for Automated Driving (VMAD)	Mr. T. Onoda <sup>1</sup> Mr. P. Striekwold <sup>1</sup> Mr. I. Sow <sup>1</sup>	Japan Netherlands Canada	December 2020
Cyber Security and Over-The-Air software updates (CS/OTA)	Mr. T. Niikuni <sup>1</sup> Dr. D. Handley <sup>1</sup> Ms. M. Versailles <sup>1</sup>	Japan UK USA	November 2019
Event Data Recorder / Data Storage System for Automated Driving (EDR/DSSAD)	Mr. T. Guiting <sup>1</sup> Mr. T. Niikuni <sup>1</sup> Mrs. J. Doherty <sup>1</sup>	Netherlands Japan USA	November 2020
Automatically Commended Steering Functions (ACSF)	Mr. C. Theis <sup>1</sup> Mr. H. Morimoto <sup>1</sup>	Germany Japan	March 2020
Advanced Emergency Braking Systems (AEBS)	Mr. A. Lagrange <sup>1</sup> Mr. T. Hirose <sup>1</sup>	EC Japan	March 2020
Modular Vehicle Combinations (MVC)	Mr. A. Gunneriusson	Sweden	March 2020

<sup>1</sup> IWG Co-Chairs

## Annex III

### Amendments to ECE/TRANS/WP.29/GRVA/2020/4

Adopted on the basis GRVA-05-04 (see para. 37)

*Insert new paragraph 5.1.1., to read:*

**"5.1.1. The Approval Authority or the Technical Service shall verify by testing a vehicle of the vehicle type that the vehicle manufacturer has implemented the measures they have documented. Tests shall be performed by Approval Authority or the Technical Service itself or in collaboration with the vehicle manufacturer by sampling."**

*Paragraph 7.1.1.7., amend to read:*

**"7.1.1.7. A process to confirm the compatibility of a software update with the target vehicle(s) configuration before it is issued. This shall include an assessment of the last known current software/hardware configuration of the target vehicle(s) for compatibility with the update before it is issued;"**

*Paragraph 7.1.1.12., amend to read:*

**"7.1.1.12. A process whereby the vehicle manufacturer shall be able to make the information according to paragraph 7.1.2.3. and 7.1.2.4. available to responsible authorities or the its Technical Services. This may be for the purpose of type approval, conformity of production, market surveillance, recalls and Periodic Technical Inspection (PTI)."**

*Paragraph 7.1.2.4., amend to read:*

**"7.1.2.4. Documentation listing target vehicles for the update and verification confirmation of the compatibility of the registered configuration or last known configuration of those vehicles with the update."**

*Paragraph 7.2.2.5., amend to read:*

~~"7.2.2.5. Before the software update process starts the vehicle manufacturer shall inspect the vehicle(s) to ensure that the software update can be successfully completed. The vehicle manufacturer shall demonstrate to the satisfaction of the Approval Authority and its Technical Service the measures for managing the situation when the vehicle manufacturer detects that an update should not be initiated.~~

**The vehicle shall ensure that preconditions have to be met before the software update is executed."**

*Annex 1, Appendix 1, amend to read:*

"...requirements for the Software Update Management System laid down in paragraph 7.1. of UN Regulation No. [This Regulation] ..."

*Annex 4, amend to read:*

"...Complies with the provisions of UN Regulation No. [this Regulation] ..."



## Annex IV

### Amendments to ECE/TRANS/WP.29/GRVA/2020/9

Adopted on the basis of GRVA-05-09-Rev.3, marked in *italic* (see para. 45)

Paragraph 5.6.4.6.7., amend to read:

"5.6.4.6.7. The direction indicator shall remain active throughout the whole period of the lane change manoeuvre and shall be **automatically** deactivated by the system no later than 0.5 seconds after the resumption of ACSF of Category B1 lane keeping function as described in paragraph 5.6.4.6.6. above. **Automatic deactivation by the system of the direction indicator is required only if the lane change manoeuvre is initiated automatically, ~~and/or~~ if the direction indicator control is not fully engaged (latched position) during the lane change manoeuvre, ~~or both.~~**

## Annex V

### Amendments to ECE/TRANS/WP.29/GRVA/2020/12

Adopted on the basis of GRVA-05-56 (see para. 63)

*Paragraph 7.*, amend to read:

“7. Performance requirements

During each test performed under the test conditions of paragraph 8. and the test procedure of paragraph 9.9., the vehicle with the ESC system engaged shall satisfy the directional stability criteria of paragraphs 7.1. and 7.2., and it shall satisfy the responsiveness criterion of paragraph 7.3. during each of those tests conducted with a commanded steering wheel<sup>5</sup> angle of 5A or greater but limited as per paragraph 9.9.4., where A is the steering wheel angle computed in paragraph 9.6.1.

**Notwithstanding the above, the responsiveness criterion is deemed to be satisfied also for systems where the maximum operable steering wheel angle defined in paragraph 9.9.4. and the lateral displacement prescribed in paragraph 7.3. are achieved at a commanded steering wheel angle less than 5A.**

Where a vehicle has been physically tested in accordance with paragraph 8., the compliance of versions or variants of that same vehicle type may be demonstrated by a computer simulation, which respects the test conditions of paragraph 8. and the test procedure of paragraph 9.9. The use of the simulator is defined in Annex 1 to this Regulation.”

## Annex VI

### Amendments to ECE/TRANS/WP.29/GRVA/2020/17

Adopted on the basis of GRVA-05-60, marked in *italic* (see para. 59)

Add a new paragraph 6.10., to read:

- “6.10. Robustness of the system**
- 6.10.1.** Any of the above test scenarios, where a scenario describes one test setup at one subject vehicle speed at one load condition of one category (Car to Car, Car to Pedestrian), shall be performed two times. If one of the two test runs fails to meet the required performance, the test may be repeated once. A test scenario shall be accounted as passed if the required performance is met in two test runs. The number of failed tests runs within one category shall not exceed:
- 10.0 per cent of the performed test runs for the Car to Car tests; and
  - 10.0 per cent of the performed test runs for the Car to Pedestrian tests.
- 6.10.2.** The root cause of any failed test run shall be analyzed together with the Technical Service and annexed to the test report. If the root cause cannot be linked to a deviation in the test setup, the technical service may test any other speeds *for subject vehicle and target vehicle* within the speed range as defined in paragraphs 5.2.1.3., 5.2.1.4., 5.2.2.3. or 5.2.2.4. as relevant.
- 6.10.3.** During the assessment as per Annex 3, the manufacturer shall demonstrate, via appropriate documentation, that the system is capable of reliably delivering the required performances.”
-