

[Real world Road Test Informal Working Group] Terms of Reference

Introduction

1. The development of technologies that assist drivers of road vehicles with the driving task is advancing rapidly. The global regulatory community has recognised the need to ensure that vehicles fitted with such advanced systems continue to provide a safe and efficient means of transport and so is investigating a completely new assessment regime to provide the reassurance prior to introduction of volume produced vehicles into the marketplace.
2. It is recognised that there is a general lack of practical experience of testing/assessing the functionality of automated driving systems and that the technology will continue to evolve rapidly over the coming years. A Subgroup therefore should be established under the auspices of the Working Party on Automated/Autonomous and Connected Vehicles (GRVA). The Subgroup will include the widest possible constituency of contracting parties and associated/affiliated bodies, and aim to create a testing regime that is sufficiently flexible to allow regular updates where appropriate.
3. It is well established that different regulatory authorities might apply such new provisions in ways that are consistent with their domestic or regional frameworks, and so the Informal Working Group will investigate and propose ways to ensure the widest approach to the testing solutions and outcomes.
4. The work of Subgroup 2 will be based on the “3-pillar approach”. It will focus on the real world road test. The work of this Informal Working Group will be based on the agreed “3-pillar approach”. It combines a range of elements to cover the evaluation of automated vehicles using;
5. Assessing the vehicle in a controlled environment,
6. Auditing the OEM’s processes (including simulation and virtual testing) and the self-declaration, and
7. Testing the vehicle in a real world test.
- 8.

Objective

9. To develop a real world road test that assesses a vehicle’s automated systems so as to realise the road safety and associated benefits under real life traffic conditions based on use-case test scenarios.
10. [To develop procedures that foresee the integration of general system safety requirements like HMI, Minimal Risk Condition, Transition Scenario etc. of the

manufacturer's safety concept]. The aspect of demonstration that the system complies with traffic rules / traffic laws is part of the real world road test.

11. To develop this testing regime with the understanding that the real world road test is a building block within the 3-pillar concept and not a stand-alone measure. To leave open the decision whether to implement the work as UN Regulations, UN GTRs, guidelines or best practices.

Activities

12. At a high level, Subgroup 2 will develop procedures to assess road vehicles in traffic situations where (as defined in SAE J3016_JUN2018):
 - a. Conditional driving automation is used,
 - b. High driving automation is used, and/or
 - c. Full driving automation is used.
13. Subgroup 2 will focus on vehicles of categories M and N⁽¹⁾ and is empowered to limit those functions and assessments to certain use cases provided adequate measures are implemented within the vehicle to avoid incorrect use by the driver and/or vehicle occupants.
14. Subgroup 2 will develop requirements for Real World Road Tests on the basis of appropriate use-case specific test scenarios.
15. These requirements will be elaborated over time. Moreover, the requirements for these blocks may be influenced by the outcome of the audit/assessment/tests conducted in the other building blocks.
16. Subgroup 2 will consider new approaches to complement the safety assessments while also potentially reducing the burden to manufacturers and approval/certification bodies.
17. Subgroup 2 should take full account of existing data and research in developing its proposals. It may consider pre-existing standards (e.g. ISO, SAE and JSAE) and UN Regulations/ UN GTRs, and those from other territories in developing its proposals.

Working Criteria

18. Subgroup 2 recognises that there are three separate general traffic classifications of how a vehicle is used:
 - a. Urban traffic;
 - b. Inter-urban & rural traffic, and
 - c. Motorway & highway traffic.

¹ Including vehicles of category O when combined with vehicles of category N, where appropriate.

19. Subgroup 2 will work initially on the basis of developing proposals for traffic cases 1 & 3 with traffic case 2 potentially being dealt with in a second phase. However, if the workload of this approach is considered too great or the timescale too long, Subgroup 2 will submit a revised plan to deliver the outcome in 3 phases of activity.
20. Subgroup 2 will develop real world road tests which demonstrate safe behaviour of the vehicle including safe responses to the environment as well as safe behaviour to other road users.
21. The road tests developed by Subgroup 2 will be aiming at regular traffic situations. However, this may not prevent the occurrence of odd traffic situations during execution which in that occasion will become part of the road test.
22. The road tests developed by Subgroup 2 will take into account the specific aspects of the automated functions (to restrict the testing to that which is relevant to automated driving systems' performance), vehicle requirements from legislation, the vehicle category, the related traffic rules, and the required driving capabilities of the automated driving system. The expected driving capabilities of the automated functions are to be defined.
23. To the extent possible, the regulatory solutions and outcomes will be evidence-based, and established as performance requirements.
24. Recognising the rapid evolution of vehicle connectivity and cooperative ITS, Subgroup 2 may include consideration of these aspects in developing its proposals.
25. Consideration will be given as to how the vehicle will recognise its geo-location and the road traffic rules applicable during the road test.
26. Where there is a transfer of control, for example the system engages/disengages during a journey, the vehicle shall incorporate adequate means for the transfer of control to/from the driver/operator, including appropriate human-machine interaction.
27. As a general principle Subgroup 2 will develop appropriate assessment criteria to evaluate the automated driving system performance of the vehicle during the real world driving test.
28. Recognising that the introduction of these new advanced systems could create new risks to vehicles while in-use, Subgroup 2 will consider whether it is possible to include measures to assist in-service conformity assessments of these advanced systems throughout a vehicle's life. This could assist e.g. PTI.

29. Subgroup 2 will proactively liaise with other relevant WP.29 groups, and WP.1 where appropriate, to minimise overlap and ensure consistency of approach. Wherever possible Subgroup 2 will aim to synchronise its meetings with other UNECE meetings to ease the travel burden on delegates.

Timescales

30. Subgroup 2 shall be remitted to work until December 2020.

31. Subject to Subgroup 2's activities, draft proposals should be submitted to [the September 2020 Session] of GRVA.

Annex

Rules of Procedure

32. Subgroup 2 is subsidiary to GRVA, and is open to all participants of WP29.
33. Subgroup 2 will appoint a chair and a secretary and may create further sub-groups to deal with the technical issues and proposals. In so doing it will agree chairs and secretarial resources among its membership.
34. The official language of Subgroup 2 will be English.
35. All documents and/or proposals must be submitted to the Secretary of Subgroup 2 in a suitable electronic format in advance of the meeting. The group may refuse to discuss any item or proposal which has not been circulated ten working days in advance.
36. An agenda and related documents will be circulated to all members of Subgroup 2 at least ten working days in advance of all scheduled meetings.
37. Decisions will be reached by consensus. When consensus cannot be reached, the chair of Subgroup 2 shall present the different points of view to GRVA as required. The chair may seek guidance from GRVA as appropriate.
38. The progress of Subgroup 2 will be routinely reported to GRVA – wherever possible as an informal document and presented by the Chair or his representative.
39. All documents shall be distributed in digital format. Meeting documents should be made available to the Secretary for publication on the dedicated website.