

Automated Vehicle Testing Task-Force Subgroup 2: Road tests

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 allowing volume produced vehicles into the marketplace.
2. A Task-Force has been established under the auspices of the UN-ECE Working Party 29 (WP29) ITS-AD informal group. The Task-Force membership recognises 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. The Task-Force will therefore continue to include among its membership the widest possible constituency of contracting parties and associated/affiliated bodies, and aim to create a regulatory 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 Task-Force will investigate and propose ways to ensure the widest approach to the regulatory solutions and outcomes.

Objective

4. To develop a regulatory testing regime for tests on public roads that assesses a vehicle's automated systems so as to realise the potential road safety and associated benefits under real life traffic conditions.

Activities

5. At a high level, the Task-Force Subgroup 2 will develop procedures to assess road vehicles in traffic situations where:
 - a. Conditional driving automation is used,
 - b. High driving automation is used, and/or
 - c. Full driving automation is used.
6. The Task-Force 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

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

adequate measures are implemented within the vehicle to avoid incorrect use by the driver and/or vehicle occupants.

7. As a starting point the Task-Force Subgroup 2 will develop regulatory proposals based upon the following, indicative, test situations/test criteria and requirements:
 - a. On road test under appropriate real driving conditions,
 - b. A manufacturer's declaration.
8. The Task-Force Subgroup 2 will consider new approaches such as those utilising computer simulation or virtual testing techniques to complement the safety assessments while also potentially reducing the regulatory burden to manufacturers and approval/ certification bodies.
9. The Task-Force Subgroup 2 should take full account of existing data and research in developing its regulatory proposals. It may consider pre-existing standards (e.g. ISO, SAE and JSAE) and UN Regulations, and those from other territories in developing its proposals.

Working Criteria

10. The Task-Force Subgroup 2 recognises that there are three separate general traffic classifications of how a vehicle is used:
 1. Urban traffic;
 2. Inter-urban & rural traffic, and
 3. Motorway & highway traffic.

The Task-Force 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. For those cases where GRRF/ACSF has already started elaborating highway scenario's, Subgroup 2 will use this outcome as much as possible. However, if the workload of this approach is considered too great or the timescale too long, the Task-Force will submit a revised plan to deliver the outcome in 3 phases of activity.

11. Task-Force Subgroup 2 will develop road tests which demonstrate safe behaviour of the vehicle including safe responses to the environment as well as safe behaviour to other road users.
12. The road tests developed by Task-Force Subgroup 2 will take into account all traffic situations. Upon discretion of the responsible authority, it may be decided to replace certain road tests with the manufacturer's process evaluation, simulations and/or virtual testing (Task-Force Subgroup 1) in order to avoid unacceptable risks or practical obstructions.
13. The road tests developed by Task-Force Subgroup 2 will take into account the specific aspects of the automated functions, vehicle requirements from legislation, the vehicle category and the related traffic rules and required driver skills.
14. To the extent possible, the regulatory solutions and outcomes will be evidence-based, and established as performance requirements. The Task-Force Subgroup 2 will aim to provide justifications for the proposed requirements.

15. Recognising the rapid evolution of vehicle connectivity and cooperative ITS, the Task-Force Subgroup 2 will include consideration of these aspects in developing its proposals.
16. Consideration will be given as to how the vehicle will recognise its geo-location and the road traffic rules applicable at any point in time, including situations where the vehicle crosses National/State borders and/or boundaries.
17. Where any automated system engages/disengages during a journey the vehicle shall incorporate adequate means for the transfer of control to/from the driver, including appropriate human-machine interaction considerations.
18. As a general principle the Task-Force Subgroup 2 will seek to develop relevant adequate technical provisions to be used to assess a vehicle. Nonetheless, and only where absolutely necessary, the Task-Force Subgroup 2 may develop detailed requirements than to specify alternative approaches.
19. Recognising that the introduction of these new advanced systems could create new risks to vehicles while in-use, the Task-Force Subgroup 2 will consider whether it is possible to include measures to assist with in-service conformity assessments of these advanced systems throughout a vehicle's life.
20. In developing its proposals, the Task-Force Subgroup 2 will take into account the practical aspects of how the automated functionality will be used in real world conditions and consider whether, and if so how, provisions for monitoring the functionality of the system should be included.
21. The Task-Force 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 the Task-Force Subgroup 2 will aim to synchronise its meetings with other UNECE meetings to ease the travel burden on delegates.

Timescales

22. The Task-Force Subgroup 2 shall be remitted to work until December 2020.
23. Subject to the Task-Force Subgroup 2's activities, draft regulatory proposals should be submitted to the June 2020/181st Session of WP29.

Annex: Rules of Procedure...

Rules of Procedure

24. The Task-Force Subgroup 2 is a sub group of the ITS-AD informal group of WP29, and is open to all participants of WP29.
25. The Task-Force Subgroup 2 will appoint a chair and secretary and may create further sub-groups to deal with the technical issues and regulatory proposals. In so doing it will agree chairs and secretarial resources among its membership.
26. The official language of the Task-Force Subgroup 2 will be English.
27. All documents and/or proposals must be submitted to the Secretary of the Task-Force 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.
28. An agenda and related documents will be circulated to all members of the Task-Force Subgroup 2 at least ten days in advance of all scheduled meetings.
29. Decisions will be reached by consensus. When consensus cannot be reached, the chairman of the group shall present the different points of view to Task-Force AutoVeh, ITS-AD and WP29 as required. The chairman may seek guidance from those groups as appropriate.
30. The progress of the Task-Force Subgroup 2 will be routinely reported to the ITS-AD – wherever possible as an informal document and presented by the Chair or their representative.
31. All documents shall be distributed in digital format. Meeting documents should be made available to the Secretary for publication on the dedicated website.