

Report to WP.29 about results of the 10th meeting of Informal Group on Periodical Technical Inspections

The 10th IWG on PTI meeting was arranged with support of International motor vehicle inspection committee (CITA) and held on 7 February 2018 in Brussels (Belgium).

1. Consistency between the 1958 Geneva Agreement and the 1997 Vienna Agreement. The performance of vehicles, their equipment and systems in conditions other than tested in the regulated test procedures

The Group reviewed the draft proposals for modification of UN Regulations, attached to the 1958 Geneva Agreement, regarding provisions for periodical technical inspections. It was noted that UN Regulation 0 could include general provisions for PTI including:

- general description of the PTI scope, what needs to be covered or considered in each UN Regulation;
- the communication requirements need to be implemented mandatorily in each vehicle. If the ISO 20730 “Road vehicles. Vehicle roadworthiness interface for electronic Periodical Technical Inspection (ePTI)” standard will be successfully finalized 2018/2019, it should have a horizontal character and cover all single UN Regulations;
- it needs to be ensured, that all information necessary to develop test methods needs to be delivered by the OEM to the technical service (for verification) and PTI-bodies (for development and provision of PTI test methods);
- the DETA platform should have a horizontal character. The main focus for PTI should be on SW-Updates, checking the SW-versions and corresponding SW-integrity (checksums);
- OEM should provide recommendations for the verification.

Due to the complexity of the task, the work will be continued.

The Group discussed different approaches for realization of whole life vehicle compliance (WLVC). It was noted that general statements could be introduced in the 1958 Geneva Agreement, and may be as well in the 1997 Vienna Agreement. In that case the requirements for vehicles while in use have to be consistent with those for new vehicles, conformity of production and market surveillance. It may imply that PTI fall under those Agreements.

The importance of ensuring WLVC for vehicles equipped with automated/autonomous driving systems was underlined. Software of the vehicles, and specifically over the air updates of the software lead to a new situation where modification to functions and performance can easily be realized on large scale. This is an important difference with the traditional situation where a vehicle can be changed on individual basis at a specific location.

It can make fundamental impact on the scope of PTI and the 1997 Vienna Agreement, as these issues are related with maintaining performance in a broader sense. In frame of the 1958 Geneva Agreement the possibilities to use these new opportunities are studied, and it would make a lot of sense to use them under the 1997 Vienna Agreement. This is part of the overall change in automotive industry. It will

allow to provide new concept - continuous compliance of the vehicles. But it shall be taken into consideration that the impact is more severe than adding a specific technical issue. Aspects like cybersecurity are also required in vehicle inspection.

Another option to assess is to introduce the requirements for new vehicles to facilitate the checking of their compliance once in use in a non-mandatory document, like the Consolidated Resolution R.E.3.

The group agreed to define the following priorities:

- emissions, since tampering is an important issue and they already have provisions for in-use compliance: i.e. OBD and type 2 tests;
- braking, since there are too provisions for in-use compliance; in this case the reference braking forces
- steering, since UN Regulation mentions whole-life compliance but does not give the details;
- approval marking in general, since an important part of the in-use compliance schemes rely on that.

The group also agreed that it is essential to have the cooperation of vehicle manufacturers, since they are the source of most of required information.

2. Development of inspection techniques against tampering practices

Following the request of WP.29 the Group continued discussion on tampering.

It was concluded that by definition, tampering is not only a technical but a behavioural issue, therefore it cannot be envisaged a single tool to detect all tampering possibilities.

Some countries assess tampering impact on their roads. There is not yet precise data to estimate related risks and develop cost effective measures.

CITA informed that by the end of April, 2018 the results of its working group on Emissions tampering will be available. Their findings could assist to develop technical strategies on tampering.

The involvement of OEMs is essential to fight against tampering, producing designs more tampering-proof. The Group considers that the collaboration between OEMs, type approval authorities and vehicle inspection is the only way to cope with tampering issues.

The Group noted the necessity to reinforce the frame for legal enforcement, like in the case of tachographs where the trade of tampering tools and the manipulation of devices is punished by law.

3. The updated Terms of Reference

At it's the 173^d session WP.29 noted that the mandate of the IWG on PTI was about to expire and agreed to extend the mandate of the Group by two years. The Group proposed to present the updated terms of reference at the March 2018 session of WP.29. The priority issues to be treated by the Group and WP.29 were reviewed. It was noted that software of the vehicles, and specifically over the air updates of the software lead to a new situation where modification to functions and performance can easily be realized on large scale. This is an important difference with the traditional situation where a vehicle can be changed on individual basis at a specific location. Malfunction of, or tampering with, engine management systems, catalytic converters and related technologies that are significantly reducing emission levels result in higher emissions and the loss of the benefits of the vehicle emission regulations. This increased reliance on advanced technology requires future options for roadworthiness enforcement to be developed by the Informal Working Group on Periodical Technical Inspections (IWG on PTI). The Group proposed for approval of WP.29 the following working items to be covered:

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- measures to ensure in-service conformity of vehicles or their systems and components type approved under the UN Regulations, attached to the 1958 Geneva Agreement;
 - measures to detect tampering: methods and supervision;
 - proposals for establishment of requirements for the performance of vehicles, their equipment and systems including automated/autonomous driving systems in all the relevant driving conditions outside of type approval testing boundaries, including recommendations for methods of assessment;
 - consistency between the provisions of the 1968 Vienna Convention and the technical provisions for vehicles against the rules in the framework of the 1997 Vienna Agreement;
 - solutions in the PTI field to support the safe operation of highly automated and autonomous vehicles
 - guidance for road-side technical inspections and enforcement;
 - guidance for education and attestation of experts implementing PTI, supervision for PTI quality and supervision of testing centers;
 - uniform provisions for periodical technical inspections of wheeled agricultural and forestry tractors with regard to their roadworthiness.

The draft ToR has been submitted to WP.29 for approval at it's the 174th session.