**Draft Terms of Reference of the Informal Working Group on**

**Periodical Technical Inspections (IWG on PTI)**

**OICA comments to informal document WP.29-174-07**

OICA comment:

Generally, the PTI informal group should deal with the rules of the 97 agreement, i.e. items related to the PTI test methods, tools, training of inspectors etc. This is their area of competence. The responsibility of amending the type approval regulations must be left to each relevant GR, where the technical experts are.

The task of the PTI informal group is not to define the technical requirements applicable to vehicles and the data to be provided by vehicle manufacturers to third parties: this task must be left to the GR experts and their relevant informal groups, for obvious reasons of technical competence, limited resources (no single government or organisation can afford contributing to the PTI activities with experts from a variety of UN Regulations of the 58 agreement) and organisation (duplication of work).

The process should be that GRs define technical requirements applicable to vehicles, and at the same time principles of methodology for PTI checks (when relevant), with contribution from PTI experts. The task of the PTI IWG should then be to implement these principles in the rules of the 97 agreement.

1. **Introduction**

The digitalisation of mobility creates new requirements to be met by vehicle safety and infrastructure. Connected vehicles are designed to allow a wireless connection or communication possibly relating to automated driving technologies with external devices, cars, networks or services.

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) taking into consideration:

* a shift towards sustainability of transport systems, where all aspects of vehicle use need to be considered, including safety, the environment, mobility, efficiency, productivity and personal security;
* the major advances in vehicle technology that are leading to safer, more environmentally sustainable vehicles;
* the increased complexity of vehicles and the need for them to be properly maintained throughout their life;
* the opportunities afforded by advanced on-board and off-board measurement systems to reduce the cost of compliance;
* increased public expectations that their vehicle will get them to their destination safely and reliably.
* Development of future options for roadworthiness enforcement requires particular attention to:
* 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;
OICA comment:

See below

* ~~requirements for the performance of systems and components including automated/autonomous driving systems in all the relevant driving conditions outside of type approval testing boundaries;~~OICA comment:

This point should be deleted, as explained here below

* application of new intelligent transport system (ITS) technologies in the field of PTI;
* current roadworthiness standards and practices;
* diagnostic, measurement and communication technologies;
* access to the technical specifications of each individual vehicle and the data needed for verification of the functionality of safety and environment-related components;
OICA comment:

See below

* all forms of vehicle assessment, including periodic technical inspection and roadside inspection;
* the effect of vehicle roadworthiness enforcement on road safety, environmental protection and other outcomes.
1. **Working items to be covered**
2. 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

The need for roadworthiness enforcement is greater than ever because road safety and environmental protection are now more reliant on the correct functioning of technologies. The role of PTI needs to encompass the preservation of the benefits of the new technologies and systems. There shall be provided the appropriate coordination between the 1958 Geneva Agreement and the 1997 Vienna Agreement and 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.

OICA comment:

The role of PTI is not to ensure in-service conformity of vehicles, but to ensure roadworthiness of vehicles and to verify that vehicles in use are properly maintained and serviced to ensure they retain the necessary safety and environmental performance on the road.

PTI cannot be a “periodic type approval of vehicles”, and care must be taken to make a clear distinction between type approval regulations and in-service verification of the roadworthiness. The type approval regulations and their potential link with PTI measurement methods must remain under the responsibility of the GR working parties operating under the umbrella of WP.29.
Type approval regulations developed by the respective GR working parties may indeed foresee technical means to enable PTI assessment of the safety and environmental performance of vehicles in use, and this should allow PTI fulfil its role at a reasonable cost, well balanced with the expected safety and environmental benefits.

1. Measures to detect tampering: methods and supervision

The ways to identify tampering of safety and environment related components and systems have to be considered, including but not limited to, the following:

* further development of inspection techniques;
* the version and integrity of the software, since almost all tampering practices also involve software modification;
* access to sensors’ reading to check their plausibility; and
* access to actuators to check different working modes of the vehicle.

OICA comment:

Especially the issue of "software modification" is clearly the task of the UN Task Force on Cyber Security and Over The Air updates, which for example is defining a SW Identification for the purpose of being able to know whether the software installed in a vehicle is covered by a valid approval or not.

The proposal to consider “access to sensors’ reading to check their plausibility; and "access to actuators to check different working modes of the vehicle" is completely unacceptable for several major reasons:

* + Providing to third parties all information to permit reading sensors or system internal data, overwriting actuators or data parameters is clearly counter-productive regarding the risks of cyber-attacks on vehicles: sensitive information to hack systems would be spread “everywhere”, out of control of the vehicle manufacturer. Additionally, it raises the questions of personal data of vehicle owners and of property rights of the companies which developed the diagnostic interfaces.
	+ When it comes to the control of actuators, OICA’s position is that such an approach is not sufficiently mature today to be implemented and creates risks of wrong implementation leading to potential liability and safety issues if systems are damaged (for example, there is a high risk of damaging brakes of commercial vehicles in case a brake cylinder would be actuated while the park brake is applied.

OICA consequently suggests an in-depth discussion on the issue of measures to detect tampering, in order to avoid duplication and likely contradiction with other WP.29 activities and to properly define the goals.

1. ~~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~~

~~There is inherent risk that some systems, especially those relying on software, may be designed to work only in the limited conditions corresponding to those tested rather than in all the relevant driving conditions. The IWG should develop proposals for establishment of requirements for the performance of equipment and systems, including automated/autonomous driving systems, in all the relevant driving conditions other than those tested, as well as methods for their assessment.~~

OICA comment:

This is clearly not a task for PTI IWG. These issues must be dealt in the type approval regulations, with proper requirements and test methods to ensure the approved vehicle is performing according to the required performance over the complete range. This issue is also clearly an item for the new group about to start under the umbrella of ITS/AD on certification of AVs (in charge of defining new methods to type approve Automated Vehicles, with concepts like “real world driving”, “use of simulations”, “audit approach” etc.). This is obviously a task too wide for the PTI group.

OICA consequently strongly suggests deleting this point.

1. 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

Requirements for periodical technical inspection are prescribed by UN legal acts, including the 1968 Vienna Convention on road traffic, the 1997 Vienna Agreement and the UN Consolidated Resolution R.E.1. Harmonization of these legal acts allows to improve safety and sustainability of road transport and exclude legislative obstacles for technological developments.

OICA comment:

The target of this task should be clarified. Indeed, neither the 1968 VC nor 1997 rules define “technical provisions”, which is the task of type approval regulations. At most, the task of the IWG in this respect should be harmonise, where necessary and possible, the rules for periodical technical inspections among the various Agreements, Conventions and Resolutions.

1. Solutions in the PTI field to support the safe operation of highly automated and autonomous vehicles

WP.29 will develop an approach for the approval of automated driving systems (ADS). It is a complex problem covering technical inspections of the systems in use. The IWG on PTI should follow the development on ITS and propose pragmatic and effective solutions in the PTI field needed to support the safe operation of highly automated and autonomous vehicles. The solution should be achieved through a pragmatic way that on one hand leaves controlled flexibility for industry and on the other hand defines reasonable requirements/principles to ensure a safe operation of ADS.

OICA comment:

Here again, the target of this task should be clarified. Generally speaking, the task of WP.29 in this case is indeed to develop an approach for the approval of automated driving systems, on the other hand, the PTI IWG's competence lies with test methods for vehicles in use, tools, training of inspectors, etc. as already explained in the introductory comment. OICA believes that the respective roles should not be mixed up, even though the expertise of the PTI IWG will be useful.

1. Guidance for road-side technical inspections and enforcement

A range of measures is required that encourage continuous ~~compliance~~ **roadworthiness** including the use of targeted enforcement, incentives and disincentives and user education and training. Roadside inspection is a form of vehicle assessment that makes considerable contribution towards achieving continuous ~~compliance~~ **maintenance and roadworthiness**.

OICA comment:

Here again, issues of compliance are to be seen in the framework of regulations on the certification of vehicles and these are within the remit of WP.29 and its GR expert groups.
Issues of roadworthiness, incentives/disincentives, user education and training are a separate issue.

1. Guidance for education and attestation of experts implementing PTI, supervision for PTI quality and supervision of testing centers

The item should be put into the agenda to be considered when requested.

1. Uniform provisions for periodical technical inspections of wheeled agricultural and forestry tractors with regard to their roadworthiness

The item should be put into the agenda to be considered when requested.

1. Others

(i) Consideration of guidance regarding PTI when requested to WP29 by GRs

(ii) Exchange of views and information from each Contracting Party about the most advanced technology, equipment and methods, including, such as research results including field tests, information on the national legal system and measures, events, conventions, etc.

(iii) Exchange of views and information on PTI will also be taken forward. This latter activity might be concurrent with above discussion on PTI.

(iv) Necessary discussion will be made at appropriate terms.

(v) Consider further items to be treated by the IWG or the WP.29.

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