

Framework Document on Vehicle Whole-Life Compliance submitted by the Co-Chairs of the Informal Working Group on Periodical Technical Inspection

The text reproduced below was prepared by the Informal Working Group on Periodical Technical Inspection and presented to the World Forum for Harmonization of Vehicle Regulations (WP.29) at its 187th session on the basis of an informal document (WP.29-187-22). WP.29 requested the secretariat to distribute the document with an official symbol for this session (ECE/TRANS/WP.29/1166, para. 165-166). The document below contains proposals to correct original ECE/TRANS/WP.29/2022/145 in accordance with notes highlighted by CLEPA, OICA and other organisations. The proposals are deemed in bold or strikethrough text.

I. Purpose

1. This framework document's primary purpose is to provide guidance for the World Forum for Harmonization of Vehicle Regulations (WP.29) and its subsidiary Working Parties (GRs) to coordinate **the evaluation of harmonised conditions for the assessment of performances of vehicles, equipment and parts along** different stages of ~~the~~ **their** legal life ~~of vehicles, equipment and parts~~. **After their registration, vehicles need maintenance and need to be controlled during the various stages of their lifetime in order to verify their roadworthiness and/or their compliance to ~~any existing~~ various legal requirements for vehicles in use that may exist in different Contracting Parties. Vehicle requirements, when they are developed at GR level under the framework of the 1958 or 1998 Agreements, should where necessary consider these aspects in order to enable easy and efficient verifications on vehicles in use. ~~The whole of the various aspects related to the requirements to vehicles is called whole life compliance. The level of safety and environmental performance may vary at different stages of whole life compliance.~~**

II. Definition

2. For the purposes of this Framework document, unless specified otherwise therein:
- (a) The "*Conformity of Production*" procedure aims to ensure that each produced wheeled vehicle, equipment or part is in conformity with the approved type¹
 - (b) "*In-service Conformity*" is the procedure for demonstrating the compliance of vehicles on the road operated over their normal driving patterns, conditions and payloads to the relevant UN Regulations.
 - (c) "*Road-side inspection*" means an unexpected technical inspection of the roadworthiness of a vehicle carried out by the competent authorities of a Contracting Party or under their direct supervision.
 - (d) "*Stage of whole-life compliance*" means each one of the arrangements to demonstrate that vehicles fulfil some requirements in a given moment of their life. The current stages of whole-life compliance defined in the 1958 and 1998 Geneva Agreements and the 1997 Vienna Agreement are Type Approval, Conformity of Production, In-Service Conformity, Periodical Technical Inspection and Road-Side Inspection.
 - (e) "*Technical Inspection*" means the periodical uniform inspection of any equipment and parts which are used on wheeled vehicles and whose characteristics have a bearing on road safety, protection of the environment and energy saving.²

¹ E/ECE/TRANS/505/Rev.3

(f) "*Type approval*" means an administrative procedure by which the approval authorities of one Contracting Party declare, after carrying out the required verifications that a type of vehicle, equipment or part submitted by the manufacturer conforms to the requirements of the given UN Regulation. Afterwards the manufacturer certifies that each vehicle, equipment or parts put on the market were produced to be identical with the approved product.³

(g) "*Whole-life compliance*" means the ensemble of stages in which vehicles shall fulfil certain requirements.

III. Safety and Environmental Vision

3. Vehicles degrade over the time as is the case for any product, and it is necessary to assess the impact of degradations, breakdowns, tampering, wear and other events that may impact vehicle's performances. Those performances have been traditionally related to road safety and environmental protection and energy saving; new technologies oblige to have an open approach to incorporate new aspects like cybersecurity or personal data protection.

4. The Type Approval shall, as one of the stages of whole-life compliance, facilitate those performances are reasonably preserved during vehicles' life and hence shall consider other stages of whole-life compliance.

5. The whole-life compliance vision, altogether, is necessary to define the appropriate provisions to ensure that the performance of vehicles, throughout their use, fulfils the legal requirements applicable at each stage and can be impartially assessed.

6. The assurance of whole-life vehicle compliance is made up by different approach with different level of responsibility depending on each of the stakeholders.

7. Vehicles in use technical conditions shall not cause any traffic accidents resulting in injury or death that are reasonably foreseeable and preventable, shall resist cyberattacks and shall be environmentally consistent with their Type Approvals.

IV. Working principles

8. The coordination of technical provisions and/or guidance and resolutions for whole-life compliance of the vehicles shall be conducted by WP.29 within the context of the 1958 and 1998 Geneva Agreements and the 1997 Vienna Agreement.

9. The technical provisions and guidance resolutions for whole-life compliance of the vehicles will be performance-based and not-design restrictive, founded on the current state-of-the-art while keeping an open framework to include future innovation.

10. They shall take into account existing legislation, standards and guidelines of the Contracting Parties and standardization bodies as well as previous work and reference documents agreed in UNECE.

11. Implementation of the technical provisions through the identified work priorities at the level of Informal Working Group on Periodical Technical Inspection (IWG on PTI) and other GRs will aim at developing technical requirements which may take the form of regulatory or non-regulatory instruments (e.g., guidelines, recommendations, UN Resolutions, UN Regulations, UN Global Technical Regulations, UN Rules) as agreed and accepted by the Contracting Parties.

Coherence in the work done by WP.29 should be ensured to avoid duplication of work and proliferation of regulatory requirements.

² ECE/TRANS/WP.29/2020/38

³ E/ECE/TRANS/505/Rev.3

12. This document shall be approved and managed by WP.29 as specific work items are expected to be prepared in multiple GRs and the IWG on PTI with extensive cross-coordination between them.

V. Whole-life compliance principles

13. The following list of topics is intended to guide discussions and activities on whole-life compliance assessment within WP.29 and each of its relevant subsidiary bodies. The aim is to capture the shared interests and concerns of regulatory authorities, provide the general parameters for the work, and assist with common definitions and guidance within WP.29 and interested stakeholders.

14. This document seeks to create the framework to help deliver safe, clean and secure vehicles and promote collaboration and communication amongst those involved in their development and oversight.

15. The following is a list of whole-life compliance principles, having in mind the statement of item 5 of this document. It is expected these would form the basis for further development within WP.29 and its subsidiary bodies:

(a) The relevant aspects of vehicle use need to be considered, including safety, the environment and security;

(b) In a realistic scenario, and even more with the most evolved technologies, it appears necessary to define provisions for the different stages to ensure whole-life compliance in coordination with the type approval process;

(c) The opportunities created by new technologies need to be considered to increase the efficiency and reduce the cost of whole-life compliance;

(d) The whole-life compliance framework shall provide the necessary transparency to facilitate the acceptance of new technologies by the users;

(e) The stages of whole-life compliance shall be coordinated, whereas their scopes, methods, thresholds and other parameters may differ;

(f) When necessary, relevant requirements to check the performance of vehicles, systems and components shall be developed according to the corresponding stages of whole-life compliance;

(g) Contracting Parties ~~and the bodies performing an authoritative task under governmental control~~ shall have the appropriate access to the technical specifications of each individual vehicle and the data needed for objective verification of the performances at any of the stages of the whole-life compliance.

The data and information requested shall be limited to what is necessary to objectively and properly perform the verification tests. The general principles of confidentiality and intellectual property (IP) protection shall be respected; and,

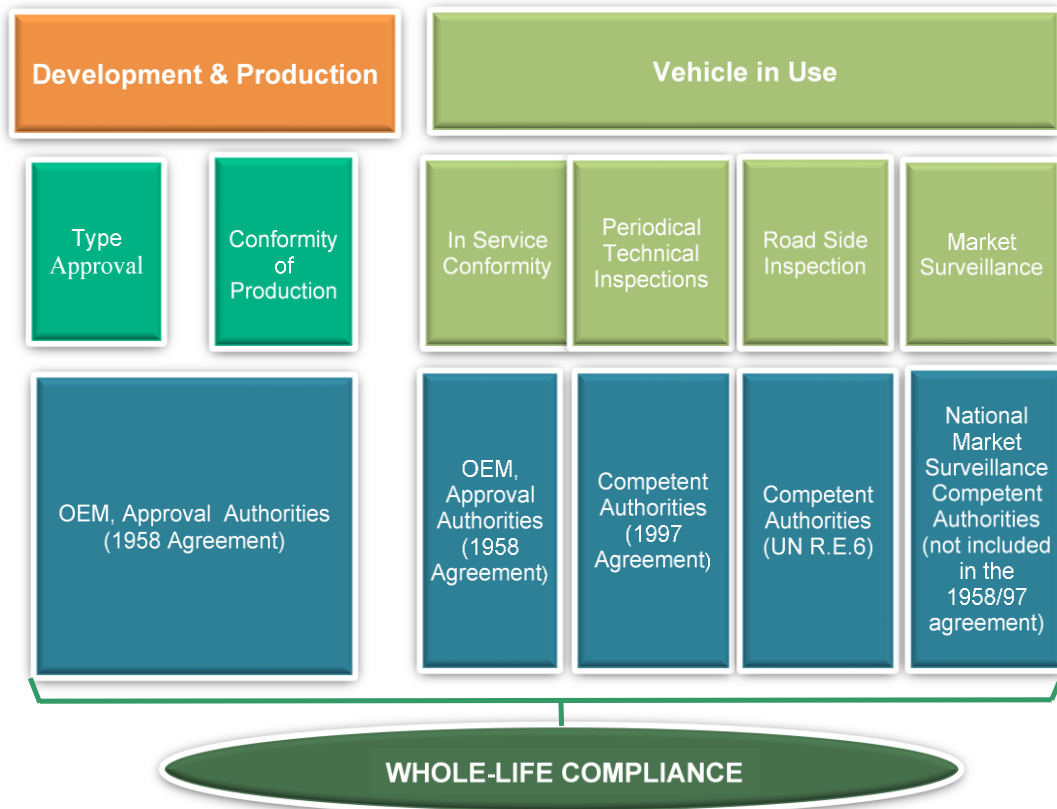
~~(h) Whole-life compliance shall take advantage of existing and new technologies; and,~~

(i) (h) Vehicle design shall allow impartial assessment of whole-life compliance stages.

VI. The whole-life compliance approach

16. The whole-life compliance approach shows the necessary stages to better ensure the vehicles' performance, reasonably, during their whole life. Figure 1 below shows various stages of whole-life compliance.

Figure 1
Stages of whole-life compliance



The main tool to assess the convenience of stages of whole-life compliance, like the addition of market surveillance, geofencing, retrofit or recall campaigns, is the risk analysis described later. The risk analysis approach is also a valid framework to liaise the different stages of whole-life compliance.

17. The risk analysis consists of assessing the possibilities of noncompliance and their impacts. In essence, Figure 2 shows the rationale.

18. Once followed the path described, a better rationale will be available to consider the necessity:

- (a) To check of vehicle, its parts and equipment during the life of the vehicle;
- (b) To foresee any kind of provision required during the Type Approval;
- (c) To provide Contracting Parties ~~and the bodies performing an authoritative task under governmental control~~ with data and system access for an impartial assessment.

19. The requirements to fulfil at each stage of whole-life compliance shall be coordinated with those of the Type Approval. **They shall be intended to assess whether the respective parts, components and systems of the vehicle maintain a satisfactory level of safety and environmental characteristics in comparison to those required at the time of approval, or retrofit.**

This should not create new legal obligations that contradict those defined in the scope of vehicles, components and systems Type-Approval.

It shall also be ensured that the requirements would not induce the implementation of new feature updates in addition to those necessary at the date of the vehicle type approval, e.g. in line with the “repair as produced principle”.

The requirements shall take into account any original and non-original replacement part that are legally intended for the fitment on that vehicle and that maintain the

safety or environmental performances within a reasonable tolerance from the performance level of the vehicle at the time of its approval, or retrofit.

20. The stages of whole-life compliance and their relationships shall be designed in such a way as to reasonably facilitate each others' objectives and provide information and data to Contracting Parties ~~and the bodies performing an authoritative task under governmental control~~ when appropriate.

21. Performances may be verified by methods different from those prescribed in the relevant UN Regulations, Global Technical Regulations, Rules and other relevant UN ECE documents.

22. The stages of whole-life compliance may include legal requirements different ~~than~~ **from but not contradicting** those defined in the scope of vehicle **Type Approval**.

Figure 2

The approach for assessing the possibilities of noncompliance and their impacts

