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STRENGTHENING THE ROAD SAFETY ASPECTS OF THE EU ROADWORTHINESS PACKAGE



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GENERAL REMARKS

Roadworthiness testing is part of a wider regulatory scheme, governing vehicles throughout their lifetime. This scheme covers vehicle type- or individual approval, performed before the vehicle is permitted to enter the single market via registration, its use on the roads, and until it is considered as an "end-of-life vehicle" and scrapped or exported.

During the type- or individual approval, compliance with the current highest level of safety and emission requirements must be secured before the vehicle gets an authorisation to be used on public roads.

The goal of roadworthiness testing is then to check the functionality of safety components, the environmental performance, and the vehicle safety requirements. New technologies in road transport are increasingly based on IT and communications, which raises issues related to the consistency of vehicle IT systems. Consequently, cybersecurity must be in the focus of road transport policies, too.

EU regulations and directives provide for a comprehensive list of requirements for road safety and the emission behaviour of new vehicles. However, since relevant components of vehicles during their service life continuously deteriorate, it is necessary to carry out periodic vehicle inspections in Europe, adapted to the level of susceptibility of use, in order to ensure long-term road safety and low emissions.

When assessing road safety in the implementation report of the Roadworthiness Package,¹ different road traffic conditions and the related increased risk to road safety in the individual Member States must be taken into account.

PERIODIC TECHNICAL INSPECTION DIRECTIVE 2014/45/EU

MAKING PROGRESS IN THE HARMONISATION OF THE SINGLE MARKET RULES

The latest review of the Roadworthiness Package has already led to a partial harmonisation of vehicle inspection rules across the EU Member States. Yet, there are still certain discrepancies in the way States have implemented the Directives into their national legal systems (status of inspection centres, testing tools, provision of relevant PTI data, etc.).

In order to ensure better consistency of laws, standards and practices within the EU, it would be useful to consider an increase of the minimum level of harmonisation in the upcoming review of the Roadworthiness Package.

This would result in an overall improvement in vehicle inspection and allow Member States to improve their systems individually.

¹ Implementation report on the road safety aspects of the Roadworthiness Package;
[https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=&reference=2019/2205\(INI\)](https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=&reference=2019/2205(INI))



REQUIREMENTS FOR THE QUALIFICATION (QUALITY) OF INSPECTORS

Automotive engineering is subject to rapid technical progress, which is particularly influenced by the use of electronics and alternative driving concepts.

Higher technical challenges for vehicle inspection require high quality standards, especially for inspectors and inspection organizations. The latter should use generic tools and methods defined at EU level, allowing each inspector to perform the tests. An additional training may be requested to master these tools and methods. This must be considered when determining the expected preliminary and advanced training of the inspectors. Moreover, regular additional training for vehicle inspectors will be required, in addition to constant quality monitoring.

It is crucial that roadworthiness testing is carried out by well-educated, trained and independent inspectors. It is proposed to strengthen the independency of inspectors as well as to further eliminate potential conflicts of interest.

PREVENTING CONFLICTS OF INTEREST OF INSPECTORS

An objective vehicle inspection requires the independence of inspectors and inspection organizations from the vehicle trade, maintenance, and repair to avoid any financial conflict of interest. Therefore, the persons (and their organizations in the broad sense) entrusted with the performance of regular vehicle inspection must not be involved in the manufacturing, trade, leasing, maintenance or repair of vehicles and vehicle parts. This "strict" regulation guarantees the independence of vehicle inspection and "the necessary confidence of vehicle owners in correct vehicle inspection".

TESTING NEW CATEGORIES OF VEHICLES

Since one of the primary goals of roadworthiness tests is to ensure road safety, it is not logical that certain categories of vehicles are inspected periodically, while others are excluded from this obligation. As CITA has already concluded in its 2019 [study](#),² mandatory inspections of two-, three-wheelers, and light trailers would have a positive cost-benefit impact. Considering that the European motorcycle fleet consists of 24.7 million of units, many lives could be saved by inspecting additional categories of vehicles.

Therefore, CITA proposes a complete inspection, regardless of the engine and power limitations, for the following categories of vehicles:

Inspection of two- and three-wheelers:

- Mopeds: 1st inspection after 3 years, subsequent inspections every 2 years.
- Motorcycles: 1st inspection after 4 years, subsequent inspections every 2 years.

Inspection of light trailers:

- 1st inspection after 4 years, subsequent inspections every 2 years.

² Study on the inclusion of light trailers and two- or three-wheel vehicles in the scope of the periodic roadworthiness testing, February 2019



INCREASING THE FREQUENCY OF TESTING FOR VEHICLES USED IN SHARED MOBILITY, PUBLIC TRANSPORT, AND OLD VEHICLES

Directive 2014/45 already provides for more frequent inspections of taxis or ambulances. With the growth of shared mobility and the use of individual vehicles for public transport purposes, the frequency of inspections on these vehicles should likewise increase. Therefore, CITA proposes to subject these M1 and N1 vehicles to a roadworthiness test one year after the initial registration date of the vehicle and then annually thereafter. The same frequency of testing could also be extended to L-category vehicles used in the context of shared mobility or public transport.

As the average age of the vehicle fleet in Europe is continuously increasing (almost 12 years), the percentage of old vehicles is growing. As vehicle age, major defects become more frequent. Therefore, CITA proposes an annual inspection for all vehicles older than 12 years.

MANDATORY INSPECTION OF FUNCTIONALITY AND EFFECTIVENESS OF ADVANCED DRIVING ASSISTANCE SYSTEMS (ADAS)

Under the new General Safety Regulation (EU) 2019/2144, motor vehicles will have to be equipped with safety features, such as intelligent speed assistance, driver drowsiness and attention warning systems, and many others.

To ensure road safety, during the periodic technical inspection, it must be possible to detect any damage or manipulation of these safety-relevant systems over the entire vehicle life cycle. Hence, periodically and after the repair of a heavily damaged vehicle, a technical inspection shall be mandatory to guarantee full functionality of ADAS and to identify any potential changes made to the safety components.

Essentially, it is no longer sufficient to simply verify the system installation and analyse tell-tales or electronic status bits. Rather, test procedures must allow functionality to be evaluated.

The focus should be to inspect the in-vehicle technologies/systems regarding conformity, effectiveness and damages using the benefits of system self-diagnostics plus relevant additional PTI scopes.

Additionally, a requirement should be defined to enable the testability of installed systems e.g. via standardized interfaces (e.g. ePTI). Manufacturers should be required to provide the authorities with sufficient access for periodic system inspections.

CITA RECOMMENDS TO ADD ECALL – EMERGENCY CALL SYSTEMS IN THE PERIODIC ROADWORTHINESS TESTING OF MOTOR VEHICLES

The eCall is the emergency call system mandatory since 2018, with the aim of reducing the rescue time in case of crash. Since relevant components may degrade over time and may be subject to tampering, it is advisable to assess the proper functioning of eCall systems throughout the life of the vehicle.



Therefore, CITA proposes to include eCall in the scope of periodic technical inspection and test it via the electronic vehicle interface.

This implies the modification of the Annex 1 of Directive 2014/45/EU.³

CONNECTED AND AUTOMATED VEHICLES UNDER TECHNICAL INSPECTION

A comprehensive roadworthiness framework must ensure that automated vehicles are regularly tested to evaluate safety performance. While some stakeholders claim that a system self-diagnosis is an essential method to increase the safety of the vehicle, a system self-diagnosis cannot replace an impartial PTI and a physical inspection. Conversely, testing the self-diagnosis itself must be part of a PTI to ensure that the vehicle is still able to recognize its odd boundaries.

Evidentially, software is increasingly becoming a key component of a vehicle safety and environmental relevant systems as well as for automated driving functionalities. Hence, CITA is committed to ensuring that future verification of software integrity during periodic technical inspections is implemented during the development and revision of international and European vehicle type-approval regulations.

Vehicle software must already be clearly identified during the type-approval by a standardised and harmonised procedure so that changes to the vehicle software through legal updates or illegal manipulations in the vehicle life cycle can be clearly identified during the PTI.

FIGHT AGAINST MANIPULATION AND CYBERATTACKS

New technologies in road transport are increasingly based on IT and communications, which raises issues related to the consistency of vehicle IT systems. These include the modification of software for tampering purposes or the theft of cars through interference with communications.

Moreover, new vehicles generate a big amount of data, many of which are personal, the use of which must be well-defined and protected.

To add on, current technologies allow vehicle software to be modified over-the-air, thus constantly changing the performance of the cars. These variations may be very positive when under control, but if the software is mismanaged, it can create serious challenges for road safety, transport security, and environmental protection.

To ensure cybersecurity, the regulatory framework must allow appropriate stakeholders to verify that vehicles are using approved software with the right version. The EU type-approval legislation already foresees adoption of an implementing act prescribing technical specifications for vehicle cybersecurity. This must, consequently, be reflected in the roadworthiness tests.

³ See more details in the EU-Commission study on the inclusion of eCall in the periodic roadworthiness testing of motor vehicles: <https://op.europa.eu/en/publication-detail/-/publication/c6524bd7-2b54-11e9-8d04-01aa75ed71a1>



ACCESS TO DATA AND SOFTWARE-UPDATES TO APPROVAL RELEVANT COMPONENTS OF THE VEHICLE

In order to further develop inspection and assessment procedures for modern vehicles throughout their entire life cycle, technical inspection companies need non-discriminatory and independent access to the original data of modern vehicles. Both at the testing station and by means of digital remote access via wireless interfaces.

Since 2007, access to vehicle data has been regulated in the special EU vehicle type-approval Regulation EC/715/2007. It remains crucial that the provisions of this Regulation are unrestricted and applied in the national legal systems. In order to take account of the increasing use of connectivity (3G-4G etc.) in vehicles, this legislation now needs to be urgently adapted to the state of the art. Indeed, access to vehicle data for diagnosis, testing and inspection of engine management and exhaust gas purification systems and road safety-relevant systems via wireless interfaces has so far not been covered by the Regulation.⁴

INDEPENDENT INSPECTION OF ROAD/TRAFFIC INFRASTRUCTURE FOR CCAM – COOPERATIVE, CONNECTED AUTOMATED MOBILITY

Highly automated and connected driving will mean that periodic vehicle inspections will have to extend not only to the vehicle but also to the connected traffic infrastructure.

Data security and data protection of vehicles as well as the safety-relevant functionalities of the traffic infrastructure must be included in the test catalogue for independent third-party inspection.

ROADSIDE-INSPECTION DIRECTIVE 2014/47/EU

RECOMMENDATION: SPECIFICATION OF LOAD SECURING

Annex V to Directive 2014/47/EU includes requirements for load securing. As neither examiners according to 2014/47/EU nor examiners according to Directive 2014/45/EU are qualified for this, the requirement needs to be further specified.

This does not represent an issue regarding the periodic technical inspection, as the cargo is not part of the test.

In the surveillance institutions in Germany, we are currently training inspectors who are qualified to provide expert opinions on departure checks for heavy goods transports of more than 100 tons. They then also have special knowledge about load securing that was not previously part of the training.

The national implementation of Directive 2014/47/EU in Germany is, however, rather problematic, as repair shops are also allowed to conduct detailed tests,

⁴ See more detail in the EC's communication on a European strategy for data:
https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf



which are neither qualified for all the test points of Directive 2014/47/EU nor for checking load securing.

REGISTRATION DOCUMENTS 2014/46

RECOMMENDATION: DATA EXCHANGE TO MAKE APPROVAL RELEVANT SOFTWARE UPDATES POSSIBLE

In order to be able to apply an approval granted for a software update to vehicles already in use, various conditions must be created in the vehicle registration documentation. CITA proposes the following requirements as mandatory:

- Definition of a 'feature of approval' in the list of mandatory data in the registration certificate (Annex I). This shall allow the determination of whether there are any changes to the vehicle which are relevant for type-approval.
- Obligation of the Member States to report all additional data used in the authorization so that changes in the data due to software updates can be addressed and tracked.
- No physical document shall be issued for a new admission or readmission or, where appropriate, only a note from the file on the data chip or printout.
- Removal of the obligation for the driver to carry the registration certificate Part I, if the data are already recorded electronically, or removal of a physical registration certificate.
- Possibility of access to registration data by authorities and bodies entrusted with official responsibilities, even if the vehicle is registered in another Member State (for defined purposes e.g. traffic supervision, registration, technical inspection according to Directive 2014/45/EU, etc.).

CITA, the International Motor Vehicle Inspection Committee, is the worldwide not-for-profit association of governmental agencies and authorised private companies active on vehicle compliance.

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