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## Economic Commission for Europe

### Inland Transport Committee

#### Seventy-ninth session

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Item 5 (b) of the provisional agenda

#### Strategic questions of a modal and thematic nature:

#### Harmonization of vehicle regulations

## Latest Developments in Vehicle Regulations

### Note by the secretariat

#### *Summary*

The work within the World Forum for Harmonization of Vehicle Regulations (WP.29) continued to strengthen vehicle safety and environmental protection resulting in numerous new and amended vehicle regulations and rules under the 1958, 1997 and the 1998 Agreement.

Important topics were related to the implementation of automated / autonomous driving function requirements into the regulatory framework including related elements like cyber-security and data protection, the Revision 3 of the 1958 Agreement including the setting up of a type-approval database, the Database for the Exchange of Type Approval (DETA), at UNECE, reinforcing implementation of the 1998 Agreement and revival of periodic technical inspections (PTI) under the 1997 Agreement.

The Inland Transport Committee (ITC) **is invited** to:

- **Endorse** the activities listed in this document;
- **Reiterate** support for hosting DETA at UNECE;
- **Request** financing of DETA under UN budget and
- **Call** on support by the member States during the Programme Budgetary Implications (PBI) process.

## I. Strengthening vehicle safety and environmental protection

1. In 2016, three new United Nations Vehicle Regulations<sup>1</sup> which improve vehicle safety and environmental performance entered into force and five new UN Regulations were adopted. A listing of these new UN Regulations is provided in the annex.
2. As a result of the simplification of UN Regulations on lighting and light signalling WP.29 adopted Resolution R.E.5 on light sources as a first step. This Resolution consolidates all requirements for light sources that had previously been covered in three different UN Regulations and thus provides for a single source.
3. Existing UN Regulations were also updated with eighty-nine amendments which adapt the Regulations to recent technological innovations and which introduce more stringent requirements aimed at increasing both the safety and environmental performance of vehicles. Among these, WP.29 adopted in June 2016, an amendment to UN Regulation No. 127 Enhanced Child Restraint Systems (ECRS), of the 1958 Agreement, which introduces the concept of non-integral ECRS allowing for the use of in-vehicle restraint systems (safety belts) together with an ECRS by safeguarding enhanced protection for the child.
4. In November 2016, WP.29 concluded several years of work on two new and one amendment to Global Technical Regulations (GTR) by their adoption. A listing of these GTRs is provided in the annex.

## II. Towards automated / autonomous vehicles

5. Also in 2016, WP.29 continued its activities to develop performance requirements for intelligent vehicle systems and driver assistance systems for automated vehicles and to thus pave the way for future autonomous vehicles. The WP.29 Informal Working Group on ITS/Autonomous Driving (ITS/AD) focused its activities on:
  - Preparing a proposal with a harmonized definition of Automated Driving Technologies;
  - Determining items to be addressed when establishing internationally harmonized regulations on Automated Driving Technologies that enable drivers to benefit from a higher degree of automation of the driving task; and
  - Preparing a proposal on harmonised general guidelines for e-Security and e-Safety in motor vehicles.
6. A subsidiary body of WP.29, the Working Party on Brakes and Running Gear which deals with active safety elements, finalized its work on the first amendments to Regulation No. 79 (Steering equipment). These include provisions for Automatically Commended Steering Functions (ACSF) with safety requirements and the corresponding testing procedures for Lane Keeping Systems, Corrective Steering Functions and Remote Controlled Parking. These amendments are the first elements towards automated vehicle regulations.

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<sup>1</sup> Annexed to the 1958 Agreement.

### III. The 1958 Agreement update and type-approval database, DETA

7. The discussions on the Revision 3 of the 1958 Agreement on type approval for vehicles, parts and components in the World Forum had been finalized and the Contracting Parties reached consensus at the June session of WP.29. This future amendment aims at fostering the broader participation of countries from emerging economies and regional economic integration organizations in the activities of the World Forum and at increasing the number of Contracting Parties to the Agreement.

8. Thus, the main objectives of Revision 3 to the 1958 Agreement:

(a) Insert new provisions for the International Vehicle Type Approval system (IWVTA);

(b) Allow the Contracting Parties to grant type approvals according to previous versions of UN Regulations annexed to the 1958 Agreement;

(c) Establish at UNECE an electronic database entitled the Database for the Exchange of Type Approval (DETA) for the exchange of type approval documentation between all the Contracting Parties to the Agreement (see para. 11 below);

(d) Modify the voting conditions for the adoption of new UN Regulations or their amendments to existing UN Regulations (i.e. current the two-thirds majority); and

(e) Review and strengthen the current provisions with the aim to improve the operation and reliability of the type approval procedures and the conditions for their mutual recognition (i.e. quality assurance assessment, certification and conformity of production procedures, tasks, responsibilities and competences of involved parties and aspects related to enforcement such as ensuring market surveillance and safeguard measures).

9. The entry into force of Revision 3 of the 1958 Agreement is expected in August 2017.

10. DETA as an online accessible database, will provide access to all type approvals related to whole vehicles, their parts and components, and will thus be the information back-bone for the IWVTA regime. Furthermore, with the introduction of the Unique Identifier, which is the basis for the simplification process of UN Regulations, the only link between the product and its type approval would be established through the information kept by DETA. With the Declaration of Conformance (DoC) document, generated by DETA, establishing a clear link between the individual vehicle and the related type-approvals. DoC documents are the prerequisite for a first registration of vehicles in the majority of UNECE member States. Furthermore, with the direct link to individual vehicles, DETA could easily identify those vehicles affected by irregularities, e.g. related to their emissions. This underlines the need and value to providing DETA to the Contracting Parties by UNECE. It also shows a direct link to the 2030 Agenda, as well as to the operationalization of the Paris Agreement reached in December 2015.

11. In preparation for hosting DETA at UNECE, the secretariat has elaborated several financing options including Public-Private-Partnership, extra-budgetary funding or fee-based models. Member States however opted for financing this project under the regular UNECE budget.

12. Following the decision by ITC to finance the hosting of DETA in the regular UNECE budget (ECE/TRANS/254, para. 65), the Sustainable Transport Division initiated this budget-related process. However, due to the upcoming budget cuts, the establishment and hosting of DETA has not been found feasible to be financed from the UNECE biennial Regular Budget.

13. As an alternative, interim option, it is proposed to submit the financing request under Programme Budgetary Implications (PBI) for additional regular budget based on the decision for establishing DETA under the UNECE auspices. This PBI process would require a firm commitment from the Contracting Parties, since the decision-making process on budgetary issues is lengthy and depends on support by the member States both in Geneva and New York.

14. WP.29, at its 170<sup>th</sup> session, reaffirmed its decision that DETA should be hosted by UNECE. It requested the secretariat to initiate the necessary steps for securing adequate additional resources from the United Nations Regular Budget for this new activity.

#### **IV. Reinforce implementation of the 1998 Agreement**

15. Discussions on a reinforcement of the implementation of the 1998 Agreement concluded with the establishment of a Special Resolution S.R.2 that was adopted at the June 2016 session of WP.29. This Resolution provides a more strategic approach for the work performed under the 1998 Agreement and also aims to reach higher transparency. The secretariat has already initiated the first steps by making the WP.29 website more user-friendly and proposing amendments to the WP.29 Rules of Procedures that will ease the process for attending sessions of the World Forum for non-governmental organizations, academia and civil society.

#### **V. Revival of Periodic Technical Inspection (PTI)**

16. Updates to the Rules under the 1997 Agreement have been prepared and include an extension of the scope to motor vehicles below 3.5 tonnes, passenger cars and light vans, as well as the introduction of test requirements for electronic controlled safety relevant systems as well as clear assessment of defects related to their gravity. For alignment with dates of entry into force of similar requirements in other regulatory frameworks, an adoption of these amendments was envisaged for the coming WP.29 session in 2017.

17. Further provisions for strengthening the quality and performance of PTI systems including requirements for test equipment, skills and training of personnel performing PTI as well as the supervision of PTI stations were elaborated by the experts of the IWG on PTI.

#### **VI. Safe vehicles as a basis for road safety – a proposed voluntary commitment of the automotive industry**

18. As a combined initiative of the UNECE and the Secretary General's Special Envoy for Road safety, a set of minimum UN vehicle safety regulations have been identified. These regulations provide the basis for a proposed voluntary commitment by the automotive industry and would provide for the sales of new vehicles at an acceptable safety level and thus pave the way for enhancing road safety to reach the goal set out in number three of the Sustainable Development Goals.

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## Annex

### I. List of new Vehicle regulations entered into force in 2016

- UN Regulation No. 136 on electric powered two wheelers, Electric Vehicles of Category L (EV-L), adopted at the June 2015 session of the World Forum for Harmonization of Vehicle Regulations (WP.29), provides the safety performance requirements of the electric energy storage systems in EV-L;
- UN Regulation No. 137 on Frontal Impact with focus on Restraint Systems (FIRS), adopted at the November 2015 session of WP.29, results in more stringent safety performance requirements for vehicles in a frontal impact with 100 per cent overlap with the crash barrier;
- UN Regulation No. 138 on Quiet Road Transport Vehicles (QRTV) adopted at the March 2016 session of WP.29, provides for specific sound emissions of electric or hybrid vehicles when stationary or moving at low speeds.

### II. List of new Vehicle Regulations adopted in 2016

- UN Regulation on Brake Assist Systems (BAS), adopted at the June 2016 session of WP.29, provides the enhanced performance requirements for braking systems in cases of emergency braking situations;
- UN Regulation on Electronic Stability Control (ESC), adopted at the June 2016 session of WP.29, decouples the requirements for ESC from the basic braking requirements for light duty vehicles covered by UN Regulation No. 13H;
- UN Regulation on Tyre Pressure Monitoring Systems (TPMS), adopted at the June 2016 session of WP.29, provides the principal performance requirements for TPMS to enhance road safety and reducing CO<sub>2</sub> emissions from light duty vehicles;
- UN Regulation on Heavy Duty Dual-Fuel Engine Retrofit Systems (HDDF-ERS), adopted at the November 2016 session of WP.29, establishes the performance requirements for these retrofit systems in the shift towards cleaner road transport vehicles using LPG (Liquefied Petroleum Gas), CNG (Compressed Natural Gas) or LNG (Liquefied Natural Gas) as alternative fuels to diesel.

### III. List of new Global Technical Regulations adopted and entered into force in 2016

- Global Technical Regulation No. 17 on crankcase emissions for powered two- and three wheeled vehicles, adopted at the November 2016 session of WP.29 establishes harmonized test procedures allowing measurement of the crankcase and evaporative emissions and, subsequently, to reduce the emission of unburned fuel which is of a toxic nature;
- Global Technical Regulation No. 18 on on-board diagnosis systems for powered two- and three wheeled vehicles, adopted at the November 2016 session of WP.29 establishes functional On-Board Diagnostic (OBD) requirements for the 'infrastructure' on-board of a motor vehicle in the scope of this GTR (determines inter alia hardware and software design in a technology neutral way and harmonized requirements to conduct the environmental verification test procedure); and
- Amendments to the Global Technical Regulations No. 16 (tyres).