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Items 5.7. and 22. of the provisional agenda

1998 AGREEMENT

Proposal to develop a global technical regulation
on worldwide harmonized light-duty test procedures (WLTP)

Submitted by the representative of Japan

The text reproduced below has been submitted by the representative of Japan and contains a proposal to develop a global technical regulation (gtr) on worldwide harmonized light-duty test procedures (WLTP). The proposal, which is based on informal document No. WP.29-142-19 (ECE/TRANS/WP.29/1062, para. 96), is submitted to the Executive Committee (AC.3) of the 1998 Agreement for consideration (paragraph 6.2. of the Agreement). If AC.3 agrees on the need to develop this gtr, the proposal should be referred to the appropriate Working Party (para. 6.2.3. of the Agreement).

I. OBJECTIVE OF THE PROPOSAL

1. The objective of this proposal is to establish a global technical regulation (gtr) for light-duty vehicle emissions including:
 - (a) a common test cycle reflecting the actual driving conditions in real world
 - (b) consideration regarding On Board Diagnostic (OBD) detection capabilities and off-cycle emission.

2. Regulations governing the exhaust-emissions from light duty vehicles have been in existence for many years but the test cycles and methods of emissions measurement vary significantly. To be able to correctly determine the impact of a light duty vehicles on the environment in terms of its exhaust pollutant emissions as well as the efficient use of energy, it is desirable that as many countries as possible use the same technical regulations. For this purpose, a gtr is an important step forward.

3. The gtr No. 2, World-wide harmonized Motorcycle emission Test Cycle (WMTC), for motor cycle emissions and the gtr No. 4, World-wide harmonized Heavy-Duty Certification procedure (WHDC), for heavy-duty vehicle emissions have been successfully established and it is beneficial to start the work on light-duty vehicles as well. Light-duty vehicles are increasingly produced for the world market. It is economically inefficient for manufacturers to have to prepare substantially different models in order to meet different regulations and methods of measuring emissions, which, in principle, aim at achieving the same objective. To enable manufacturers to develop new environmentally friendly models more effectively and within a shorter time, it is desirable that a gtr should be developed. These savings will benefit not only the manufacturer, but also more importantly, the consumer.

4. Work on the proposed gtr for WLTP would contribute to ensure better air quality and substantial growth in the popularity of low-emission vehicles.

II. DRAFT WORK PLAN OF WLTP GTR

Steps of work	Tasks	Notes
Establishment of GRPE WLTP Working Group		
Creation of plans (fundamental scheme)	<ol style="list-style-type: none"> 1) Consideration of the concept of common test cycle <ol style="list-style-type: none"> (a) develop common test cycles for emission and fuel consumption measurements, for example, representing three modes for urban, rural and highway. 2) Classification of equivalent inertia weights <ol style="list-style-type: none"> (a) should be common worldwide 3) Consideration of the items to include in WLTP <ol style="list-style-type: none"> (a) OBD, off cycle: <ol style="list-style-type: none"> (i) Evaporative emission, (ii) Low temperature test, High altitude, Air conditioner, (iii) Electric load, etc (b) Energy sources: gasoline, diesel, Natural Gas, Liquefied Petroleum Gas, Hydrogen, Flexible Fuel Vehicle, Electric Vehicle, Hybrid Electric Vehicle 4) Countries/regions subject to collect the data (Europe, the United States, Japan, China, India) 5) Allocation of workload 	Comparison of current test procedures in each country or region
Proposal for development	Adoption of proposal for development with the concept of WLTP, work plan, work schedule and other necessary items	
Studies of driving cycle	<p>Consideration of the procedure how to develop the common test cycle</p> <ol style="list-style-type: none"> (a) Sort the actual driving data in each country/region (driving pattern, shift point, etc) and collect the complementing data (b) Analysis of the driving frequency distributions of the collected driving data in each country/region 	Analysis of current test procedures in each country or region
Creation of driving cycle and test procedure	<p>Development of the common test cycle and test procedure Adjustment of the common test cycle and test procedure</p> <p>Items to consider:</p> <ol style="list-style-type: none"> (a) Gear shift points (b) Duration and running length of the common test cycle (c) Equivalent inertia weights (d) Weighting factors of cold start test and hot start test (e) Representativeness, reproducibility, measurability (f) Preconditioning, etc. 	

Studies of test fuels, etc.	Consideration of test fuel, road-load setting and performance requirements for chassis dynamometer, etc.	
Interim conclusion	Common test cycle and test procedure	
Validation test and refine, etc.	Validation test for common test cycle, improvement of the test procedure (tests performed by third party, manufacturers, etc.)	
Drafting of gtr	Drafting the gtr	
Proposal for a draft gtr	Draft of WLTP gtr	
Approval at GRPE	Approve the formal document at the Working Party on Pollution and Energy (GRPE)	
Proposal to AC.3	Proposal of the formal document to AC.3	
Voting at AC.3	Voting and Adoption at AC.3	
Available for application	WLTP gtr is ready to be applied by Contracting Parties to the 1998 Agreement (around 2016)	

Next step: Consideration of limit values for emission standards

III. WORK SCHEDULE

Schedule for WLTP Activities -Draft-


