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Item 19.1 of the provisional agenda

PROPOSALS TO DEVELOP NEW GLOBAL TECHNICAL REGULATIONS AND/OR AMENDMENTS TO ESTABLISHED GLOBAL TECHNICAL REGULATIONS

Proposal to develop a new global technical regulation on Worldwide harmonized Light Vehicle Test Procedures

Submitted by the European Community, Japan and the United States of America */

The text reproduced below was prepared by the representatives of the European Community, Japan and the United States of America, technical sponsors for the development of a global technical regulation (gtr) on Worldwide harmonized Light vehicle Test Procedures (WLTP). The proposal to develop the gtr, which is mainly based on informal document No. WP.29-148-22 and working paper No. WLTP-03-03, is submitted to the Executive Committee (AC.3) of the 1998 Agreement for consideration (ECE/TRANS/WP.29/1077, paras. 104-105 and article 6.2. of the 1998 Agreement).

*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

I. OBJECTIVE OF THE PROPOSAL

1. At its November 2007 session, the World Forum for Harmonization of Vehicles Regulations (WP.29) decided to set up an informal group under its Working Party on Pollution and Energy (GRPE) to prepare, within the next 2 years, a road map for the development of Worldwide harmonized Light duty vehicle Test Procedures (WLTP) (ECE/TRANS/WP.29/1064, para. 14).

2. During the preparation phase, the political urgency to develop new test cycles for light duty vehicles with regard to emissions of pollutants and CO_2 was expressed by ministers at the first International Transport Forum (ITF) in Leipzig in May 2008, by the International Energy Agency (IEA) Conference in Paris in September 2008, the Ministerial Conference on Global Environment and Energy in Transport (MEET) in Tokyo in January 2009 and, recently, at the high-level segment on climate change mitigation and adaptation during the sixty-third session of the UNECE, held in Geneva on 31 March 2009.

3. The objective of this proposal is to establish a global technical regulation (gtr) for light duty vehicle based on the proposed road map (see working paper No. WLTP-03-03). Following the discussions during WLTP informal group meetings as well as GRPE and WP.29 sessions, the following items of the road map were identified:

(a) Scope of work to develop a gtr,

(b) Time schedule and time frame of each work element, and

(c) Plan for future work.

4. Regulations governing the emissions and fuel consumption from light duty vehicles have existed for many years, but the test cycles and measurement methods vary significantly from one country to another. To determine with accuracy the impact of a light duty vehicle 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.

5. The gtr No. 2, Worldwide harmonized Motorcycle emission Test Cycle (WMTC), for motor cycle emissions and the gtr No. 4, Worldwide harmonized Heavy-Duty Certification procedure (WHDC), for heavy-duty vehicle emissions have been successfully established. It is now crucial to start working on light duty vehicles as well. Light duty vehicles are increasingly produced for the world market. For manufacturers it is economically unprofitable unproductive to produce substantially different models in order to meet diverse regulations and methods of measuring emissions which, in principle, aim at achieving the same objective. To enable manufacturers to develop more effectively and within a shorter time span new models of environmentally friendly vehicles, a gtr needs to be developed. The savings generated by a global regulation will benefit not only the manufacturer, but also more importantly, the consumer.

6. The proposed gtr for WLTP would contribute to ensure better air quality and substantial growth in the popularity of low-emission and high fuel efficiency vehicles.

II. GTR DEVELOPMENT PROCESS

7. The original road map (WLTP-03-03) was developed during the WLTP drafting group meetings hosted by the European Community on 19 March 2009 and 27-28 April 2009. Participating delegates from Contracting Parties and organizations were the European Community, France, Germany, India, Japan, Netherlands, Sweden, the United Kingdom, the United States of America, the Foundation for the Automobile and Society (FIA Foundation), the Association for Emissions Control by Catalysts (AECC), the International Organization of Motor Vehicle Manufacturers (OICA) and the WLTP Technical Secretary.

8. The road map was presented at the third WLTP informal group meeting (10 June 2009) and the fifty-eighth session of GRPE (11 June 2009). GRPE agreed to proceed in three subsequent phases in order to develop, in parallel at least, the test cycle and the test procedures, with the aim of completing both by the end of 2013. It was also agreed to remove from the WLTP road map the development of On-Board Diagnostic (OBD) requirements for light duty vehicles and to mandate a specific group to carry out this work under a separate gtr.

9. At its June 2009 session, AC.3 decided to focus the work on the development of the test cycle and the test procedures, and to keep the development test procedures for Off-Cycle Emission (OCE) and Mobile Air Conditioning (MAC) in Phase 1. Considering the European Union (EU) decision to apply OCE and MAC procedures by 2014, it was also agreed that GRPE work on developing test procedures for OCE and MAC in an open way, so that after completion of the technical work those procedures might be incorporated into the gtr, or in a 1958 Agreement Regulation, or in a EU legal text.

10. Phases for the development of the gtr on WLTP:

(a) Phase 1 work

(i) Develop the worldwide harmonized light duty test procedure;

(ii) Develop OCE test procedure; 1/

(iii) Develop MAC test procedure. 1/

(b) Phase 2 work

(i) Low ambient temperature / high altitude test procedure;

1/ See paragraph 9.

(ii) Conformity (Durability, conformity of production, in-service conformity). 2/

(c) Phase 3 work

(i) Reference fuel specifications;

(ii) Correlation with existing regional cycles;

(iii) Definition of emission limits.

11. Timeline for Phase 1 is as follows:

(a) Fifty-ninth GRPE session - January 2010:
Development of the in-use data analysis methodology

(b) Interim WLTP informal group meeting - August 2010:
Completion of the in-use data collection

(c) Sixty-third GRPE session - January 2012:
Completion of the validation tests

(d) Sixty-fourth GRPE session - June 2012:

(i) Finalization of the test cycle

(ii) Development of the test procedure

(e) Sixty-fifth GRPE session - January 2013:
Completion of the confirmation tests

(f) Sixty-sixth GRPE session - June 2013

(i) Completion of the round robin tests

(ii) Development of the formal gtr text for Phase 1 work

(g) 161st session of WP.29/AC.3 - November 2013:
Submission of formal text of the draft gtr on WLTP

12. With regard to the timeline for Phase 2 and 3, a detailed time schedule will be determined prior to each phase.

2/ These open issues will be determined by WP.29/AC.3 prior to the beginning of the Phase 2 work.

III. SCOPE OF WORK IN PHASE 1

13. For organizational reasons (of Phase 1), it was agreed to set up two sub-groups which will report to the WLTP informal group. In addition to these technical sub-groups, the text drafting group will work on the gtr text development:

(a) Technical sub-groups

(i) DHC (Development of the worldwide Harmonized light duty vehicle driving Cycle)

(ii) DTP (Development of Test Procedure)

(b) Text Drafting (TD) group (editorial group to draft the text of the gtr)

14. The time schedule of Phase 1 is reflected in the annex to this text.

15. With regard to the development of the worldwide harmonized light duty vehicle driving cycle, the following work elements will be accomplished by the DHC group:

(a) In-use data collection: Five contracting parties (European Community, China, India, Japan and USA) have committed to participate in the in-use data collection programme. The FIA Foundation has volunteered to provide data sampling in South America, and data from industry will also be taken into account. Vehicle classes and road categories will be defined before data collection. Each region will decide on typical vehicle and route composition for each class. Existing regional data on driving behaviour (for vehicles and possibly also for motorcycles, which are likely to follow a similar pattern as vehicles) should also be taken into account where appropriate.

(b) Data analysis methodology: This is one of the key elements in the development of the worldwide harmonized light duty vehicle driving cycle. Based on previous experience in WHDC, WMTC and other national cycle developments (LA#4, JC08, etc.), the DHC group should develop the methodology and propose it to the WLTP informal group for acceptance.

(c) Worldwide harmonized light duty driving cycle development: This work will consist of two major steps. The first step will be the development of the initial driving cycle based on in-use data collection and data analysis methodology. Further iterations of the cycle will be necessary before starting the second step which would finalize the driving cycle on the basis of the validation, confirmation and round robin test results.

16. The test procedure development is a work element which will be executed by the DTP group. The International Organization for Standardization (ISO) should be mandated with the development of a standard for the test procedure in consultation with GRPE. In a preliminary step, a common terminology will need to be defined. Then, the following elements should be considered:

(a) Test procedure, including questions as to which constituents and to what extent we should measure and regulate air pollutant emission;

(b) Test equipment; and

(c) Final modifications.

17. With regard to OCE and MAC, GRPE should work in an open way on the development of test procedures, as indicated in paragraph 9 above. Thus, no specific work element and schedule are available at this stage.

18. The validation tests will be executed by the DHC group. The DTP group should be involved to provide a new test procedure. This work consists of three steps. The first step will be a preparation phase consisting of detailed testing plan, test vehicle procurement and test site preparation. The second step will be a preliminary check on the new developed driving cycle under the current test procedure. The third step will be a precise check under the proposed new test procedure. Based on the validation test results and conclusions, the new developed driving cycle might be modified.

19. The purpose of the confirmation tests is to determine whether or not the new test procedure (including new driving cycles) can be conducted with existing current test equipment in specific laboratories. This work element will be executed by DHC group, together with participating Contracting Parties, independent and industry emission laboratories, after the completion of the first step of validation tests.

20. In parallel to the confirmation tests, round robin tests will be conducted to verify the correlation between laboratories under the new test procedure. This work element will be executed by the DHC group, together with participating Contracting Parties, independent and industry emission laboratories. The round robin tests cannot begin until the new developed driving cycle has been finalized at the end of Phase 1. Consequently, it will be necessary to find a means of constraining the duration of the round robin in order to meet the Phase 1 deadline.

21. The preparation of text of the draft gtr will be executed by the TD group in close cooperation with the technical groups.

IV. SCOPE OF WORK IN PHASE 2

22. With regard to the organization and time schedule of Phase 2, it is noted that these work elements will be determined prior to beginning Phase 2 work.

23. The following items are tentative work elements and have to be considered for the above-mentioned purpose. No specific timeline is available at this stage.

(a) Low ambient temperature / high altitude tests: This work element will be executed mainly by the DTP group. The DHC group may be involved if specific driving cycles will be required under these conditions.

(b) Conformity: 3/

(i) Durability. This work element will be executed by the conformity group. In an initial step, the group should consider if all of the following elements are necessary: durability demonstration tests, conformity of production (COP) and in-service conformity test (ISC).

(ii) Conformity of production and in-service conformity.

24. The development of gtr text for Phase 2 will be executed by the TD text drafting group in close cooperation with the technical groups. Some specific issues on test procedures which fall out of the scope of the work, as well as implementation rules, may be developed at the regional or national level, taking into account progresses and discussions in WLTP.

IV. SCOPE OF WORK IN PHASE 3

25. The following items are tentative work elements which could be considered. No specific timeline is available at this stage.

26. It was agreed during the WLTP drafting group meetings to consider in Phase 3 harmonized emission limits in conjunction with fuel properties. An essential element for this phase will be a technical correlation study (comparison of emission results vehicles measured on vehicles according to current regional requirements and to those of the new gtr).

Therefore, the following steps are expected to be considered during Phase 3:

(a) Definition of reference fuel specifications;

(b) Correlation testing, if applicable;

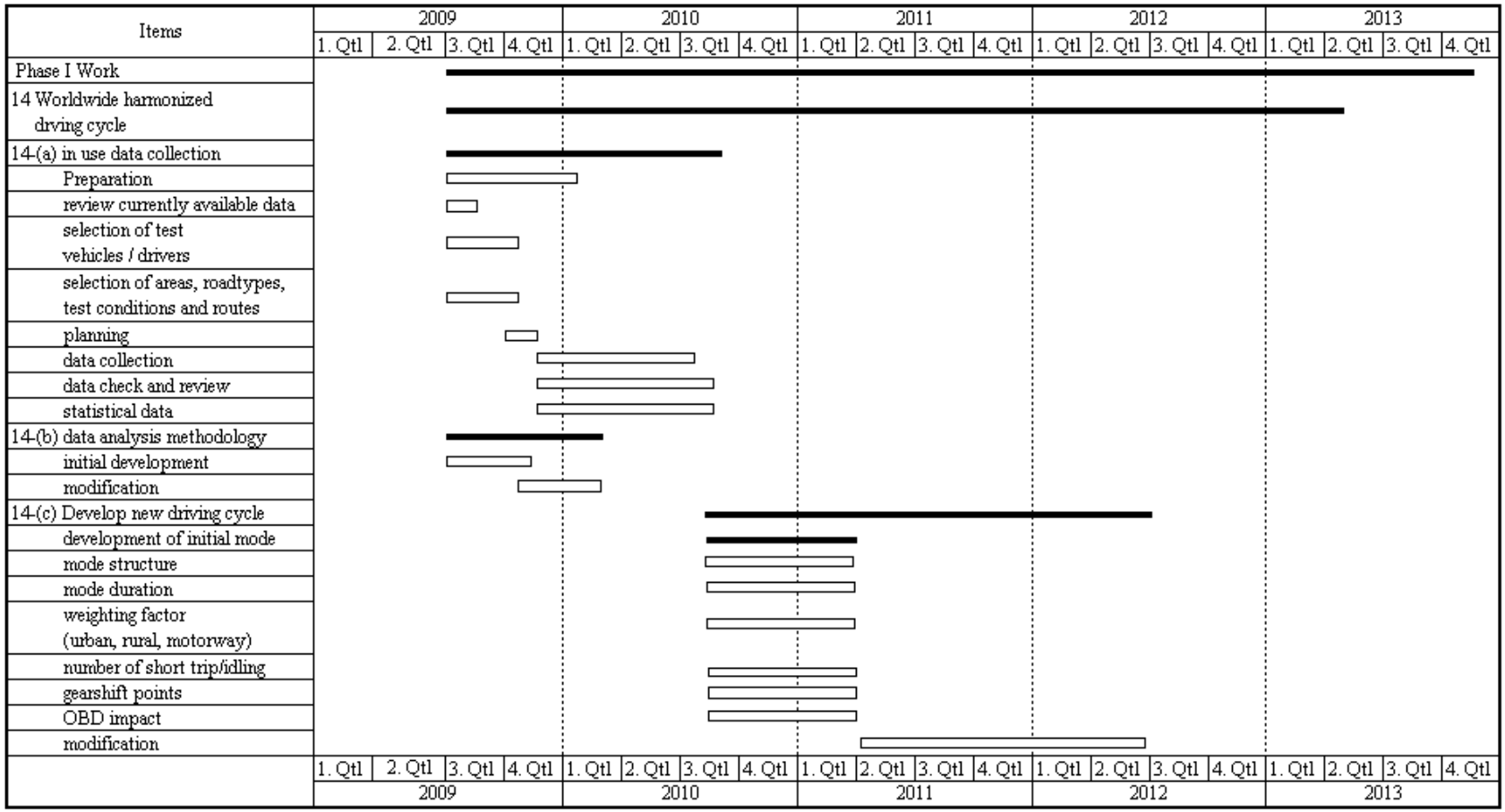
(c) Definition of emission limits, if applicable;

(d) Development of final gtr text;

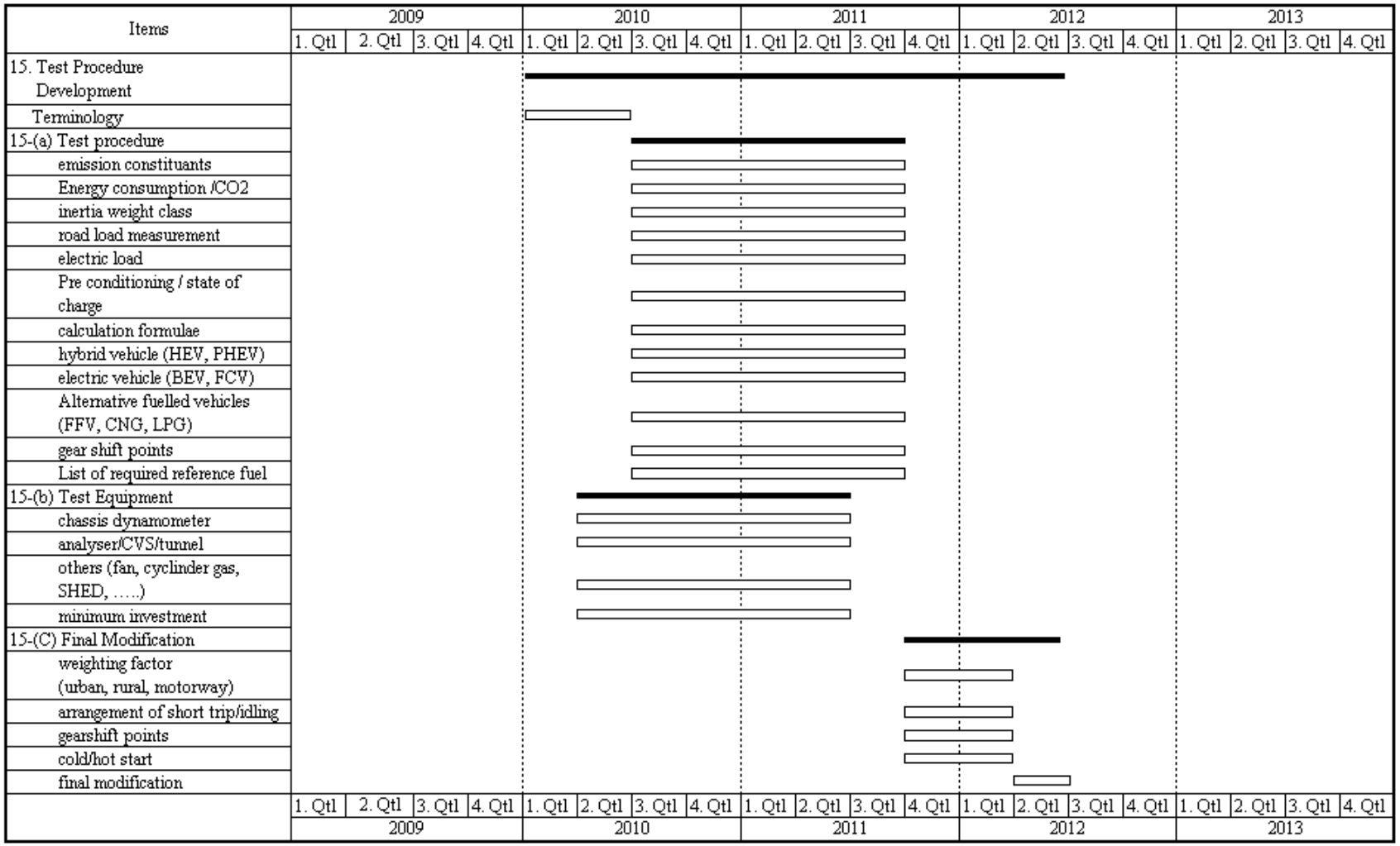
(e) Impact assessment.

3/ These open issues will be determined by WP.29/AC.3 prior to the beginning of the Phase 2 work.

ANNEX: Phase 1 Work Schedule (1)



ANNEX (continued): Phase 1 Work Schedule (2)



ANNEX (continued): Phase 1 Work Schedule (3)