

Item List to be discussed in WLTP- Informal Group (based on GRPE55-12 and GRPE55-18)	Task			
	Roadmap making phase		gtr making phase	
	make a decision to be launched during gtr making phase	Consensus as a concept/ procedure	Discussion	Development of the test procedure
A. Objective of the proposal				
A-1. Basic Concept				
One product sold anywhere in the world		✓		
One test procedure		✓		
Uniform measurement constituents		✓		
Maximum possible commonization of certification processes.	✓			
A-2. Items to be discussed				
Real driving patterns under urban, extra urban and highway traffic conditions		✓		
One test procedure for emissions and energy consumption testing		✓		
Broad scope including e.g. OBD, durability, off-cycle behavior,	✓		✓	
Appropriate fuel quality for the advanced powertrain systems	✓			
Use of alternative fuels	✓		✓	
Future requirements based on air quality objectives for emission control			✓	
Technological and economic feasibility			✓	
B. Scope of harmonization				
Vehicle category concepts		✓		
Engine family concepts	✓			
Tailpipe emission and energy consumption test procedure (driving pattern, gear shift, preconditioning, ...)		✓		
Test conditions (incl. load, test weight, tyre selection, ...)			✓	
Measurement techniques			✓	
Defeat device assessment rules	✓			
Off-cycle concept (extra cycle, NTE, PEMS, ...)	✓			
Other devices	✓			
Reference fuel specifications incl. alternative fuels		✓	✓	[✓]
Need for durability requirements	✓			
OBD (test conditions and threshold values)	✓			
Evaporative emission test procedure	✓			
Low temperature test procedure	✓			
Need for particulate measurement test			✓	
Test at high altitude / low ambient pressure	✓			
C. Approach for harmonization				
C-1. Vehicle classification, scope				
Definition of vehicle classification				✓
C-2. Collection of statistics about vehicle park and use				
Determination of the Countries/regions from which data will be collected		✓		✓
The data about vehicle use (mileage) and driving behavior (vehicle and engine speed/load pattern) has to include all relevant real life vehicle operations				✓
A classification matrix will be derived from the data about vehicle use in order to take into account all relevant influencing parameter. This matrix should consider different regions, vehicle classes and road categories				✓
C-3. Collection and analysis of in-use driving behavior data, bearing in mind OBD				
C-4. Cycle development, [and weighting factors]				
Weighting factors of the matrix are combined with the in-use data in order to create a reference database				✓
The test procedure needs to be				
representative of world-wide on-road vehicle operation			✓	
able to provide the highest practical level of efficiency in representing on-road emissions			✓	
corresponding to state-of-the-art testing, sampling and measurement technology			✓	
applicable in practice to existing and foreseeable future exhaust emissions abatement technologies			✓	
capable of providing a reliable ranking of exhaust emission levels from different engine types			✓	
consistent with the development of appropriate emission factors,			✓	
inclusive of testing off-cycle emissions			✓	
The first step is to compact the reference cycles into a first draft test cycle of a desired length				✓
This cycle should have the same key parameter values as the reference database (vehicle speed distribution, idle time distribution, acc. dec. and cruise modes).				✓
It has to be foreseen that this first draft will need to be modified on the basis of an evaluation concerning driveability and practical points concerning the measurement procedure				✓
Since this process is interactive by nature, several adaptation rounds including the driveability tests have to be carried out				✓
OBD requirements must be considered.			✓	

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C-5. Gearshift prescription development				
The development of the gearshift procedure should be based on an analysis of the gearshift points in the in-use data				✓
In order to get generalized relations between technical specifications of the vehicles and gearshift speeds the engine speeds should be normalized to the utilizable band between rated speed and idling speed				✓
In a second step the end speeds (vehicle speed as well as normalized engine speed) for up shifts and downshifts should be determined. The averages of these speeds for each gear and vehicle should be calculated and correlated with technical specification				✓
C-6. Driveability tests with candidate cycle				✓
C-7. Update of measurement procedure				
The update of the measurement procedure should include the vehicle preparation as well as the test bench settings and				
Preconditioning/soak condition				
Road load resistance				
Definition of inertia mass				
Cooling requirements				✓
Exhaust gas sampling procedure				
Tolerance criteria				
Emission calculation				
This work might be performed by ISO		✓		
C-8. OBD tests				
Detection capabilities of the OBD			✓	
C-9. Emission Validation tests in two steps		✓		
1. Test bench measurements with priority for driveability				✓
2. Test bench measurements in order to compare emissions. Reproducibility of measured exhaust emissions and fuel economy/CO2 values				✓
Both steps should be performed in all relevant regions.				✓
Depending on the outcome of step 1 further modifications of the cycle and/or the gearshift prescriptions might be necessary				✓
For step 2 the new cycle as well as the regional certification cycles should be used				✓
C-10. Round robin tests				
An additional round robin test should be performed		✓		✓
D. Development of gtr text				
Develop final gtr text to be proposed to WP.29				✓
E. Confirmation of the Work Schedule				
<p>The diagram is a Gantt chart titled 'Confirmation of the Work Schedule' spanning from 2007 to 2017. It is divided into two main phases: 'Road Map Making Phase' (2007-2009) and 'gtr Making Phase' (2009-2017). Road Map Making Phase (2007-2009): - 2007: 'present 1st proposition' (arrow from 2007 to 2008). - 2008: 'revise proposition based on discussion' (arrow from 2008 to 2009). - 2009: 'Formal Proposal' (arrow from 2009 to 2010). - A dashed line indicates 'establish organization for future work' starting in 2009. gtr Making Phase (2009-2017): - 2009: 'Link to GRPE Meeting' (arrow from 2009 to 2010). - 2010: 'gtr Proposal' (star icon). - 2010-2017: 'Studies of driving cycle', 'Creation of driving cycle (DC) and testing methods (TM)', 'Studies of test fuels, etc.', 'Validation testing and refine, etc.', 'Make draft gtr'. Agreements and Approvals: - 2009: 'Agreement at GRPE' (checkbox) and 'Approval by WP29' (checkbox). - 2010: 'Agreement at GRPE' (checkbox) and 'Approval by WP29' (checkbox). - 2017: 'Approval by WP29' (checkbox). - A 'Final' box is marked at the end of the 2009-2010 period.</p>		✓		
F. Organization				
Establish appropriate organization in gtr making phase. i.e.) the development is handled by one informal group which may be assisted by specialist sub-groups reporting to it		✓		
G. Budget				
A budget needs to be developed during the roadmap making phase to clearly establish the anticipated costs of the gtr development and the burden sharing between the involved parties		✓		