WLTP-E-Lab Sub Group Progress report

WLTP-DTP-E-LabProc-028

Leader: Per Ohlund / Kazuki Kobayashi



Meeting (after 61th GRPE)

- 5th meeting:
 - Date:27.1.2011

Location: Phone conference

- Topics: GTR structure/Definition
- 6th meeting:

Date:23-24.2.2011

Location: Brussels

Topics: GTR structure/Definition/CD&CS test / Calculation

Meeting (after 61th GRPE)

- 7th meeting:
 - Date:1.4.2011
 - Location: Phone conference
 - Topics:CD&CS test /Calculation
 - Discussed based on ACEA proposal
- 8th meeting:
 - Date:12.4.2011
 - Location: Zurich
 - Topics: Open issues/Schedule
- 9th meeting will be held 9th May by phone.
- 10th meeting will be held 1st June by phone.

Current Regulation

Proposed gtr Structure

101 7 Electric Energy Consumption . Test Sequence 2. Test Media 2. 2. Weblic 2. 4. Operation mode appendix R4. X Type I . Introduction 2. Calce Of Vehicle 3. OCV win mode switch 5. NOVC win mode switch 5	R	Annex		Annex		will be discussed on
 I. Test Sequence Test Sequence Test Sequence Test Sequence Test Sequence Test Sequence Test Method S. Vehicle S. Vehicle S. Vehicle S. O'CZFuel Consumption I. Introduction S. O'CZFuel Consumption I. Introduction S. O'CZFuel Consumption S. O'CZ Fuel Consumption S. O'CZ Fuel Consumption I. Introduction S. O'CZ Fuel Consumption S. O'CZ Fuel Co	101	7	Electric Energy Consumption	Х	Туре І	
101 9 2.2. Papa. 2.3. Vehicle 2.4. Operation mode 1. Introduction end of May end of M			1. Test Sequence		combine emission/CO2/fuel&energy consumption/electric range test procedure to ONE gtr	
2.3. vehicle 2.4. Operation mode 2.4. Operation mode 2.7. Operation mode 2.7. Operation mode 2.7. Jan. 2011 2.3.24 Feb. 2011			2. Test Method 2.1. Principle			
101 8 CO2Fuel Consumption 1. Introduction 2. Cato: Of Volicle 2. Cato: Of Volicle 2. Cato: Of Volicle 3. SOUC w/m mode switch 5. NOVC w/m mode switch 5. NOVC w/m mode switch 6. NOVC w/m mode switch 7. Lebertic Range 2. Para. 7. Cato: Of Volicle 8. Type II 1. Rev 2. Definitions / Terminologies related detcrified volicies only address of Volicles enew 2. Cato: Of volicles and required ust matix 4. Test Equipment and Accura :> roler sheet "3. tost matix" 4. Test Equipment and Accura :> roler sheet "4. tost equipment" 5. NOVC w/m mode switch 6. NOVC w/m mode switch 6. Test Sequence 6. Test Sequence 7. Cato: Of Volicle 8. NOVC w/m mode switch 3. NOVC w/m m			2.2. Papa.		1. Introduction	end of May
intermination appendix. R/L intermination 27 Jan.2011 2324 Feb 2011 intermination intermination intermination 2324 Feb 2011 2324 Feb 2011 intermination intermination intermination intermination 2324 Feb 2011 intermination intermination intermination intermination intermination intermination intermination intermination intermination intermination intermination intermination int			2.3. Vehicle			
appendix. Ful. appendix. Ful. 27 Jan.2011 27 Jan.2011 101 8 CO2/Full Consumption 3. Categories of Vehicles 23.24 Feb.2011 1. Introduction 2. Cate. of Vehicle 3. Categories of Vehicles end of April 4. OVC wi mode switch 4. OVC wi mode switch 4. Cove winch switch end of April 5. NOVC wi mode switch 5. Preparation of Vehicles and required test matrix -> refer sheet '3. test matrix' end of April appendix 1. SOC profile appendix 1. SOC profile 5. Preparation of Vehicles wight : follow the procedure defined in ICE group 5.2. Vehicle wight : follow the procedure defined in ICE group end of March 101 9 Electric Range 6. Test Sequence 6. Test Sequence end of March 6. Test Sequence 6. To Sequence 6. Test Sequence 23.24 Feb.2011 83 14 Emission 3.1. OVC wi mode switch 3.4. NOVC wi mode switch 7. Calculation 3.2. NOVC wi mode switch 3.3. NOVC wi mode switch 7.4. Calculation 23.24 Feb.2011 23.24 Feb.2011 3.3. NOVC wi mode switch 23.24 Feb.2011 23.24 Feb.2011 2.2. Cate. Of Vehicle 3.1. OVC wi mode switch 7.4. Calculation 23.24 Feb.2011 2.2. Cate. Of Vehicle 3.1. OVC wim ode switch 7.4. Ensission 23.24 Feb.			2.4. Operation mode			
Ion CostPeter CostPeter Consumption 23/24 Feb 2011 101 8 COStPeter Co					new 2. Definitions / Terminologies	
101 8 CO2/Eval Consumption 1. Introduction 2. Cate, of Vehicle 3. Cot W of mode switch 4. CVC w/ mode switch 5. NOVC w/ mode switch 6. State Compensation 3. Categories of Vehicles 6. Test Equipment and Accurr.> refer sheet "3. test matrix" end of April end of April 6. Preparation of Vehicles 6. Test Equipment and Accurr.> refer sheet "3. test matrix" 101 9 Electric Range 1. Electric Range 2. Cate, Of Vehicles 3. Test conditions 6. Coperation mode 6. Test Sequence 6. Test Sequence 6. Test Sequence 6. Test Sequence 6. State Sequence 6. State Sequence 6. State Sequence 6. State Sequence 6. State Sequence 7. Catculation 7. Catcu			appendix. R/L		related electrified vehicles only	27 Jan.2011
1. Introduction 2. Cate. of Webloide 3. CVC Wo mode switch 3. CVC Wo mode switch and required test matrix -> refor sheet "3. test matrix" end of April 4. OVC Wo mode switch 5. NOVC wo mode switch 5. NOVC wo mode switch 5. Preparation of Vebloide end of April 5. NOVC wo mode switch 6. NOVC wo mode switch 5. Preparation of Vebloide 5. Vebloide mode of April end of April 101 9 Electric Range 5. NovC wo mode switch 5. Vebloide running-in formultiple power sources end of March 10. 1 9 Electric Range 6. Test Sequence 6.1 col Test appendix 1. SOC profile applicable to PEV and OVC HEV 23/24 Feb.2011 83 14 Emission 1. Introduction 6.1 col Test applicable to VC HEV and NOVC HEV 23/24 Feb.2011 1. Introduction 3. NOVC wo mode switch 3. NOVC wo mode switch 7. Calculation 7.1. Emissions 23/24 Feb.2011 1. Electric Range 3. NOVC wo mode switch 3. NOVC wo mode switch 2. So Compensation of Vebloide 2. So Compensation 23/24 Feb.2011 2. Cast co V debide 7. Calculation 7. Calculation 2. So Cole Lei Consumption GHG 2.3/24 Feb.2011 23/24 Feb.2011 <th></th> <th></th> <th></th> <th></th> <th>base document : WLTP-DTP-E-LabProc-011_ACEA proposal bis_Definition_10</th> <th>23/24 Feb 2011</th>					base document : WLTP-DTP-E-LabProc-011_ACEA proposal bis_Definition_10	23/24 Feb 2011
2 2. Cate. of Vehicle end of April 3. OVC W mode switch 5. OVC W mode switch end of April 4. OVC W mode switch 5. NOVC W mode switch end of April 5. NOVC W mode switch 5. Preparation of Vehicles end of April appendix 1. SCC profile appendix 2. SOC compensation File 101 9 Electric Range end of April 2. Para. 3. Test conditions 6. Test Sequence end of April 4. Operation mode 1. Hotoduction 6. Test Sequence end of April 2. Cate. Of Vehicle 3. Type I 3.1. OVC wi mode switch 3.2. OVC wi mode switch 3. Type I 3.1. OVC wi mode switch 6. Test Sequence end of April 2. Cate. Of Vehicle 3. Type I 3.1. OVC wi mode switch 3.2. OVC wi mode switch 3.2. OVC wi mode switch 3. Type I 3.1. NOVC wi mode switch 3.3. NOVC wi mode switch 3.3. NOVC wi mode switch 3.2. OVC wimode switch 3. Type I 3.1. NOVC wimode switch 3.3. NOVC wimode switch 3.3. NOVC wimode switch 2.324 Feb.2011 2. Cate. Of Vehicle 3.3. NOVC wimode switch 3.4. NOVC wimode switch 2.2. OVC wimode switch <	101	8	CO2/Fuel Consumption			
3. OVC win mode switch 4. Ovc win mode switch 4. Test Equipment and Accur:>refer sheet "4. test equipment" end of April 4. OVC win mode switch 5. NOVC win mode switch 5. Neparation of Vehicles end of April appendix 1. SOC profile appendix 2. SOC compensation 5. Neparation of Vehicles end of April 101 9 Electric Range 5. Neparation of Vehicles end of April 101 9 Electric Range 6. Test Sequence end of March 2. Para. 3. Test conditions 6. Test Sequence e.2. OV HEV 23/24 Feb.2011 2. Operation mode 3. Nov winde switch 3. OVC win mode switch 2. OS Test applicable to PEV and OVC HEV 3. Type I 1. Introduction 2. OVC win mode switch 3. NOVC win mode switch 2.23/24 Feb.2011 2. Cast Diversion 3. NOVC win mode switch 3. NOVC win mode switch 2.20/24 Feb.2011 2. Cast Diversion 3. NOVC win mode switch 3. NOVC win mode switch 2.20/24 Feb.2011 2. Cast Diversion 3. NOVC win mode switch 3. NOVC win mode switch 2.20/24 Feb.2011 2. Cast Diversion 3. NOVC win mode switch 3. NOVC win mode switch 2.20/24 Feb.2011 3. NOVC win mode switch 3. NOVC win mode switch 3. NOVC win mode switch 2.20/24 Feb.2011 <td< th=""><th></th><th></th><th>1. Introduction</th><th></th><th>3. Categories of Vehicles</th><th></th></td<>			1. Introduction		3. Categories of Vehicles	
4. OVC w/ mode switch 5. NOVC w/ mode switch 6. NOVC w/ mode switch 7. Para. 3. Tote conditions 7. Operation mode 1. Electric Range 1. Electric Range 1. Electric Range 2. Para. 3. Tote conditions 4. Operation mode 1. Electric Range 2. Para. 3. Tote conditions 4. Operation mode 2. Cat: Of Vehicle 3. Type I 6. Tost Sequence 6. Tost Sequence 4. Operation mode 3. OVC w/ mode switch 3. NOVC w/ mode switch 3. Type I 6. Tost Sequence 6. Tost Sequence 7. Calculation 7. Calculati			2. Cate. of Vehicle		new and required test matrix -> refer sheet "3. test matrix"	end of April
S. NOVC w/m mode switch 5. NOVC w/m mode switch 5. Preparation of Vehicles 5.1. Vehicle weight : follow weight : follow the procedure defined in ICE group 9 101 9 Electric Range 5.1. Vehicle meminy in torm within procedure defined in ICE group 9 101 9 Electric Range 6. Test Sequence 6. Test Sequence 23/24 Feb.2011 2. Soc compensation 2. Operation mode 6. Test Sequence 6. Test Sequence 23/24 Feb.2011 2. Gate. Of Vehicle 3.1. OVC w/m mode switch 3.2. OVC w/m mode switch 7. Calculation 23/24 Feb.2011 2. Gate. Of Vehicle 3.1. OVC w/m mode switch 3.2. OVC w/m mode switch 7. Calculation 23/24 Feb.2011 2. Gate. Of Vehicle 3.1. OVC w/m mode switch 3.4. NOVC w/m mode switch 7. Calculation 23/24 Feb.2011 2. Gate. Of Vehicle 3.1. OVC w/m mode switch 3.4. NOVC w/m mode switch 7. Calculation 23/24 Feb.2011 2. CRANKCASE 5. Type II 3.4. NOVC w/m mode switch 7. Calculation 7.1. Emissions 23/24 Feb.2011 2. CALL Type V 3.4. NOVC w/mode switch 3.4. NOVC w/mode switch 7. Calculation 7.2. Calculation 2. Type III S. Type III S. Type III S. Type III S. OC compensationse document: B101/Annex8/Appendix 2 27. Jan.2011			3. OVC w/o mode switch			
S. NOVC win mode switch 5. VovC win mode switch 5. Preparation of Vehicles 5.1. Vehicle weight : follow with the procedure defined in ICE group 9 end of March 101 9 Electric Range 5. Preparation of Vehicles 5.1. Vehicle weight : follow with the procedure defined in ICE group 9 2. Para. 2.			4. OVC w/ mode switch		4. Test Equipment and Accurc -> refer sheet "4. test equipment"	end of April
appendix 1. SOC profile appendix 2. SOC compensation 5.1. Vehicle weight : follow the procedure defined in ICE group 5.2. Vehicle muliple: numling-in: follow the procedure defined in ICE group 5.2. Vehicle muliple: numling-in: follow the procedure defined in ICE group 5.2. Vehicle muliple: numling-in: follow the procedure defined in ICE group 5.2. Vehicle muliple: numling-in: follow the procedure defined in ICE group 5.2. Vehicle muliple: numling-in: follow the procedure defined in ICE group 5.2. Vehicle muliple: numliple: numliple power sources end of March 83 14 Emission 1. Instruction 2. Cats. Ol Vehicle 3. Type I 5.1. Over follow 3.1. OVC w/or mode switch 3.2. OVC w/ mode switch 3.2. OVC w/ mode switch 3.3. NOVC w/or mode switch 3.3. NOVC w/or mode switch 3.3. NOVC w/or mode switch 3.3. NOVC w/or mode switch 3.4. NOVC w/or mode switch 3.4. NOVC w/or mode switch 3.4. Type III EVAPO 6. Type III CRAINKCASE 5. Type III EVAPO 6. Type VI appendix. SOC profile appendix. SOC profile X-1 Type II delete ? X-2 Type II			5. NOVC w/o mode switch			
101 9 Electric Range 2. Para. 3. Test conditions 4. Operation mode 6. Test Sequence 6. Test Sequence 7. Calculation 7. Calcula			6. NOVC w/ mode switch	1	5. Preparation of Vehicles	
appendix 1. SOC profile appendix 2. SOC compensation 5.2. Vehicle running-in: follow the procedure defined in ICE group PEV: SOKm ? consider to define unique running-in for multiple power sources end of March 101 9 Electric Range 1. Electric Range 2. Para. 4. Operation mode 6. Test Sequence 6. Test Sequence 6. Test Sequence 6. Test Sequence 6. Test Sequence 1. Introduction 2. Cate. Of Vehicle 3. Type I 23/24 Feb.2011 23/24 Feb.2011 83 14 Emission 1. Introduction 2. Cate. Of Vehicle 3. Type I 3.1. OVC w/o mode switch 3.3. NOVC w/ mode switch 3.4. Type II 23/24 Feb.2011 23/24 Feb.2011 23						
appendix 2. SOC compensation PEV : 300km ? consider to define unique running-in for multiple power sources end of March 101 9 Electric Range consider to define unique running-in for multiple power sources end of March 2. Para. 3. Test conditions 6. Or Test applicable to PEV and OVC HEV 23/24 Feb.2011 83 14 Emission 6. Cost Sequence 6. Test Sequence 23/24 Feb.2011 2. Cate: Of Vehicle 3. Type I 3.1. OVC w/mode switch 3.2. Electric Enarge Cost 23/24 Feb.2011 3. Type I 3.1. OVC w/mode switch 3.2. OVC w/mode switch 7. Catculation 23/24 Feb.2011 3. Type I 3.1. OVC w/mode switch 3.2. NOVC w/mode switch 7. Catculation 23/24 Feb.2011 3. A NOVC w/ mode switch 3.2. NOVC w/mode switch 7. Catculation 23/24 Feb.2011 23/24 Feb.2011 CRANKCASE 5. Type II 3.2. NOVC w/mode switch 7. Electric Enargy Consumption/GHG 23/24 Feb.2011 CRANKCASE 5. Type IV appendix 3. OCP collie 23/24 Feb.2011 23/24 Feb.2011 VDRABILITY 7. Type V appendix 3. Utility Factor 27 Jan. 2011 23/24 Feb.2011 appendix. SOC profile X+1 <			appendix 1. SOC profile			
101 9 Electric Range 1. Electric Range 2. Para. end of March 301 9 Electric Range 2. Para. end of March 33 14 Emission 1. Introduction 2. Cate. Of Vehicle 3. Type I end of March 33 14 Emission 1. Introduction 2. Cate. Of Vehicle 3. Type I 3.1. OVC w/o mode switch 3.2. OVC w/ mode switch 3.3. NOVC w/o mode switch 3.4. NOVC w/ mo						
101 9 Electric Range 2. Para. 3. Test conditions 4. Operation mode 6. Test Sequence 6. 1. CD Test applicable to PEV and OVC HEV 23/24 Feb.2011 83 14 Emission 1. Introduction 2. Cate. OV which 3. Type I 6. Test Sequence 6. 1. CD Test applicable to PEV and OVC HEV 23/24 Feb.2011 83 14 Emission 1. Introduction 3. Type I 6. Test Sequence 6. Test Sequence 6. Test Sequence 6. Test Sequence 23/24 Feb.2011 83 14 Emission 1. Introduction 3. Type I 6. Test Sequence 6. Test Sequence 23/24 Feb.2011 9 2. Cate. Of Vehicle 3. Type I 7. Calculation 3.1. OVC w/ mode switch 3.3. NOVC w/ mode switch 3.3. NOVC w/ mode switch 3.3. NOVC w/ mode switch 3.4. NOVC w/ mode switch 1. EVAPO 6. Type IV DURABILITY 7. Type V 7.4 E Range (to add) appendix 1. SOC profile 23/24 Feb.2011 23/24 Feb.2011 VERAWICASE 5. Type IV DURABILITY 7. Type V CCLUB 8. Type VI appendix. SOC profile X+1 Type II delete ? 27 Jan. 2011 (including the specific test procedure and factor calculation) 27 Jan. 2011 end of May *+2 Type IV TBD 7.4 Type IV 24 Phase II X+3 Type IV TBD 24 Phase II 7.4 Phase II			where a second second			end of March
Image: Second tions and a constraint of the second time applicable to PEV and OVC HEV and	101	9	Electric Range		····· · · · · · · · · · · · · · · · ·	
2. Para. 3. Test conditions applicable to PEV and OVC HEV 23/24 Feb.2011 83 14 Emission applicable to OVC HEV and NOVC HEV 23/24 Feb.2011 83 14 Emission 1. Introduction 2. Cate. Of Vehicle 23/24 Feb.2011 3. Type I 3.1. OVC w/o mode switch 3.2. OVC w/o mode switch 3.3. NOVC w/o mode switch 23/24 Feb.2011 23/24 Feb.2011 3.2. OVC w/o mode switch 3.3. NOVC w/o mode switch 3.4. NOVC w/o mode switch 7.1. Emissions 23/24 Feb.2011 3.4. NOVC w/o mode switch 3.4. NOVC w/o mode switch 3.4. NOVC w/o mode switch 7.2. Cloudation 23/24 Feb.2011 DURABILITY Type II appendix SOC profile 3.4. NOVC w/o mode switch 2.5 OCC compensati base document : R101/Annex8/Appendix 2 27 Jan. 2011 DURABILITY Type V appendix SOC profile appendix 3. Utility Factor 27 Jan. 2011 appendix SOC profile appendix SOC profile X+1 Type II delete ? 2.1 X+4 Type V Type V Image: Type V 2.1 Appendix SOC profile X+2 Type III delete ? 2.1 X+4 Type IV Type IV <td< th=""><th></th><th>-</th><th></th><th></th><th>6. Test Sequence</th><th></th></td<>		-			6. Test Sequence	
a. Test conditions 23/24 Feb.2011 23/24 Feb.2011 83 14 Emission 1. Introduction 23/24 Feb.2011 2. Cate. Of Vehicle 3.1 OVC wio mode switch 3.2 OVC wir mode switch 23/24 Feb.2011 3.2 OVC wir mode switch 3.2 OVC wir mode switch 7. Calculation 23/24 Feb.2011 1. Introduction 3.2 OVC wir mode switch 7. Calculation 23/24 Feb.2011 3.4 NOVC wir mode switch 3.4 NOVC wir mode switch 7. Calculation 23/24 Feb.2011 1. DLE 4. Type II 3.4 NOVC wir mode switch 7. Calculation 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 3.2 OVC wir mode switch 7. Calculation 23/24 Feb.2011 1. DLE 4. Type II 4. NOVC wir mode switch 7. Calculation 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 3.4 NOVC wir mode switch 7. Calculation 23/24 Feb.2011 1 EVAPO 6. Type IV appendix 1. SOC profile 27 Jan.2011 23/24 Feb.2011 23/24 Feb.2011 appendix 3. Utility Factor appendix 2. OVC wir mode switch 27 Jan.2011 0. CALL appendix. SOC profile X+1 Type II delete ? X+3 <tr< th=""><th></th><th></th><th></th><th></th><th></th><th></th></tr<>						
4. Operation mode 6.2. CS Test applicable to OVC HEV and NOVC HEV applicable to OVC HEV and NOVC HEV 23/24 Feb.2011 83 14 Emission 1. Introduction 2. Cate: OV behicle 3. Type I 3.1. OVC w/o mode switch 3.2. OVC w/ mode switch 3.3. NOVC w/o mode switch 3.4. NOVC w/ mode switch 3.4. NOVC w/ mode switch IDLE 4. Type II 7. Calculation 7.2. Calculation 7.3. Electric Energy Consumption 7.3. Electric Energy Consumption 7.3. Electric Energy Consumption 7.3. Electric Energy Consumption 7.4. E Range (to add)) appendix 1. SOC profile appendix 2. SOC compensati base document : R101/Annex8/Appendix 2 (including the specific test procedure and factor calculation) appendix 3. Utility Factor 27 Jan. 2011 WARABILITY COLD 8. Type VI appendix. SOC profile X+1 Type II delete ? 27 Jan. 2011 X+2 Type II delete ? 27 Jan. 2011 27 Jan. 2011 X+3 Type V Phase II 27 Jan. 2011 X+4 Type V Phase II Phase II X+4 Type VI Phase II Phase II						23/24 Feb.2011
appendix 3. Utility Factor 23/24 Feb.2011 23/24 Feb.2011 83 14 Emission 1. Introduction 2. Cate. Of Vehicle 3. Type I 3.1. OVC w/o mode switch 3.2. OVC w/ mode switch 3.3. NOVC w/ mode switch 3.3. NOVC w/ mode switch 3.4. NOVC w/ mode switch 3.4. NOVC w/ mode switch 3.4. NOVC w/ mode switch 3.4. NOVC w/ mode switch IDLE 4. Type II 7. Calculation 7.4. E Range (to add) appendix 1. SOC profile 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 CRANKCASE 5. Type VI DURABILITY 7. Type V COLD 8. Type VI appendix. SOC profile 7.4. E Range (to add) appendix 3. Utility Factor 27 Jan. 2011 X+1 Type II delete ? X-1 Type II delete ? 27 Jan. 2011 X+2 Type III delete ? X+4 Type V Phase II X+4 Type VI Phase II Phase II X+5 Type VI Phase II Phase II						
83 14 Emission 1. Introduction 2. Cate. Of Vehicle 3. Type I 3.1. OVC w/o mode switch 3.2. OVC w/ mode switch 3.2. OVC w/ mode switch 3.3. NOVC w/o mode switch 3.4. NOVC w/ mode switch 3.4. NOVC w/ mode switch 3.4. NOVC w/ mode switch 3.4. NOVC w/ mode switch IDLE 4. Type II 6.3. Electric Range test PEV : consider "within 7days requirement" 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 23/24 Feb.2011 CRANKCASE 5. Type III EVAPO 6. Type V DURABLITY 7. Type V COLD 8. Type VI appendix. SOC profile Type II 27 Jan. 2011 (including the specific test procedure and factor calculation) appendix 3. Utility Factor 27 Jan. 2011 end of May VEX Type II delete ?						23/24 Feb.2011
1. Introduction 2. Cate. Of Vehicle 3. Type I 3.1. OVC w/mode switch 3. Type I 3.1. OVC w/mode switch 3. NOVC w/mode switch 7. Calculation CRANKCASE 5. Type II EVAPO 6. Type IV appendix 1. SOC profile DURABILITY Type V COLD 8. Type VI appendix. SOC profile appendix 3. Utility Factor X+1 Type II delete ? X+2 Type IV TBD X+4 Type V X+5 Type VI	83	14	Emission			
2. Cate. Of Vehicle 3. Type I 3.1. OVC w/o mode switch 3.2. OVC w/ mode switch 3.2. OVC w/ mode switch 2.3. NOVC w/o mode switch						
3. Type I 3.1. OVC w/o mode switch 7. Calculation 23/24 Feb.2011 3.3. NOVC w/ mode switch 3.4. NOVC w/ mode switch 7.1. Emissions 23/24 Feb.2011 3.3. NOVC w/ mode switch 3.4. NOVC w/ mode switch 7.4. E Range (to add) 23/24 Feb.2011 CRANKCASE 5. Type II appendix 1. SOC profile appendix 2. SOC compensati/base document : R101/Annex8/Appendix 2 27 Jan. 2011 DURABILITY 7. Type V including the specific test procedure and factor calculation) appendix 3. Utility Factor end of May New www.stream X+1 Type II delete ? 1 X+2 Type III delete ? 1 1 X+4 Type V Phase II 1 X+4 Type VI Phase II			2. Cate. Of Vehicle			
3.2. OVC w/ mode switch 3.3. NOVC w/o mode switch 23/24 Feb.2011 3.3. NOVC w/o mode switch 3.4. NOVC w/ mode switch 7.1. Emissions 23/24 Feb.2011 CRANKCASE 5. Type III 3.4. NOVC w/ mode switch 7.4 E Range (to add) 23/24 Feb.2011 DURABILITY 7. Type V appendix 1. SOC profile 7.4 E Range (to add) 23/24 Feb.2011 DURABILITY 7. Type V Including the specific test procedure and factor calculation) 27 Jan. 2011 27 Jan. 2011 appendix. SOC profile appendix 3. Utility Factor Including the specific test procedure and factor calculation) end of May X+1 Type II delete ? Including the specific test procedure and factor calculation) end of May X+2 Type III delete ? Including the specific test procedure and factor calculation) end of May X+2 Type III delete ? Including the specific test procedure and factor calculation) Phase II X+4 Type IV TBD Including the specific test procedure and factor calculation) Phase II X+4 Type VI Phase II Phase II Phase II					7. Calculation	
3.3. NOVC w/o mode switch 3.4. NOVC w/ mode switch 23/24 Feb.2011						23/24 Feb.2011
3.4. NOVC w/ mode switch 7.3. Electric Energy Consumption 23/24 Feb 2011 IDLE 4. Type II 5. Type III appendix 1. SOC profile appendix 1. SOC compensatibase document : R101/Annex8/Appendix 2 27 Jan. 2011 DURABILITY 7. Type V (including the specific test procedure and factor calculation) appendix 3. Utility Factor end of May appendix. SOC profile x+1 Type III delete ? c X+2 Type IVI delete ? c c X+3 Type IV TBD c c X+4 Type V Phase II Phase II X+5 Type VI Phase II Phase II			3.3. NOVC w/o mode switch			23/24 Feb.2011
IDLE 4. Type II 7.4 E Range (to add) 23/24 Feb.2011 CRANKCASE 5. Type III appendix 1. SOC profile appendix 1. SOC profile LUVAPO 6. Type IV 0 appendix 2. SOC compensati base document : R101/Annex8/Appendix 2 27 Jan. 2011 DURABILITY 7. Type V (including the specific test procedure and factor calculation) appendix 3. Utility Factor end of May Appendix. SOC profile X+1 Type II delete ? c X+2 Type IV Type IV c c X+3 Type IV TBD c c X+4 Type V Phase II Phase II X+5 Type VI Phase II			3.4. NOVC w/ mode switch			23/24 Feb 2011
CRANKCASE 5. Type III appendix 1. SOC profile appendix 1. SOC profile 27 Jan. 2011 DURABILITY 7. Type V (including the specific test procedure and factor calculation) 27 Jan. 2011 COLD 8. Type VI appendix 3. Utility Factor end of May X+1 Type III delete ? Impendix 3. Utility Factor X+2 Type III delete ? Impendix 3. Utility Factor X+3 Type IV TED Impendix 3. Type V X+4 Type V Phase II Y+5 Type VI Phase II		IDLE	4. Type II			
EVAPO 6. Type IV appendix 2. SOC compensati/base document : R101/Annex8/Appendix 2 (including the specific test procedure and factor calculation) appendix 3. Utility Factor 27 Jan. 2011 (including the specific test procedure and factor calculation) V COLD 8. Type VI appendix. SOC profile Att Type II delete ? Impendix 2 Impendix 3	CRA	NKCASE	5. Type III			
DURABILITY 7. Type V (including the specific test procedure and factor calculation) end of May appendix. SOC profile X+1 Type II delete ?		EVAPO	6. Type IV			27 Jan. 2011
COLD 8. Type VI appendix. SOC profile new appendix 3. Utility Factor end of May X+1 Type II delete ?	DU				(including the specific test procedure and factor calculation)	
appendix. SOC profile X+1 Type II delete ? Image: Constraint of the second seco				new	appendix 3. Utility Factor	end of May
X+1 Type II delete ? X+2 Type III delete ? X+3 Type IV TBD X+4 Type V Phase II X+5 Type VI Phase II			<i>,</i> ,			,
X+2Type IIIdelete ?X+3Type IVTBDX+4Type VPhase IIX+5Type VIPhase II			appendix. SOC profile			
X+2Type IIIdelete ?X+3Type IVTBDX+4Type VPhase IIX+5Type VIPhase II						
X+3 Type IV TBD X+4 Type V Phase II X+5 Type VI Phase II		•		X+1	Type II delete ?	
X+3 Type IV TBD X+4 Type V Phase II X+5 Type VI Phase II				X+5		
X+4 Type V Phase II X+5 Type VI Phase II				AT2		
X+5 Type VI Phase II				X+3	Type IV TBD	
				X+4	Туре V	Phase II
X+6 Type ? (high altitude) Phase II				X+5	Type VI	Phase II
				X+6	Type ? (high altitude)	Phase II

	tech/polit /overlap	A/P/OI	Item	Issue	Action	Vehicle	Date of discussion
1	tec	OI	Utility factor	The us and jp regulation has methods which include statistical analysis. (EU:25km)	These methods will be considered.	PHEV	September
2	tec	A	Energy consumption test condition	"Battery temperature requirements" : What does it mean ?> "T℃ of the test" ? need to precise this wording	Follow recommendation from ICE group regarding ambient temperature, in phase 1 only normal ambient temperature and in phase 2 consider cold ambient temperature. Follow recommendations from ICE group except	EV	agreed
З	tec/Overla	OI	Road load	 Issue for vehicle with no mechanical neutral gear consider the charging/recharging electrical energy during deceleration : to guaranty the same behavior on the "road" and on the chassis dyno. 	Follow recommendations from ICE group except in cases where there are differences for example no mechanical neutral gear. Agreed to consider minimum requirement. This will make flexibility for future technical development and prevent judgment variation by contracting	ALL	9.5.2011
3 bis	tec/Overla	OI	Road load	Coast Down Mode : there is a need for a coast down mode and where there are special requirement for electrified vehicles this will be addressed by the Elab subgroup.	To be discussed (see T&E proposal)	ALL	9.5.2011
4	tec/Overla	OI	Weighting factor	prescribed cycle. (like as electrified vehicles for only urban)	follow development in the DHC group. Vehicles that will have problem following the driving cycle will be considered by the DHC group.	ALL	after DHC completed
5	tec	А	Emission worst test : to merge row 5 and row 29	General opinion to avoid to large number of tests. Only Japanese regulation has worst emission test for CD mode.	out of GTR scope Japanese worst emission test is out of gtr scope Same with No29	PHEV	agreed
6	6 tec	OI	Run in mileage	Run in mileage for test	300km or more		1.6.2011
7	tec	OI for EV and for PHEV	Charging condition	to not regulate the possibility to soak outdoor. (proposed by Jp); Remark : actually maybe still an OI for PHEV (electric range impact) as well. Please to explain which country(ies) has (have) a problem to perform the charge of the	It could be a safety issue for by some contracting parties if we do not allow charging outdoor.	PHEV/EV	1.6.2011
8	8 tec	A	Charging method	charging method	manufacture's recommended	PHEV/EV	agreed
c) tec	A- P	Charging time	Soak time:12 hr or more, less than 36hr.Charging time: Stop with full charged. 4.5. The Lab-process group has decided to have 2 alternatives for the soak time: Alt 1: This conditioning shall be carried out for at least six hours and continue until the engine oil temperature and coolant, if any, are within ± 2 K of the set point temperature of the room. At the request of the manufacturer, forced cooling down could be used with open bonnet, appropriate use of cooling fan. Alt.2: This conditioning shall be carried out at least 12 hours and maximum 36 hours, with closed bonnet in soak area environment without using a fan. So, before the test CD test for EV and OVC HEV, we propose to keep the choose between both options during the soak time with specific provision for the charge of the battery	Upper limit for charging time is 36 hr. To be discussed	PHEV/EV	1.6.2011

	tech/polit /overlap	A/P/OI	Item	Issue	Action	Vehicle	Date of discussion
10		OL P	criteria for end of charging	which is the criteria "plug-off" : indication of charging completed from the vehicle and starting within 1 hour from plug off test procedure shall be applied (ACEA proposal)		ev/phev	1.6.2011
10 bis		New OI	criteria for end of charging	see § End of charge criteria : to find a consensus on the "same conditions" before and after the test.	All Charging length : losses issue to deal with as far s energy consumption calculation is concerned. Do we have to take into account such losses in the procedure ? The purpose of such a discussion is to avoid double counting	ev/phev	9.5.2011
11	tec	P and OI	Interruption condition	Less than 3 minutes interruption is possible for every one cycle. During interruption, main power may be OFF.	still an open issue. Needs the driving cycle from DHC.	ev/ <mark>phev</mark>	end of May
12	tec	OI	test termination condition	Test termination condition for range measurement	ACEA will make a proposal.	EV/PHEV	9.5.2011
13	tec	A	Stop condition	Proposed stop condition :Accel Off ,and press braking pedal when 5 km/h or lower to stop. ACEA proposal: to enable OEMs to fully take	agreement	EV	agreed
13 bis	tec/overla	OI	deceleration condition	ACEA proposal: to enable OEMs to fully take advantage of regenerative breaking potentials, it should be allowed to disengage the clutch at deceleration periods. There may also be conventional ICE vehicle concepts with very long axle ratios where such an disengagement of the clutch would avoid problems of stalling	To be discussed	ALL	9.5.2011
14	tec	A	Initial Discharge condition	Initial Discharge condition before test: Discharge until manufacture's recommended level	agreement on the proposal and a wish that this should be optional and not a requirement. And also to add temperature condition for the discharge driving (?? To check this requirement > A priori, the T $^{\circ}$ C should be the same as the	EV	1.6.2011
15	tec	OI	Watt-hour meter measurement accuracy	US and JP:+/-2% EU:+/-0.2%		ev/phev	9.5.2011
16	tec	01	Accuracy of	JP:+/-1% F.S. EU:+/- 0.5%	To be discussed	EV/PHEV	9.5.2011
		OI	LOD of ammeter	JP:0.0001Ah (<=50A)	To be discussed	EV/PHEV	
18	tec	Ρ	RCB(SOC)	Definition;Rename " SOC" to "RCB". RESS(Rechargeable energy storage system) ECB(RESS Charge Balance)	To be discussed	ALL	agreed

	tech/polit /overlap	A/P/OI	Item	Issue	Action	Vehicle	Date of discussion
19	tec	A	RCB(SOC)	For CS mode, it could be necessary to compensate the CO2/fuel consumption based on SOC balance RCB to obtain correct value. (for CD mode, no need to compensate).	Need results about the driving cycle from the DHC group to continue the discussion. Same with No26	PHEV	agreed
20	tec	01	CD test	calculation method for CD test (fuel	To be discussed	PHEV	beginning of July
21	tec	OI	: CO2 compensation	Separation point of CD mode and CS mode in one cycle is agreed but the method on how is still an open issue.	To be discussed	PHEV	beginning of July
22	tec	Ρ	Shorten the test	Current requirement (full charge to empty) is basic procedure. As an option, need to adapt the shorten procedure to reduce testing burden (i. e. SAE J1634)	To be discussed	ev/phev	beginning of July
24	Overlap with ICE	OI	Ambient Air Correction	Open issue from ICE group. Intake air emission should be subtracted from tail	To be considered. Follow ICE group.	ALL	follow ICE
25	Tec	OI	For detection of CS condition : RCB break off criteria	Japan proposal:SAE J1711 : NEC* (as % of Fuel consumption) ACEA proposal : absolute NEC* as a % of cycle energy demand * NEC = Net Energy Change = RCB x nominal voltage of RESS	To be discussed in next phone meeting and F to F meeting in Zurich	PHEV	beginning of July
25 bis	New tec	OI	For detection of CS condition : RCB break off criteria	Wh> new O.I. to be discussed with EC / JRC, other experts to find an acceptable way to measure in safety conditions or to pick-up the voltage information from the can ? If the absolute NEC is not measurable for safety reason and the CAN solution not accepted, we will have to finde an alternative proposal	To be discussed	PHEV	beginning of July
26	New tec	A	RCB correction	JAMA and ACEA agree to only correct CO2 and fuel consumption. No relevance for pollutant emissions because no relationship between RCB and pollutant emisisons		NOVC HEV and PHEV in CS test	beginning of July

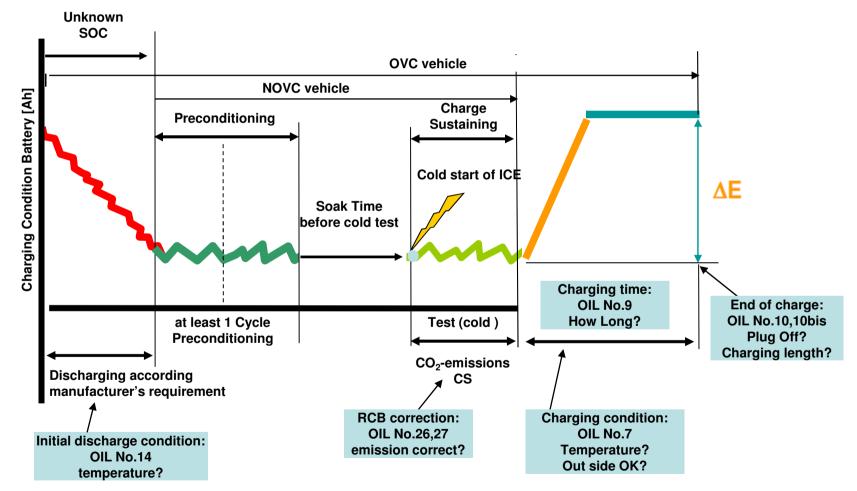
These open Issues will be discussed according to E-Lab group schedule.

	tech/polit /overlap	A/P/OI	Item	Issue	Action	Vehicle	Date of discussion
26 bis	New tec	OI	RCB correction	that could give clarity for the need of a correction. Japan is of the opinion that since there is correction for CO2 there is no extra burden for the manufacturer and that correction for critical emissions could be applied. Comment from Japan, additional pollutants will be regulated in the WLTP process. The Japanese government will require to show to influence of different RCB.	Especially, if there is relationship between RCB and pollutants emissions but in any cases the pollutants emission comply with the limit value : should we need to correct as well ? (Zurich)	NOVC HEV and PHEV in CS test	beginning of July
27	tec	OI	RCB correction criteria (window definition) CO2- related	fuel energy) in which there is no RCB correction. Japan does not agree. But JAMA coul agree with ACEA as per a reasonable window	ACEA will make a proposal until 18th March : RCB window without correction needed; in case of exceeding the 1% (of fuelenergy used) a correction calculation is required.	NOV HEV and PHEV in CS test	beginning of July
28	tec	A	CS test achievement :	Only Japanese regulation: If necessary, to conf	Japan will confirm the necessity and reason. Japan agreed to delete this criteria.	PHEV	agreed
30	tec	OI	energy efficiency Calculation of electric consumption of CD range	Rcdc : to be checked)	ACEA/JAPAN will provide the concrete calculation sample, then discuss its advantage/disadvantage	PHEV	beginning of July
31	tec	OI	AER City	There is an interest for EV and OVC HEV with low power engine and even with full capable engine to consider such an electric range like AER city (which means low speed part(s) of the WLTC). As far as NOVC HEV are concerned, we have to consider the interest to get this pure electric driving information with	To discuss with all together and especially along with the european Commission.	EV/OVC HEV	beginning of July
32	tec	Р	performance info.	additional performance item(s) may be necessary	EC ask JRC? for study	EV/PHEV	September
33	tec/overla	OI	gear box/multi modes	tests to perform for pollutants emissions and CO2/fuel consumption	To check if it is transposable to electrified vehicles ? To be discussed	All	1.6.2011
34	tec	A	CD test : pollutants emissions compliance	emission standards. ACEA is of the opinion that	Final decision of the group confirmed on 31/03/2011 : agreement to remove such requirement (additional tests) from the GTR and to let it only at the regional request that is to say at the Japanese government request if needed.	PHEV	September

Proposal OVC and NOVC Hybrids at WLTP / Charge Sustaining Test

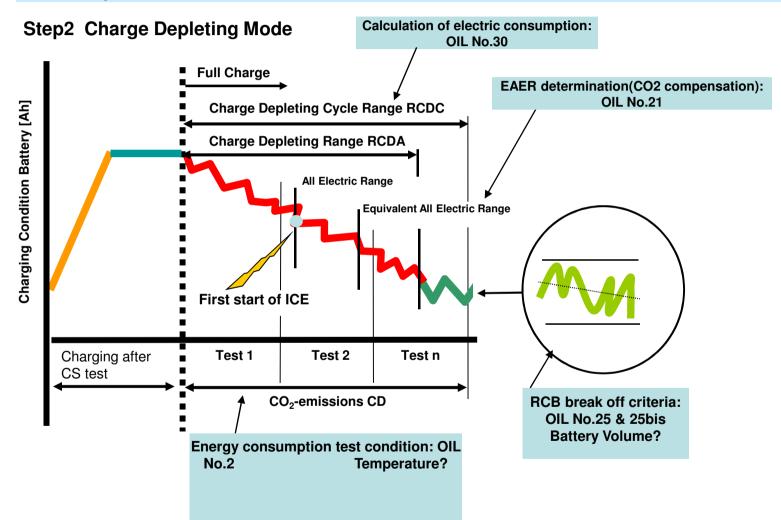
Overview, methodology for determination of fuel and electric energy consumptions and emissions:

step 1 Charge Sustaining Mode

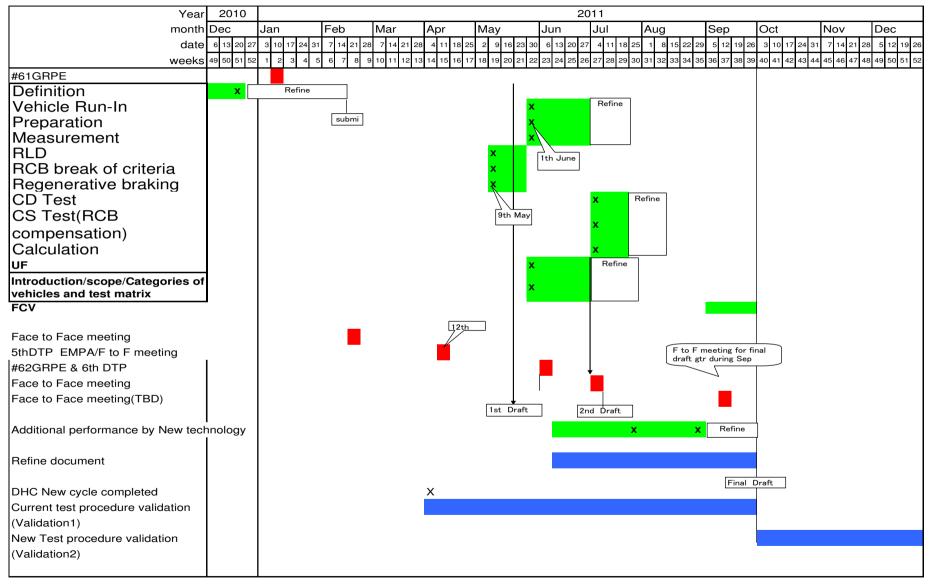


Proposal for on OVC Hybrids at WLTP / Charge Depleting Test

Overview, methodology for determination of different ranges, fuel and electric energy consumptions and emissions:



Road map for gtr draft



X: phone conference Face to Face meeting