

# **Summary of 8<sup>th</sup> WLTP-DHC Meeting**

**9 June 2011  
Palais des Nations, Geneva**

1. Current status
2. Open issue list
3. Regional weighting
4. Mode construction
5. Validation Plan
6. Next action
7. Next meeting

# 1. Current Status

## (1) In-use Data Collection

(as of 9 June 2011)

Region	In-use Data	Traffic Statistical Information
EU	Completed	Completed
India	Completed	Completed
Japan	Completed	Completed
Korea	Completed	Completed
USA	Completed	Completed
China		-

→ Due to tight schedule, made a decision to move forward developing the harmonized cycle without Chinese data.

(2) Methodology → It was agreed by DHC group  
(refer to WLTP-DHC-06-03e.rev1)

(3) Threshold speed → It was agreed by DHC group  
(refer to WLTP-DHC-07-02e)

**60**                      **80**                      **110 (km/h)**  
▼                            ▼                            ▼  
LOW → MIDDLE → HIGH → Ex-HIGH

## 2.1. Open Issues -1

Informal document No. **GRPE-62-14**  
(62nd GRPE, 9-10 June 2011, agenda item 3(a))

	Issues	Discussion points	Status / Proposed Actions
1	Deadline for submission of driving data <b>CLOSED</b>	a) India and China requested deadline be extended to May	<b>Decided to start development of new cycle after 8<sup>th</sup> DHC meeting. Later data submission is still open for analysis.</b>
2	Regional Weighting when developing the WLTC <b>CLOSED</b>	a) traffic volume b) same weighting c) compromised weighting	<b>It was agreed to adopt the traffic volume ratio during the 8<sup>th</sup> DHC meeting</b>
3	Threshold Speed for L/M/H <b>CLOSED</b>	a) according to DHC-06-03 b) CP's requirement	Threshold speeds of 60, 80 and 110km/h were agreed for the cycle phases during 7 <sup>th</sup> DHC meeting
4	High Phase Cycle Construction (US&EU versus other regions) <b>CLOSED</b>	a) only ONE unified cycle b) possess TWO types of High phase cycle	It was agreed to possess two (2) types of HIGH phase cycle during 7 <sup>th</sup> meeting.
5	Mode Construction	a) cold start test only b) cold start & hot soak start	Possible mode constructions are introduced during 8 <sup>th</sup> DHC meeting. Further analysis is necessary during the validation 1.

## 2.2. Open Issues -2

Informal document No. **GRPE-62-14**  
(62nd GRPE, 9-10 June 2011, agenda item 3(a))

	Issues	Discussion points	Proposed Actions
6	Unique Weighting Factor for L/M/H Phase	<ul style="list-style-type: none"> <li>a) harmonized weighting factors</li> <li>b) permit regional weighting factors</li> </ul>	<ul style="list-style-type: none"> <li>a) Is target of Informal Group</li> <li>Consider the possibility to accept b) for only CO2/Fuel consumption</li> </ul>
7	Gear Shift Points	<ul style="list-style-type: none"> <li>a) fixed points</li> <li>b) based on vehicle specification</li> <li>c) others</li> </ul>	Ms. Ericsson, Mr. Steven, JRC and JARI work together to finalize the method before developing the 1 <sup>st</sup> WLTC.
8	How to treat the vehicles which are not able to follow the prescribed cycle	<ul style="list-style-type: none"> <li>a) continue to drive with wide-open-throttle</li> <li>b) exempt the H (or M&amp;H) phase(s)</li> <li>c) others</li> </ul>	Develop the proposal during validation 1 tests.
9	Check the driving profile based on the vehicle characteristic		Analyze the in-use data based on vehicle characteristic (i.e. power to mass ratio)

### 3. 1. Regional weighting for cycle development

Informal document No. **GRPE-62-14**  
(62nd GRPE, 9-10 June 2011, agenda item 3(a))

It was discussed the following possible options for regional weighting when developing the unified driving characteristic of Low/Middle phases

Options	EU	US	India	Japan	Korea	China	Justification
1	1	1	1	1	1	-	A
2	1		1			-	B
3	Traffic volume ratio					-	C

**→DHC group has agreed to adopt the option 3  
(same logic for High/Ex-High phases)**

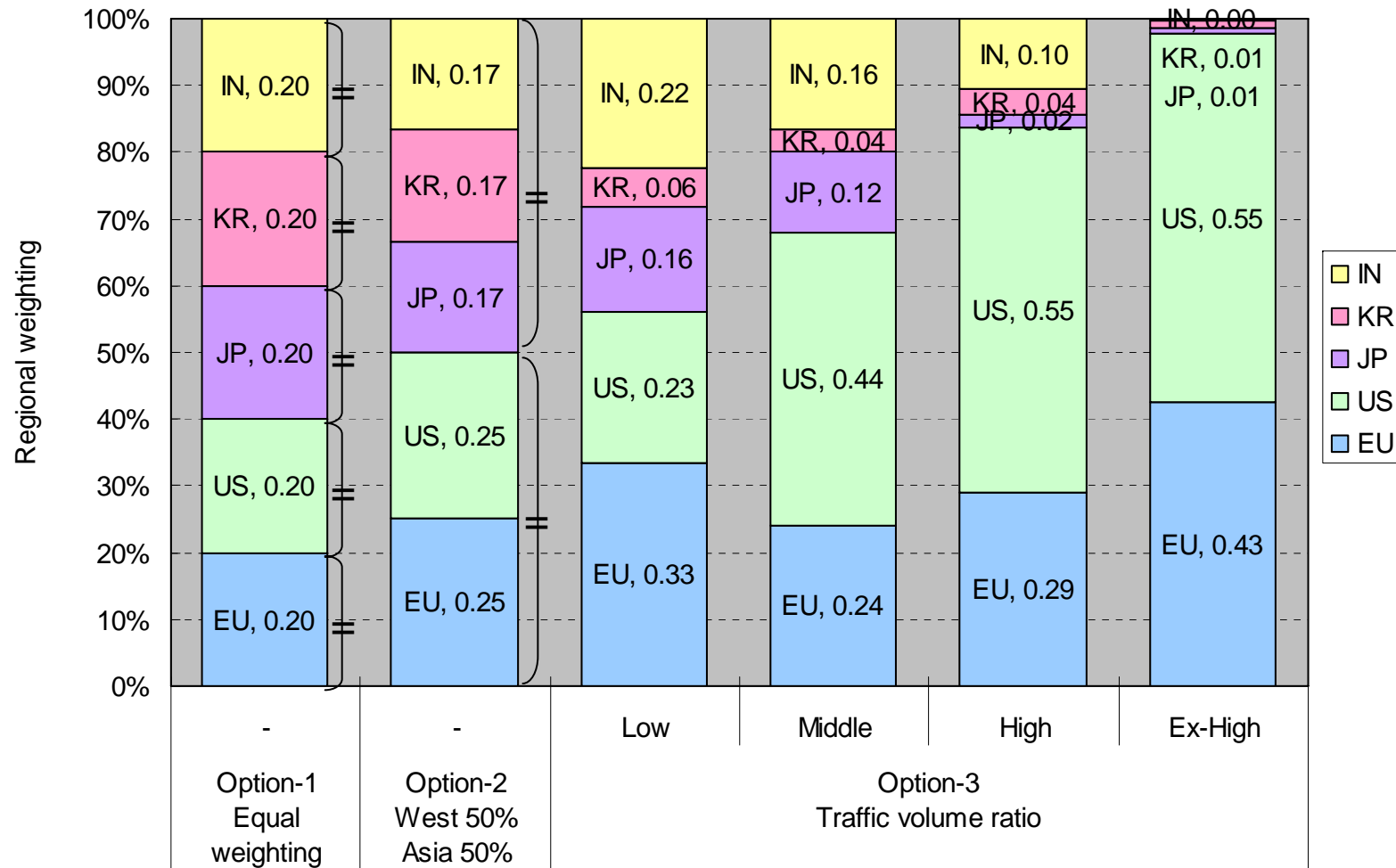
A : equal weighting for contracting parties submit in-use driving data ( consider Switzerland as part of EU region)

B : based on population, vehicle density and increasing rate

C : based on traffic volume, same logic as High/extra-High phases weighting

## 3.2. Regional weighting factor

Informal document No. **GRPE-62-14**  
(62nd GRPE, 9-10 June 2011, agenda item 3(a))



## 4.1. Mode Construction

Informal document No. **GRPE-62-14**  
(62nd GRPE, 9-10 June 2011, agenda item 3(a))

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During the 7<sup>th</sup> DHC meeting held on 16 May 2011, the possible six(6) options of mode construction were proposed.

Need to study on each option to consider the following views.

- a) Testing burden
- b) Investment (hard and/or soft)
- c) Required measurement items
- d) Low concentration pollutants
- e) Regional weighting factor
- f) others, if necessary



## 4.2. Possible mode constructions (62nd GRPE, 9-10 June 2011, agenda item 3(a))

Informal document No. **GRPE-62-14**

option	Mode construction		Brief description
	Series test	independent	
1			
2			MIDDLE&HIGH 1 sampling
3			similar to US procedure
4			1 HIGH phase
5			LOW&MIDDLE 1 sampling
6			All phases test as a series

\*) phase duration subject to change after data analysis

\*\* ) middle phase test after intermediate soak may be required for HEV vehicles

### 4.3. Case Study

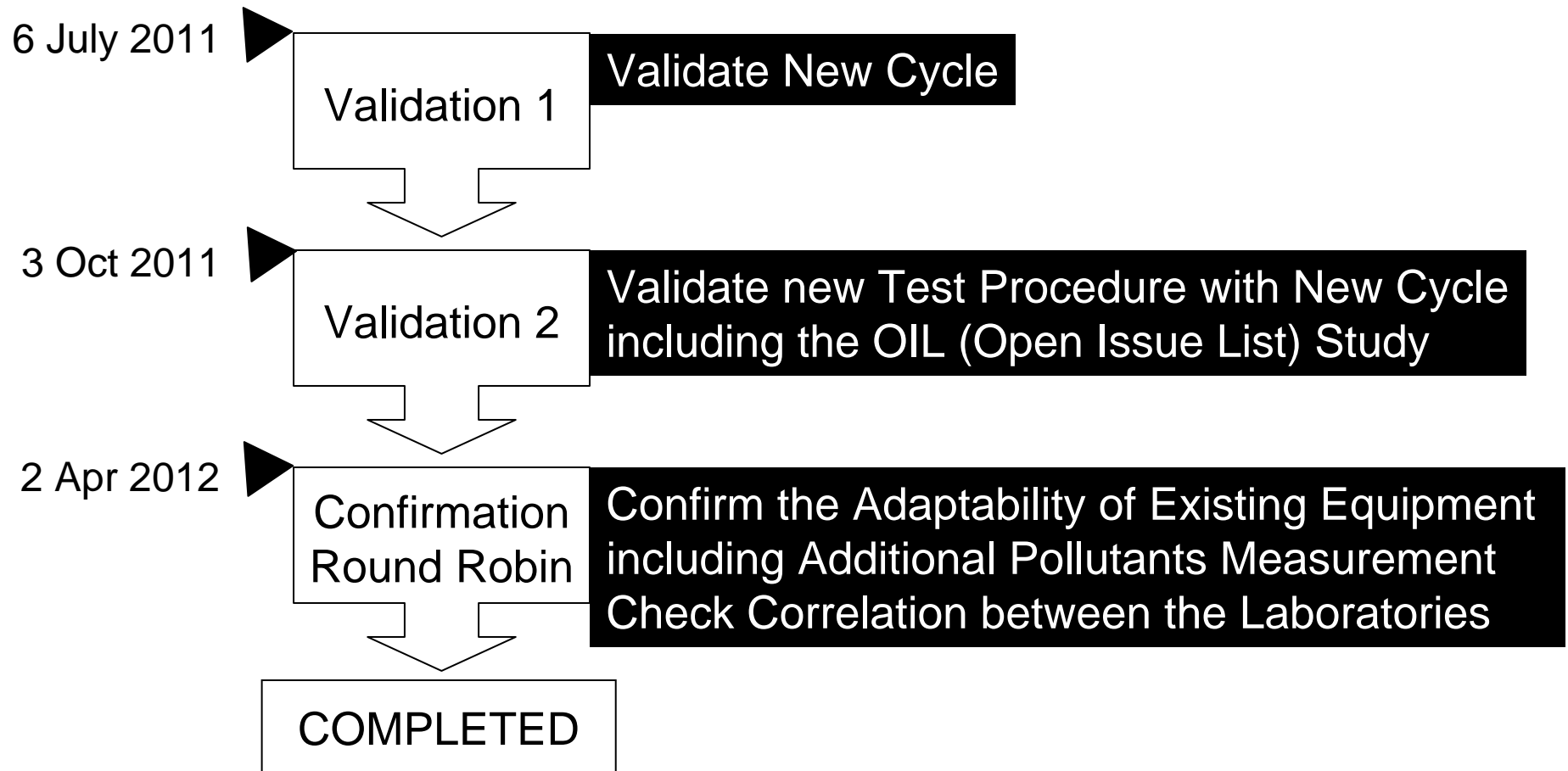
Informal document No. **GRPE-62-14**  
(62nd GRPE, 9-10 June 2011, agenda item 3(a))

**B : BAD, W : WORSE, C : CRITICAL**

Option	Testing burden	Investment (hard and/or soft)	measurement item	Low concentration pollutants	Regional WF (weighting factor)	Others (if necessary)
1						
2	<p><b>DHC member was requested to submit the written comments and/or counter proposal by next DHC meeting (6-7 July 2011).</b></p>					
3						
4						
5						
6						

## 5.1. Validation - Over View -

Informal document No. **GRPE-62-14**  
(62nd GRPE, 9-10 June 2011, agenda item 3(a))



Before start each test,

preparation phase is necessary taking into account of the followings

- 1) Test plan,
- 2) Participant CPs, Laboratories,
- 3) Vehicle Procurement
- 4) Measurement Items,
- 5) Test Criteria,
- 6) others.

## 5.2. Test Plan for Validation 1 (1)

Informal document No. **GRPE-62-14**

(62nd GRPE, 9-10 June 2011, agenda item 3(a))

### (1) Participant CP and/or Laboratories

Participating Parties	Laboratories
Japan	NTSEL, JARI, JAMA
Korea	
Europe	JRC, UTAC
OICA	ACEA, JAMA
India	
South Africa	

### (2) Test Vehicles (in Japan for example) and Test Conditions

Fuel	power to mass ratio	Sales volume	Transmission
Petrol	Low end (20~40 kW/t) : Passenger & Truck	within Top 5 sales	at least 1 vehicle
Diesel	High end (100 kW/t or more) : Passenger		
HEV/EV	Not must during validation 1 phase		

#### Test Conditions

Cold Start Test : LOW and MIDDLE phases

Hot Start Test : ALL phases

## 5.2. Test Plan for Validation 1 (2)

Informal document No. **GRPE-62-14**

(62nd GRPE, 9-10 June 2011, agenda item 3(a))

### (3) Measurement Items and Test Criteria

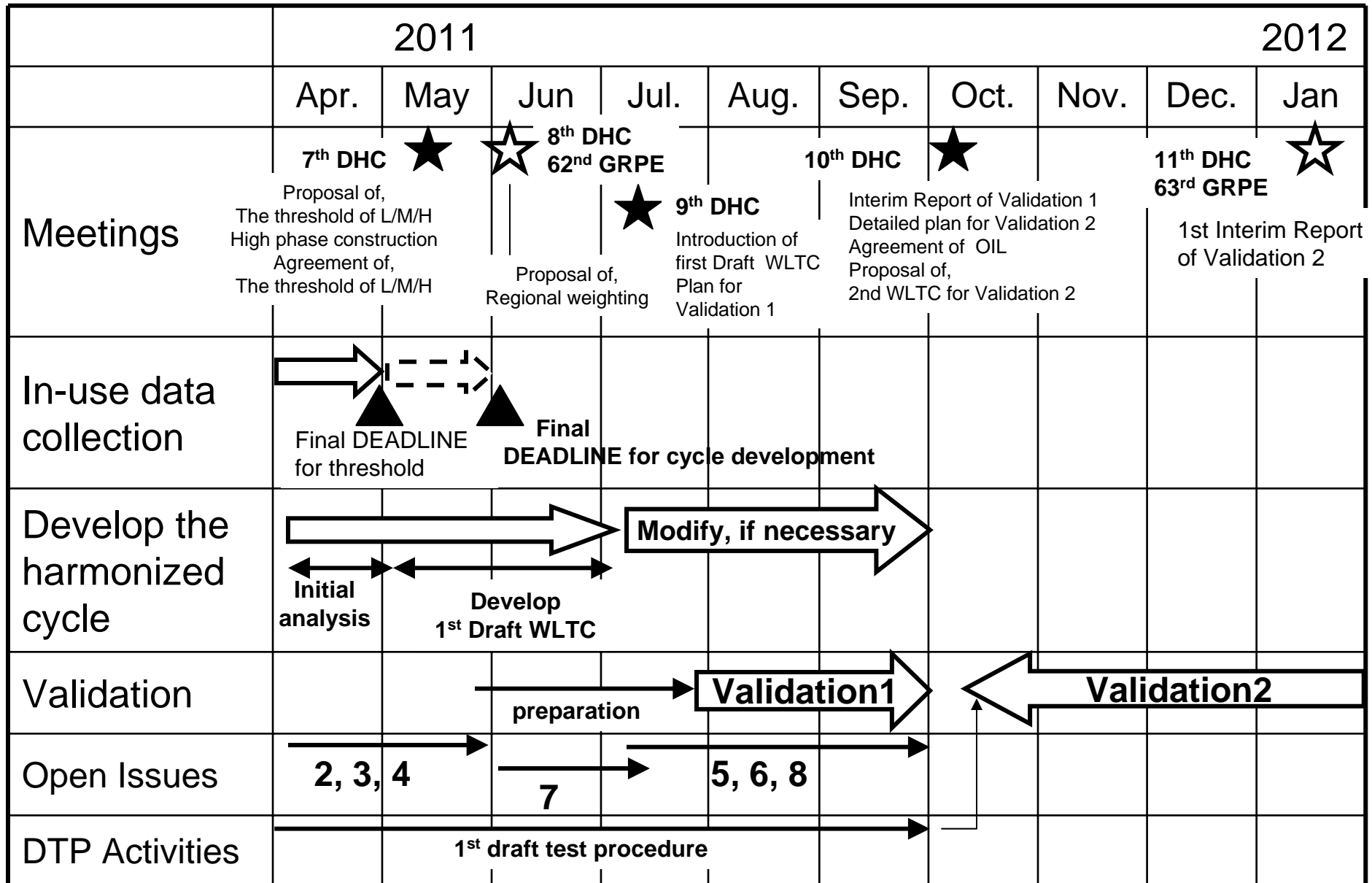
**# of tests : at least 3 times**

Measurement Items	Methods	Criteria
Driving Trace (each mount)	Driving index by SAE J2951 Driven roller counter(10Hz or more) Acceleration ratio	+/- 3%
Tire Speed	Difference between roller speed and tire speed	No slip
Gear Shift Points	Appropriate shift point Clutch off point	+/- 3kph within +/-1sec
Accel Pedal Angle	Positional Sensor	TBD
Difference of Test Drivers	Drive Trace Questionnaire	TBD
* Pollutants - CO2 - (each phase)	Bag (& continuous) sampling	NA
* Pollutants - others - (each phase)	Bag (& continuous) sampling	NA

\*) NOT MUST

# 6. Next Actions

Informal document No. **GRPE-62-14**  
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## 7. Next Meeting

Informal document No. **GRPE-62-14**  
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Next 9<sup>th</sup> DHC meeting was set on 6~7 July 2011 at Stockholm.

Main agenda items are

- 1. Introduce the world-wide harmonized cycle ver.1**
2. Continue to discuss on mode construction

Detailed information will be noticed by 17 June 2011.

Comments should be sent to Mr. Ichikawa,  
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