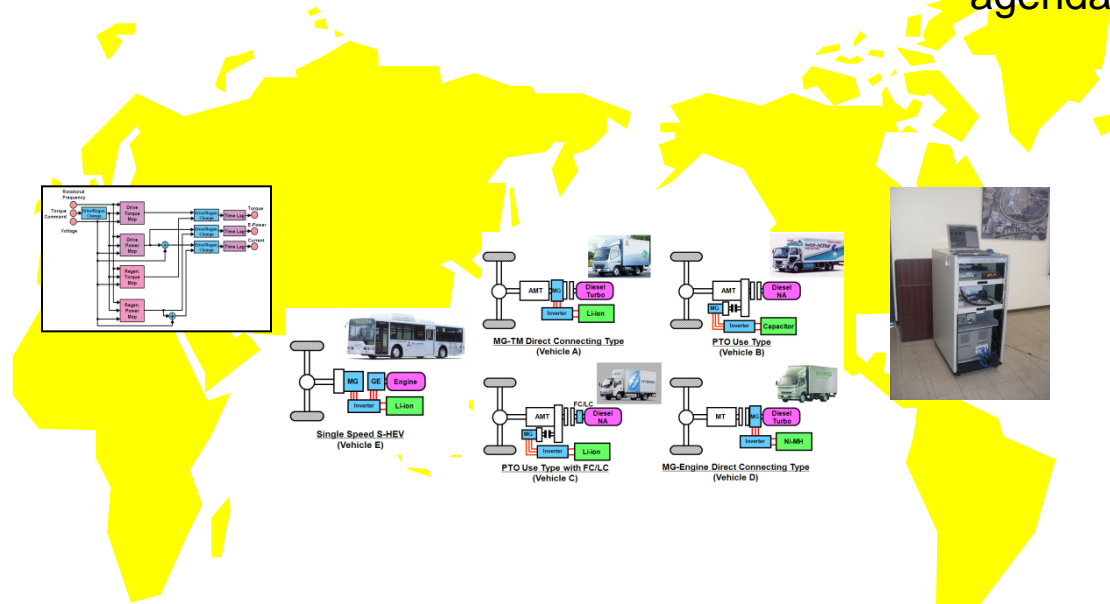




UNITED NATIONS

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# GRPE Informal Working Group on Heavy Duty Hybrids

Report to GRPE 65  
Geneva, 17 January 2013



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# Summary of 11th HDH Meeting

- **The results of the 11th meeting in Ottawa on 10 to 12 October 2012 are summarized, as follows:**
  - **Validation test program 1 was started by the universities with the development of driver models and a first proposal of thermal models**
  - **The budget for validation test program 1 is shared between OICA and EU COM**
  - **Sweden will provide budget for the development of the component library**
  - **Concerns have been raised that the thermal models might complicate the simulation process; simple solutions are preferable over very accurate modelling**
  - **OICA announced the availability of at least 2 vehicles for validation test program 2**
  - **The universities were asked to establish regular exchange of information with JASIC**
  - **The Japanese regulation Kokujikan 281 will be the basis for drafting the gtr**
  - **PTO operation will be excluded from the current work program**
  - **Acceptance criteria for validation test program 2 need to be agreed upon**



# Summary of 12th HDH Meeting

- **The results of the 12th meeting in Geneva on 15 January 2013 are summarized, as follows:**
- **Validation test program 1 is on schedule with driver models finished and thermal models nearly completed**
  - **Drive cycle investigations of serial hybrid (task 1) for the different options were presented**
  - **Japan expressed clear preference for the vehicle based approach over the powerpack based HILS approach**
  - **Adaptation of SILS for parallel hybrid (task 2) started in November 2012, proposal for setting up a data bus system as basis for the component library was presented**
  - **OICA proposal to use SILS for validation test program 2 was accepted**
  - **It was agreed that the gtr would require HILS and not permit the use of SILS**
  - **The revised roadmap and project planning on page 7 were agreed**
  - **Establishment of a drafting group was agreed; nomination of experts should be communicated by the end of January 2013**
  - **EU-COM was asked to provide budget for hiring a technical secretary of the drafting group**



# Status of HDH Work Program

## ➤ Validation test program 1

- Validation test program 1 based on SILS (Software-in-the-loop simulation) started in June 2012
- Development of driver models has been completed
- Several meetings with OEMs took place, others will follow
- Simple thermal models are being developed
- Drive cycle investigations of serial hybrid are under work
- Drive cycle investigations of parallel hybrid will start, soon

## ➤ Next steps

- Assessment of chassis dyno and powerpack testing will continue on the basis of input from Contracting Parties by October 2013
- Validation test program 2 with real HVs will start around March 2013
- Development of first gtr draft



# HDH Terms of Reference & Timing

## ➤ Terms of reference (ECE/TRANS/WP.29/GRPE/60, Annex III)

- The IWG shall submit the final report of the investigation on HILS including the assessment of chassis dyno and powerpack testing for consideration to GRPE at its 65<sup>th</sup> session in January 2013
- The target completion date for the work of the informal group on HILS shall be the 163<sup>rd</sup> session of WP.29 in June 2014
- This target completion date and the necessity of a chassis dyno test as a second step will be reviewed by WP.29 at its 160<sup>th</sup> session in June 2013 taking into account the assessment by GRPE of the final report on HILS
- Current HDH mandate ends in June 2014

## ➤ Revised timing

- Submission of final report and of informal gtr document to GRPE at its 67<sup>th</sup> session in January 2014
- Submission of official gtr document to GRPE at its 68<sup>th</sup> session in June 2014
- Need for extension of mandate, if necessary, will be submitted to GRPE at its 66<sup>th</sup> session in June 2013



# Updated Roadmap & Project Planning

Activity	2 0 1 1				2 0 1 2				2 0 1 3				2 0 1 4																	
	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11
HILS model verification	[Purple bar]				[Purple bar]																									
Component testing verification	[Purple bar]				[Purple bar]																									
Extension to non-electric hybrids	[Purple bar]				[Purple bar]																									
PTO operation	[Purple bar]				[Purple bar]																									
WHVC weighting & scaling factors	[Purple bar]				[Purple bar]																									
Assessment of chassis dyno procedure	[Yellow bar]				[Yellow bar]																									
Assessment of powerpack testing	[Yellow bar]				[Yellow bar]																									
7th meeting				X																										
8th meeting					X																									
9th meeting						X																								
Interim report							[Checkered flag]																							
Validation test program 1																														
10th meeting								X																						
11th meeting										X																				
Validation test program 2																														
Drafting text for gtr n°4																														
12th meeting												X																		
Evaluation & conclusions																														
13th meeting													X																	
Final report																														
14th meeting														X																
15th meeting																														
16th meeting																														
GRPE adoption (17th meeting)																														
WP.29 adoption																														

➔ Final report to GRPE delayed to 67th session, GRPE adoption to 68th session

➔ Timing for WP.29 adoption delayed to 164th WP.29 (11/2014)



# Next Meetings

- **The next meetings are scheduled as follows:**
  - **The 13th meeting will be on 21/22 March 2013 in Borlänge, Sweden**
  - **The 1st meeting of the Drafting Group will be on 19/20 March 2013 in Borlänge, Sweden**
  - **The 14th meeting will be on 04 June 2013 in Geneva (to be confirmed)**
  - **The 15th meeting will be from 23 to 25 October 2013 in San Francisco (to be confirmed)**
  - **The 16th meeting will be in January 2014 in Geneva (to be confirmed)**
  
- **GRPE is asked to**
  - **Reserve a half day for the 14th HDH meeting during the 66th GRPE session in June 2013**