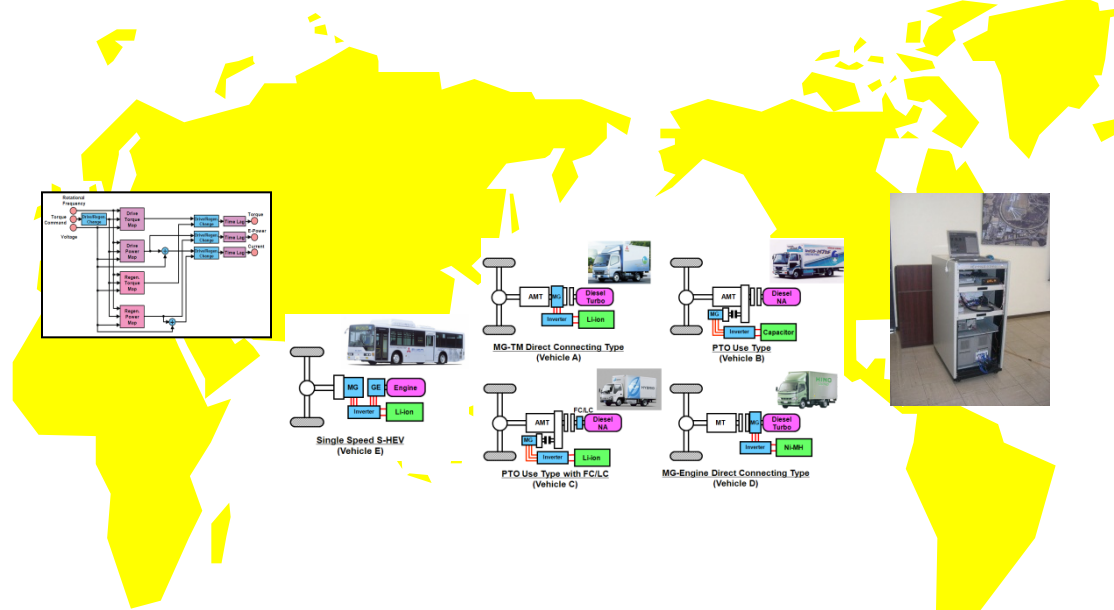




UNITED NATIONS

Working Paper No. HDH-15-10e  
(15th HDH meeting, 24 to 25 October 2013)



# GRPE Informal Working Group on Heavy Duty Hybrids

15th HDH, San Francisco, 24 to 25 October 2013



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# Summary of 14th HDH Meeting

- **The results of the 14th meeting in Geneva on 04 June 2013 are summarized, as follows:**
- **The results of validation test program 1 with the new model structure were presented by the institutes; the new model structure includes a comprehensive component model library, a new signal naming convention and restructured vehicle models**
  - **The models will be further developed based on feedback from stakeholders**
  - **The drive cycle investigations resulted in different road gradients from the two calculation methods; application of road gradients to WHVC needs further investigation during validation test program 2 incl. the use of road gradients fixed in the gtr**
  - **Validation test program 2 at JRC has started in May; the details of the test program were defined between JRC and the participating OEMs**
  - **OICA confirmed that individual members will arrange for HILS testing at EPA and will start discussions with EPA on the most suitable approach**
  - **OICA informed that they will provide budget for model verification by the institutes during validation test program 2**
  - **EPA requested to include powertrain testing and verification in the gtr, and to validate the HILS method with emission results, and confirmed to take part in validation test program 2**
  - **The proposal by Chair and Secretary of using the HILS CO<sub>2</sub> result as input to regional CO<sub>2</sub> regulations was agreed**
  - **The HDH drafting group has been established and had two meetings, so far; the Technical Secretary has not yet been appointed, but it is hoped that the budget will be available in June**



# Topics for 15th HDH Meeting

- **Assessment of chassis dyno and powerpack testing**
  - Final discussion
- **Validation test program 2: Status and further steps**
- **Revised timing of HDH work program**
- **Other topics**
  - WHVC road gradients (HDH-15-04 by the institutes, HDH-15-05 by Japan)
  - Plug-in hybrids (HDH-15-03 by OICA)
  - WHVC weighting factors (HDH-15-07 by TU Graz)
  - Vehicle categorization (HDH-15-06 by OICA)
  - Master ECU
  - Hybrid system family (brainstorming)



# Status of Validation Test Programs

## ➤ Validation test program 1 completed

- Japanese open source model has been re-structured, and component library and new signal naming convention has been developed
- Serial hybrid and parallel hybrid models are available for testing
- Final release of models by 31/10/2013

## ➤ Validation test program 2

- Validation test program 2 with real HVs started at JRC with in May 2013
- Test with two vehicles (Volvo & MAN) completed
- Data evaluation still ongoing, will be completed by December 2013
- Determination of road gradients is under discussion
- HILS verification method (alternative to chassis dyno) will be investigated
- OICA members will consider HILS testing at EPA



# Drafting Group

## ➤ Status

- Two meetings in March and May 2013 w/o technical secretary
- Technical secretary was installed in September 2013
- The 3rd meeting was held on 22 and 23 October 2013 in San Francisco
- Current approach for gtr amendment: Annex 8 (HILS) & Annex 9 (powertrain test)

## ➤ In order to meet the November 2014 deadline for WP.29 adoption, the following timeline is required:

- Informal document for GRPE 68 with text finalized by December & open issues list to be submitted by 20/12/13
- Formal document for GRPE 69 on the basis of the GRPE 68 informal document & some items of the open issues list to be submitted by 01/03/14
- Informal document for GRPE 69 with the remainder of the open issues list, and complementing the formal document to be submitted by 28/05/14
- Adoption of both documents by GRPE 69





# Next Meetings

- **The next HDH meetings are scheduled as follows:**
  - **The 16th meeting will be on 07 January 2014 in Geneva**
  - **The 17th meeting is proposed to be on 08 and 09 April 2014 in Madrid**
  - **The 18th meeting will be on 03 June 2014 in Geneva (to be confirmed)**
  
- **The next drafting group meetings are scheduled as follows:**
  - **Web meetings planned on 14/11, 27/11 and 12/12 2013**
  - **The 4th meeting is provisionally planned on 18/12 2013 in Brussels**
  - **The 5th meeting will be planned for Jan/Feb 2014 (Japan?)**
  - **The final meeting is planned on 10 and 11 April 2014 (Madrid)**
  - **Further web meeting(s) in May 2014, if needed**