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
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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
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
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 65th session in January 2013
- The target completion date for the work of the informal group on HILS shall be the 163rd 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 160th 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 67th session in January 2014
- Submission of official gtr document to GRPE at its 68th session in June 2014
- Need for extension of mandate, if necessary, will be submitted to GRPE at its 66th session in June 2013
Updated Roadmap & Project Planning

**Activity**
- HILS model verification
- Component testing verification
- Extension to non-electric hybrids
- PTO operation
- WHVC weighting & scaling factors
- Assessment of chassis dyno procedure
- Assessment of powerpack testing
- 7th meeting
- 8th meeting
- 9th meeting
- Interim report
- Validation test program 1
- 10th meeting
- 11th meeting
- Validation test program 2
- Drafting text for gtr n°4
- 12th meeting
- Evaluation & conclusions
- 13th meeting
- Final report
- 14th meeting
- 15th meeting
- 16th meeting
- GRPE adoption (17th meeting)
- WP.29 adoption

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- 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