

D R A F T Minutes of the 3rd Meeting
UN-ECE/GRPE ad hoc WG "Hydrogen Vehicles – Onboard Storage Systems"
4./5. 06.2002 in Nabern (DaimlerChrysler)

June 4

Agenda item 1.1
"Welcome"

The meeting participants were welcomed by Mr. R Bauer (DC), the host of the 3rd meeting and Mr. C Albus (Chairman of the ad hoc WG).

An attendance list was circulated and distributed to the attendees during the meeting

Agenda item 1.2
"Agenda"

Mr. Albus proposed the following revisions to the agenda:

- Short info about the process of drafts as ECE's and/or GTR's new agenda item 1.5
- New agenda item 5.1 "Principal question from the JASIC proposal – Retro-fit included or not
- Pull ahead of agenda item 7.4 behind agenda item 5.4
- Lunch break for June 5 at 12:00

No objections, revised agenda agreed as proposed

Meeting minutes to be written by Mr. Udo Klein (Ford)

Agenda item 1.3
"Draft Minutes"

The minutes of the 2nd meeting were accepted without any comments

Agenda item 1.4
"Documents"

The following documents were distributed ahead of the 3rd meeting for discussion at the meeting:

- Comments on CGH2
- Revision no. 9 CGH2
- Comments from Powertec
- Proposal from JASIC
- ISO Report

Mr. Albus thanked everybody who was involved in compiling these documents.

Agenda item 1.5
"ECE and/or GTR"

This was already discussed at the GRPE Meeting in January – no final decision, also USA, Canada and ISO voted for GTR since this is the only possibility for USA and Canada to adopt the new regulations. A final decision was expected from the March WP29 meeting.

The question to go ECE and/or GTR however was not discussed at this meeting at all.

Agenda item 1.5

"continued"

It was concluded that

- the subject has to be brought up in a meeting with Mr. Gauvin, since it was not discussed at the last WP29 meeting.
- the question if ECE or GTR should not be discussed at the ad hoc WG. The ad hoc WG should concentrate on technical issues and prepare drafts for the GRPE
- ECE/GTR processing to be discussed at WP29/GRPE

Agenda item 2.1

"Survey on FCV's"

The presentation "Survey on Fuel Cell Vehicle development 1994-2002" was given by Mr. Bauer from D/C and can be downloaded from the EIHP web-page <http://www.eihp.org>

Agenda item 2.2

"CGH2 storage systems"

This presentation was given by Dr. Friedelmeyer from D/C, who is responsible for the development of CGH2 tank systems at D/C. This presentation can also be downloaded from the EIHP web-page.

Agenda item 3

"Draft Regulation CGH2"

Mr. P Adams (Volvo) and Mr. P Heggem (Raufoss) rev. no. 9 of the CGH2 draft Rev. 9 is dated May 6, 2002 and was published May 14, 2002. Changes are not recorded or highlighted due to number and scope and to maintain clarity of the document.

Major changes between revisions 8 & 9 are

- Annex 7 restructured to:
 - Remove design related requirements & restrictions
 - Improve logic
- Take into account:
 - Comments received on Rev. 8
 - Practical experience of using ECE R110 for CNG components & vehicles
- All pressures now based on Working Pressure in agreement with ISO
- Introduction of self-testing concept for less critical components
- Introduction of option for container bundles
- Improve logic in Part I: 6 & Part II: 14
- Removal of:
 - Duplicated requirements
 - Unnecessary cross references
 - Unnecessary informative statements
- Numerous editorial improvements

The presentation is available from the EIHP web-page

Agenda item 4

"Nebus drive"

The short drive with a fuel cell bus (Nebus) is not covered in the minutes.

Agenda item 5

Discussions on draft Regulation CGH2

New agenda item 5.1

**"JASIC proposal -
Retro-fit"**

Retro-fit Vehicles and After Market Installation

The drafts are supposed to apply for OEM's only and **not** for retro-fits and After Market Installations.

The meeting participants agreed

New agenda item 5.2
"ISO Report"

Mr. R Dey (ISO/TC 197) presented the ISO Report

Comparison was done to Rev. 8. ISO would like to have the chance to compare the ISO drafts to Rev. 9

The chairman and several members of the group proposed to form a small "technical working group" to discuss the differences between the ISO drafts and Rev. 9 and to agree what to be included in the EIHP draft.

The remaining open items and the results of the "technical working group" to be brought up for discussion at the next ad hoc WG meeting.

The meeting agreed to the proposal from the chairman.

Part I of the ISO Report was discussed with following comments from:

- J Orthenburger - ISO/CD 15869 covers components incl. hydrogen container, missing installation requirements
- D Stoll Why a Standard for a complete vehicle
- JP Cheynet ISO/TC22 only will develop Standards if deemed necessary by regulation makers to ease and support a Regulation

During the lunch break meeting dates and ad hoc WG participants for the "technical working group" were discussed.

The meeting to discuss the differences between ISO and EIHP drafts (CGH2 and LH2) will take place July 29/30 at BMW in Munich. An alternative date was agreed for September 4/5 in Vancouver in case a second meeting is required

The meeting requested Mr. R Dey (ISO/TC 197) to address the lack of an ISO Standard on common Pressure Definitions for different gases and to advise progress to the ad hoc WG at their next meeting.

He will also revise Part I of the ISO Report based on Rev. 9 and the Powertec comments

New agenda item 5.3
"Red. no. of cert. tests"

The JASIC proposal to reduce the number of certification tests on specific components was presented by Mr. Y Fujimoto (Toyota/JASIC).

Proposed to reduce the number of tests from currently 13 down to 3.

Three proposals were discussed:

- Current requirement – 13 tests as per Rev. 9
- JASIC proposal – 3 tests (container, container automatic shutoff valve, PRD)
Rational: 1) Single-point of failures of container, automatic shutoff valve and PRD may cause unwanted large amount of fuel discharge
2) Unwanted large amount of fuel discharge from the other parts can be prevented by vehicle safety management
- Powertec proposal – "Upstream components (high pressure side) only

No consensus was achieved.

Results of the first opinion poll:

- JASIC insists on his proposal
- Netherlands and Germany would be flexible
- France objects any reduction in number of certification test

Consequently:

Leave CGH2 draft as is today – deletions can easily be done once agreed

The meeting agreed currently not to in a position to make a final decision, more info and discussion required.

Agenda item 5.3
"continued"

- Mr. Albus to provide info to GRPE and to discuss JASIC proposal with ad hoc WG representatives from countries not participated in the 3rd meeting
- Obtain feedback on JASIC proposal from GRPE, other ad hoc WG countries and organizations
- Members are invited to provide the ad hoc WG with more background info and quantitative data on levels of safety in preparation of the next meeting

New agenda item 5.4
"Powertec comments"

The Powertec comments on EHIP draft (Rev. 8) were discussed. Some of the discrepancies were eliminated in Rev. 9, however, some differences like no. of drop tests and no. of pressure cycles after drop testing are still to be eliminated.
Consensus to achieved in the "technical working group" meeting July 29/30

New agenda item 5.6
"Other discussion .."

Two paragraphs of the CGH2 draft to be re-worded:
14.2.1. to be re-worded by Mr. Gilles van Eegher
14.3.2.1 to be re-worded by Mrs. Judith Orthenburger
Proposals to be sent to Mr. Paul Adams by end of June latest.

June 5

New agenda item 5.5
"Periodic re-qualification"

Para. 14.10.1 of the CGH2 draft was discussed lengthly.
Mrs. J Orthenburger suggested to leave Para. 14.10.1 as is, but according to TUEV and BAM there is a need for national requirements
Conclusion Very important item for the future
Not a new requirement for these draft regulations
It is not the task of this ad hoc WG to solve periodic inspection items
Leave Para. 14.10.1 unchanged
EIHP will provide status on 96/96/EC development

Agenda item 6
"Time schedule CGH2"

Comments on Rev. 9 to be sent to Mr. Paul Adams by end of June at the latest, incl. comments from ISO. He will than draft Rev. 10 in preparation of the "technical working group" meeting

Agenda item 7
"Discussion LH2 draft"

Request from NL (Andre' Rijnders) to add the following text to Annex 8A – 2.2.4.5. "must not explode"
Agreed by the meeting

It also was agreed that bonfire requirements are not sufficiently described, also in ECE-R67 & ECE-R110.
Mr. Rijnders will call up a meeting with experts from other groups to discuss and address this issue. However, the corresponding text in the EIHP draft will remain unchanged

Agenda item 7.1
"ISO Report"

Mr. R Dey (ISO/TC 197) presented the ISO Report
Comparison is based on Rev. 11, but does not include latest comments on LH2 draft. Would have to be included.

Process proposal presented by Mr. R Dey – obtaining consensus between EIHP drafts and ISO drafts

- Agenda item 7.1
"continued"
- It was agreed to set up "technical working meeting" with representatives from ISO and the ad hoc WG to discuss the differences between current EIHP and ISO drafts based on latest revisions and comments
Participants from the ad hoc WG will be:
LH2: D Stoll, J Orthenburger, A Rijnders
CGH2: P Adams, A Rijnders, P Heggem, R Bauer
Two dates were agreed: July 29/30 in Munich, alt. Sept. 4/5 in Vancouver (if additional meeting is required).
- Agenda item 7.1
"continued"
- Following next steps were agreed:
- Comparison from ISO on latest revisions/comments within a week
 - End June comments on EIHP drafts
 - End June comments on ISO report part 2
 - End July "technical working group" meeting
 - Two weeks later results to the ad hoc WG chairman
 - Chairman to distribute to ad hoc WG members
- Agenda item 7.2
"Red. no. of cert. tests"
- It was agreed **not** to reduce the number of certification tests on LH2
- Agenda item 7.3
"Labeling"
- NL insists on labels for H2 buses (CGH2 & LH2) like for CNG & LNG buses
Meeting agreed to add the requirements for the labels (see also ECE-R 67 & ECE-R 110 for details and position)
- Agenda item 7.4
"Periodic re-qualification"
- as for CGH2, this item (Para. 14.15) was discussed lengthy
see agenda item 5.5 for the need of national requirements
However, text of Para. 14.15 remains unchanged
- Agenda item 7.5
"Other discussion"
- Para 14.9.4. was deleted, see also page 1 of LH2 comments
no further comments
- Agenda item 8
"Time schedule LH2"
- Dates for the "technical working group" meeting as for CGH2
July 29/30 in Munich
Sept. 5/6 in Vancouver (alternative date for second meeting if req.)
End June final comments for LH2 draft to D Stoll
End Sept. results from "technical working group" to chairman if Sept. mtg. is req., otherwise timing as for CGH2
- Agenda item 9
"Further actions"
- Next ad hoc WG meeting will take place in Cologne on November 14-15, hosted by Ford. Relevant information will be provided in due time.
Next steps/actions
- 4 weeks ahead of next meeting delivery of more detailed info on reduction of certification tests
 - proposals for re-worded paragraphs (14.2.1. from Mr. Eegert and 14.3.2.1. from Mrs. Orthenburger) to Paul Adams resp. D Stoll by end of June
 - info to next GRPE by C Albus – no formal document
 - check possibility/acceptance of an informal meeting with GRPE at next GRPE meeting
- Agenda item 10
"Other Business"
- No other business was discussed-
14:30 end of meeting

