

DRAFT MINUTES
5TH GTR-7 MEETING, GENEVA
6 DECEMBER, 2010

Mr Frost welcomed all participants to the 5th meeting of the GTR-7 Phase 2 Informal Group (IG). He advised that the focus for the meeting was to review and agree the new Terms of Reference for the IG.

It was agreed that, due to the late circulation of the minutes from the Berlin meeting, these would be reviewed at the next meeting.

Approval of the Agenda: Item 3 (TEG progress review) was moved down the agenda. There were no other amendments to the agenda.

1 Develop Proposed Terms of Reference for consideration by GRSP and WP.29

1.1 Review of the Content of the current ToR taking account of the proposal of the US to WP.29; and

1.2 Establish the delivery timetable for the agreed objective

Asada-san gave a brief overview of the proposal made earlier in 2010, and the latest proposal:

- Japan proposed Phase-2 Step-1 to focus on low-speed minor neck injury issue, similar to Phase 1 but using BioRID II for a short-term dynamic solution, then Step-2 to focus on mid-speed and long-term injury in the slightly longer term.
- Several sub-options were presented, including
 - Transitional period using Step 1 from 2011, with optional BioRID II or Hybrid III test, because of industry concerns about such a quick change from the Hybrid III test in Phase 1. The Step 2 BioRID test would then be implemented in 2014.
 - Revise GTR-7 to specify harmonised dynamic evaluation based on the injury criteria using BioRID II, submitted to GRSP in December 2012. Then harmonisation of upright postures and tests at higher speed and mid speed (suggested by the US) to be considered 2014 and later. Asada-san noted that the US commented previously that there is no guarantee of a harmonised dummy by end 2012 – this would depend on the results of their research programme.
 - If the injury criteria research does not produce the desired results in the timescale, then Japan proposed that the group will consider submitting dynamic seat testing using the BioRID II as an alternative to the Hybrid III test.

Kubota-san gave a brief summary of the GTR-7 discussion at the last WP.29 meeting:

- EC and Japan proposed to extend to end 2012 to finalise the <18 km/hr test, but the US proposed to take higher speed impacts into account by end 2012. AC.3 suggested that this discussion should be concluded in the GRSP and IG and submitted to WP.29 in March.

Mrs Meyerson gave an overview of the US position:

- The US notes that there are AIS 2 and 3 injuries in crashes greater than 18 km/hr, but that AIS 1 injuries are the most common. The latest analysis suggests that it may make more sense to look at short-term and long-term injuries, rather than low-speed or high-speed. EEVC paper did a good job of highlighting a delta-v 15-25 km/hr. US research looking at 24 km/hr, which seems to be the upper limit for using BioRID II as well as for long-term injury.
- It is recommended that the IG investigate what pulse would be best for long-term injury. Mrs Meyerson commented that the US does not have any particular pulse in mind at this time, but noted that the pulse should be examined with the benefit analysis once the IG get the BioRID and injury criteria finalised. The essence of the new text proposed by the US is to look at what the pulse should be, once we have the dummy and criteria. The proposal keeps the previous timetable, because it is expected that deciding on a pulse and doing the benefit analysis should be relatively quick.
- The US want to run one more PMHS, but already have enough to start work with Dr Ono on the criteria as discussed at the 4th meeting in September.

Mr Frost summarised that the low-speed and high-speed definition came from the US, because the group was looking at an equivalent to the Hybrid III test, but that the new proposal is to have a single tool and a single pulse. He noted that this fits well with the ultimate goal of the IG, and is based on the evidence from the IG.

Asada-san asked whether the IG is to focus on AIS 1 long-term injury only, or still consider the AIS 2 and 3 injury levels. Mrs Meyerson commented that the US would need to leave this open until the NHTSA research is finalised: if the test and BioRID II can identify higher severity injuries then it may be useful to include them; if not then we cannot.

There was a short discussion regarding the proportion of AIS 2 and 3 injuries that could be attributed to a deficiency in the seat or head restraint that could potentially be addressed by GTR-7. Mrs Meyerson noted that NHTSA will consider them further, in case this is helpful for the benefit analysis.

Asada-san noted that there was a lot of experience with tests at 16 km/hr, but very little at higher delta-v, and asked whether the IG thought it feasible to gain this experience by the end of 2012. It was also noted that the repeatability and reproducibility (R&R) may depend on the pulse, so if the pulse is finalised late in the process the R&R work may have to be repeated.

Mr Frost concluded that the group should focus on short and long-term injury, at the lower end of the AIS spectrum. In addition, if possible, we will address higher AIS injuries.

The proposed Terms of Reference text was updated based on the discussion in the IG. All delegates agreed that the updated Terms of Reference should be recommended to GRSP for transmission to WP.29.

2 Review of the Progress of the TEG

Mr Lorenz gave an overview of the progress from the TEG meeting held 29 November.

Overview of meetings: 9 meetings this year, next meeting in February 2011.

Skull cap solution has solved the neck force Fx issue identified by GM.

- Technical bulletin issued and the wrong skull cap can't be fitted;
- Check included in the new PADI.

Harmonised drawings

- Drawing package available on UNECE website;
- Draft PADI acknowledged during last Webex – should be on UNECE web site this week;
- Check list included in PADI to check for correct build level.

Improved certification procedure and corridors

- New certification sled designed, built and tested;
- Test with head restraint added, which seems to identify differences between dummies;
- Change of jacket can change dummy response, so an annual certification procedure for the jacket has been developed;
- Draft certification procedure document has been issued and will be worked on at the next webex;
- Currently only two sleds, but Humanetics have committed to get sleds to those labs that have asked for them by the end of December 2010;
- TEG agreed to use the new procedure without HR from January 2011, and to collect as much data with the HR and jacket tests as possible for the February webex.

Spine set-up for different seat back angles

- Postponed to a second phase because problems with the jacket have been identified when using a more upright spine, and OICA found that most cars have a design torso angle of 20-25°, although a much higher proportion in Japan.

R&R

- Influencing issues: jacket stiffness, cable exit at head, friction of steel ropes, lower spine?
- Differences to be identified by the new certification procedures;
- However, must be sure that we are presenting on the same dummy status / build level;
- With the PADI, should be able to get all dummies up to the same build level. All dummies s/n 100 and higher already comply. Number 100 was released only last year, so most dummies not compliant. Need to go to e.g. BioRID II-h. We should only use dummies that have passed the new certification procedures.

Mr Frost noted that there was a significant suggestion at the last TEG, which was to classify the latest spec as BioRID II-h. Data being presented in the future should declare the dummy build level. If it is not II-h, the non-compliances should be documented. Ideally, people should update their dummy to II-h.

Mr Locke asked if the new certification sleds that will be delivered by the end of December will include the head restraint section. Mr Lorenz said that he understands that it will be included, but will confirm this with Humanetics next week.

3 Drawing Package

3.1 Dummy drawing version control and UNECE codification

Mr Frost gave an overview of the discussion of dummy drawing version control at the last WP.29.

The outcome of the discussion was that WP.29 has asked the IG to draft a proposal for them to consider. Mr Frost and Mrs Meyerson have met with the UNECE Secretariat to progress this issue:

Humanetics has provided the TEG with a drawing package that describes BioRID for the purposes of regulation: these are available on the UNECE website. This is adequate until there are firm proposals for regulation at which point it is considered necessary to have a more robust filing structure.

The objective is to find a repository for drawings for use in both the 1958 and 1998 Agreements that provide clear referencing and version control. The Secretariat suggested that the IG propose Special Resolution 2 (SR2) on test tools, using BioRID as a first example, to WP.29 (Hybrid III, WorldSid and Q dummies could be added). Functionally, both SR1 (1998 Agreement) and RE3 (1958 Agreement) would refer to a single definition of the dummy in the new SR2.

The concept would be for SR2 to include discrete Parts or Annexes for each test tool. This would provide for a unique reference number for each tool. Within each Part or Annex would be individual sections dedicated to, for example, drawings, certification procedures, description or purpose for use of the dummy.

Mr Lorenz noted that this sort of document control is needed, but was concerned about the administration of the process. It was explained that if, in the future, there is a change to a test tool, one of the technical committees will consider the changes necessary to the documentation held within SR2, and WP.29 will be asked to approve it; the change will be transparent from the numbering system.

Mr Frost noted that the IG need to propose an approach to WP.29 in March, so that it can be discussed in the GR's so that a decision can be made at the November WP.29 meeting. All delegates agreed that the Chairman and others should work on a document outlining a proposal for dummy drawing and other document version control for discussion at the next GTR-7 meeting, prior to making a proposal to WP.29 in March.

3.2 Follow-up new SAE J826 3D CAD status

A letter from Dr Smythe was reviewed by the IG. It seems agreed that J826 made before 1989 were made by several different companies, and the dimensional accuracy is considered unknown by the SAE HADD committee.

There were no updates on the VDA work that was discussed at the last meeting.

Decision: It was agreed to keep the SAE item on the agenda to see what the conclusions of the SAE HADD committee work are.

4 Head Restraint Height

4.1 Review NL and OICA study results

Presentation from Mr Ammerlaan:

The NL has continued work on this issue and plan to meet OICA soon to discuss.

Neck/torso links are a simplification of the 3D H-point machine, which is a simplification of the UMTRI 50th male. The NL has now defined the torso/neck links for a NL 95th male. It should be simple to adapt the GTR-7 method to use the figures for the NL 95th male. This is easy to do for static HR, but not so for dynamic HR.

Mr Ammerlaan noted that BioRID is smaller than the European 50th male, and that some reassurance is needed that protection will be offered for a better range of the population. He suggested that this could be explored in a smaller group.

OICA enquired whether BioRID is sufficient to cover the head restraint height and backset, or whether NL want to see some sort of static test as well as the BioRID dynamic test. Mr Ammerlaan replied that the BioRID is the UMTRI 50th male stature, which is smaller than modern 50th percentile male, so not sufficient to check HR height and backset for taller occupants. He recognised that the

static test is a good start, but the NL position is to also have a backset measurement on a higher level. Therefore the NL would like to have the BioRID test to check performance of e.g. reactive head restraints for the size of the dummy, plus some assessment of whether the same protection would be offered to taller occupants, at least in terms of geometry (not accounting for the extra mass etc. of a taller occupant).

Action HA to let Mr Frost know if there likely to be sufficient progress on head restraint effective height for this to be on the agenda for February. JA/OICA noted that they should have a better idea of timescales following discussions alongside GRSP this week.

5 Review of the Progress of the IG

Presentation from Asada-san:

It was noted that Asada-san would prepare an informal document for GRSP during the same week as the informal group and that he would welcome any contributions from delegates. Particular issues for comment from the IG include:

- Is Feb 2011 sufficient time for the effective height work;
- There was a comment from OICA that the biofidelity assessment has to be made for different seatback angles with the BioRID II, the Hybrid III and the RID-3D;
- BMW comment that the BioRID should only be adopted when it can be used with all torso angles. Comment requested;
- SAE J826 CAD model – already beyond the timescale previously stated;
- BMW comment that there is a very tight timescale for getting a BioRID that works with more upright torso angles.

6 Future Meetings

The 6th meeting is scheduled to take place week beginning 28 February, hosted by the EC in Brussels. It is understood that the GTR-7 meeting will be early in that week, followed by WorldSID and Pole Side Impact. It is not known if the EC venue will have webex facilities. Mr Frost proposed to make it a joint meeting with the TEG. Mr Lorenz noted that the TEG will meet one week before in order to feed in to the GTR-7 IG meeting.

Mr Frost proposed not to schedule the 7th meeting after February pending the progress of the TEG but he noted that there was a possibility to meet in Washington in the week prior to ESV.

Action All to provide feedback on whether a meeting in the week beginning 6 June 2011 (the week before ESV) in the US would be acceptable.

7 AoB

No other business.

8 Decisions and Actions

Decision: All delegates agreed that the updated Terms of Reference text reviewed in the meeting should be put forward to GRSP with a recommendation to transmit them to WP.29.

Decision: All delegates agreed that it was appropriate to implement good version control for the drawings and other documents relating to each dummy held on the UNECE web site.

Decision: All delegates agreed that the Chairman and others should work on a document outlining a proposal for dummy drawing and other document version control for discussion at the next GTR-7 meeting, prior to making a proposal to WP.29 in March.

Decision: It was agreed to keep the SAE item on the agenda to see what the conclusions of the SAE HADD committee work are.

Action HA to let Mr Frost know if there likely to be sufficient progress on head restraint effective height for this to be on the agenda for February. JA/OICA noted that they should have a better idea of timescales following discussions alongside GRSP this week.

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