

5th Meeting of the IWG GTR No. 7
Draft Status Report of the
BioRID TEG

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Chairman

Geneva, 6th December 2010

Meetings

- 22nd January 2010: last official Global BioRID User (WebEX) Meeting (GBUM) chaired by Mike Beebe (Denton)
- 3rd February 2010: joint with IWG GTR No. 7 - Tokyo
- 15th of March 2010: 1st WebEX meeting (hosted by Denton)
- 28th April 2010: 2nd WebEX Meeting (hosted by FTSS)
- 13th July 2010: 3rd WebEX meeting (hosted by Humanetics)
- 7th September 2010: 4th WebEX meeting (hosted by Humanetics)
- 21st-22nd September 2010: joint with IWG GTR No. 7 – Berlin
- 29th November 2010: 5th WebEx – (hosted by Humanetics)
- 6th December 2010: joint with IWG GTR No. 7 – Geneva
- February 2011: 6th WebEx meeting

Issues under Discussion / Research

- Neck forces Fx (GM, Denton) – scull cap, PADI
- Harmonized Drawings (Humanetics)
- Improved certification procedure and corridors (Humanetics)
- Spine set-up for different seat back angles (Japan, PBD) – postponed
- Repeatability and Reproducibility (Ford, PDB et al.) – data collection with new certification procedure

Progress reached so far (1)

Neck Forces Fx (issue raised by GM)

- An issue was raised with regard to rising neck forces Fx during a test series. Investigations of Denton came to the conclusion that wrongly a HIII skull cap was mounted (interference with the cable wiring).
- ✓ Denton provided a solution how to avoid the mounting of a wrong skull cap on the BioRID (technical bulletin).
- ✓ Check included in the new PADI.

Progress reached so far (2)

Harmonization of Drawings (Humanetics)

Procedures for Assembly,
Disassembly, and Inspection
(PADI)
of the BioRID II Rear Impact
Crash Test Dummy



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✓ Drawing package available on UNECE website.

- Draft PADI acknowledged during last WebEx – expected on UNECE website soon

- Check list included in PADI to check for correct build level

Appendix E - BioRID II Design Checklist

| BioRID II Design Checklist | | ✓ |
|---|---|---|
|  | VERIFY THE SKULL CAP D IS FOR BROAD, AND THAT IT HAS THE CORRECT SIZE CABLE CLEARANCE SLOT. <small>REFER TO THE PADI FOR DETAILED INFO</small> | |
|  | VERIFY SKULL AND CAP COINCIDES THROUGH EXISTING FEASIBLE COORDINATES. <small>REFER TO THE PADI FOR DETAILED INFO</small> | |
|  | VERIFY THE CORRECT SIZE HOLES IN THE HEAD TO CLEAR THE FRONT CABLE ASSEMBLY. <small>(127 MM)</small> <small>REFER TO THE PADI FOR DETAILED INFO</small> | |
|  | VERIFY THE CORRECT HEAD IS INSTALLED ON SKULL CAP HEAD CELL VERIFYING. <small>REFER TO THE PADI FOR DETAILED INFO</small> | |

Progress reached so far (3)

Improved certification procedure and corridors (Humanetics et al.)

Background: the (old) standard certification procedure does not sufficiently differentiate between dummies and has no surrogate for a head restraint as limitation for the head rotation motion during certification impact. For the generation of the pulse a foam was used what could cause some problems (R&R, due to different batches etc.)

- New certification sled(s) designed, built and tested
- Artificial head restraint added
- Jacket test added
- First ideas of certification corridors proposed by Humanetics on the basis of data from different BioRIDs
- Draft document on new certification procedure provided and discussed during 5th WebEx.
- Humanetics confirmed that new sleds will be provided by end of 2010
- Group agreed to encourage the use the new procedure (without head restraints) from January 2011 on and collect as much data as possible for the next meeting (with head restraint and jacket, also)

Certification Procedures
for the
BioRID II
Crash Test Dummy

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Progress reached so far (4)

Spine set-up for different seat back angles (Japan, PBD)

Background: at present the BioRID is designed/used for dynamic tests at torso angles/seat back angles around 25 degree. For some cars (e.g. Vans) the torso/seat design angle lays around 20 degree or even steeper. For regulatory purposes dynamic testing at design angle is appropriate.

- New spine adjustment tool provided by Denton
- Tests performed by PDB and Japan
- At steeper torso angle interaction of the jacket
- Data provided by OICA that at majority of cars seat back angle is between 20 and 25 degrees
- Further work is needed – postponed to a future phase of GTR No. 7?

Progress reached so far (5)

Repeatability and Reproducibility (Humanetics, Ford, PDB et al.)

Several issues identified which seems to influence R & R

- Issues: jacket (e.g. stiffness), cable exit at head, friction of steel ropes, lower spine?
- Differences are assumed to be identified by new certification procedure(s)
- General issue if results are presented/compared: are we talking about the same dummy status/built level/up-grade?
- Future test data should be based on the use of BioRIDs that have passed the new draft certification procedure and are of latest built level as defined by PADI checklist (should be the case from serial no. 100 onwards)

General remarks / Outlook

- Drawings, draft PADI, check list for built level, draft certification procedure available
- Attendance at the WebEx meetings is good
- Fruitful discussions and in general good support by the attending organisations
- Testing/research/further investigations in progress

Thank you for your attention!

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