

9th Meeting of the IWG GTR No. 7
Draft Status Report of the
BioRID TEG

Bernd Lorenz (BASt)
Chairman

London, 19th March 2012

Meetings I

- 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
- 7th February 2011: 6th WebEx – (hosted by Humanetics)
- 28th February 2011: joint with IWG GTR No. 7 – Brussels
- 14th April 2011: 7th WebEx – (hosted by Humanetics)

Meetings II

- 1st June 2011: 8th WebEx – (hosted by Humanetics)
- 10th June 2011: joint with IWG GTR No. 7 – Washington D.C.
- 5th/6th December 2011: joint with IWG GTR No. 7 – Geneva
- 14th December 2012: 9th WebEx – (hosted by Humanetics)
- 31st January 2012: 10th WebEx – (hosted by Humanetics)
- 23rd February 2012: face to face meeting and 11th WebEx – Bast, Bergisch Gladbach
- 14th March 2012: 12th WebEx – (hosted by Humanetics)
- 19th March 2012: joint with IWG GTR No. 7 – London

- Next TEG meeting: 14th of May: 13th WebEx

Issues under Discussion / Research

- Improved certification procedure (without head restraint) in use and corridors need to be tightened
- Repeatability and Reproducibility – data collection with new certification procedure
- Jacket Test introduced
- Data collection of certification procedure with head restraint and higher pendulum mass
- Additional certification tests and better control of material properties might be needed
- Data analysis of test series conducted on behalf of EC/TRL, OSRP, VRTC, PDB is ongoing -> some results/findings to be presented at this meeting

Progress reached so far (1)

Harmonization of Drawings (Humanetics)

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



November 2010

- ✓ Drawing package available on UNECE website

http://www.unece.org/trans/main/wp29/wp29wgs/wp29grsp/gtr7phase2_3_drawing_package.html

- Draft PADI available on UNECE website (TEGID-23)
- Check list included in PADI to check for correct build level
- **Still some feed back needed** – please provide information/result of built level check to Humanetics

Appendix E – BioRID II Design Checklist

BioRID II Design Checklist		✓
	VERIFY THE SKULL CAP IS FOR BIORID, AND THAT IT HAS THE CORRECT SIZE CABLE CLEARANCE SLOT. <small>REFER TO CTR 0901 GLE ARL 004 ARJ 00</small>	
	VERIFY SKULL AND CAP CONTAINS ERROR PROOFING PIN-HOLE COMBINATION. <small>REFER TO CTR 0901 GLE ARL 004 ARJ 00</small>	
	VERIFY THE CORRECT SIZE HOLES IN THE HEAD TO CLEAR THE FRONT CABLE ADJUSTERS (127 MM). <small>REFER TO CTR 0901 GLE ARL 004</small>	
	VERIFY THE CORRECT HEAD IS INSTALLED (NON-SKULL CAP LOAD CELL VERSION). <small>REFER TO CTR 0901 GLE ARL 00</small>	

Progress reached so far (2)

Improved certification procedure and corridors (Humanetics et al.)

- New certification sled(s) in use
- Tests with and without head restraint
- Jacket test added
- First draft certification corridors proposed by Humanetics on the basis of data from different BioRIDs
- All BioRIDs used in test programs for TEG activities shall be of built level according PADI and certified according to the new procedure.
- Certification data (with head restraint and jacket, also) shall be provided to Humanetics for tightening corridors.

Based on new test results (EC/TRL test series):

- Pelvis certification test might be added (stiffness and geometry check)
- Quasi-static spine stiffness test proposed

Certification Procedures
for the
BioRID II
Gash Test Dummy

Version 2.0

Progress reached so far (3)

EC/TRL-test series

6 BioRID (no. 006, 007, 028, 068, 077, 100)

Swapping of parts between dummies (e.g. spine, pelvis)

Acceleration sled, lab seat, draft GTR 7-pulse (JNCAP style)



Progress reached so far (4)

Repeatability and Reproducibility (EC/TRL, OSRP, VRTC, Humanetics, PDB et al.)

Several issues identified which seems to influence R & R

Issues:

- jacket (e.g. stiffness) -> jacket cert test added
- neck pins -> better control of tolerances
- pelvis stiffness and geometry -> pelvis cert test might be added, geometry check/control may be needed
- Bumpers -> better control of material properties needed
- Certification corridors need to be tightened, more data needed

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
- New certification procedure in use and further cert tests under development
- EC/TRL test series delivered important results/findings
(-> report from Dr. David Hynd at this meeting)
- Some of the findings need to be verified by additional testing (e.g. swapping of dummy parts, bumpers).
- In general repeatability of BioRID good (kinematics ok)
- Reproducibility of some channels poor

Thank you for your attention!

Bernd Lorenz

Bundesanstalt für Straßenwesen (BASt)

Brüderstraße 53

D-51427 Bergisch Gladbach

lorenz@bast.de