

<b><u>Minutes</u></b>	
<b><u>5<sup>th</sup> meeting</u></b>	
<b><u>Task Force regarding Review and Update Certification Corridor (TF-RUCC) under the IG GTR9-PH2</u></b>	
<b>Venue</b>	<b>Web meeting</b>
<b>Date</b>	<b>30 July 2012, 13:00 - 13:50 (CET)</b>
<b>Status: Finalized</b>	

**Present:** Atsuhiko Konosu, JARI (Japan) Chairman  
 Mark Burleigh, Humanetics (UK) Secretary  
 Jan-Christopher Kolb, Bertrandt (Germany)  
 Daniel Folcini, Bertrandt (Germany)  
 Dirk-Uwe Gehring, BGS (Germany)  
 Peter Lessmann, BGS (Germany)  
 Takahiro Issiki, JARI (Japan)  
 Kurt Bambach, Humanetics, (U.S)  
 Oskar Ries, Volkswagen (Germany)  
 Carsten Hohmann, Volkswagen (Germany)  
 Michelle Chaka, Ford (U.S)  
 Sudip Bhattacharjee, Ford (U.S)  
 Sukhi Bilkhu, Chrysler (U.S)  
 Abayomi Atubushin, BMW (Germany)

**1. Welcome**

**2. Self introductions**

**3. Objectives of 5<sup>th</sup> TF-RUCC meeting.**

- Review the results from dynamic certification testing in the U.S of SN01 and Engineering round robin legs and compare to update corridor proposals which was made with BAST, JARI and Bertrandt (master lab or comparable labs) test data to accept the update corridor proposals.

**4. Adoption of the Agenda (TF-RUCC-5-01-Draft)**

- Draft (TF-RUCC-5-01-Draft) was adopted with no changes.

**5. Adoption of the Draft Minutes for the 4<sup>th</sup> TF-RUCC meeting (TF-RUCC-4-02-Draft)**

- TF-RUCC-4-02-Draft was accepted with comments from Oliver Zander (TF-RUCC-4-02-Draft-Rev.1).

**6. Ford Presentation (TF-RUCC-4-06)**

- Michelle Chaka presented 3x inverse and 3x pendulum results for SN01 and Eng leg. Results were shown to be inside the new proposed corridors except for one ligament channel. Inverse stroke phases were 170 mm acceleration, 110 free travel and 190 impact. High speed video was shown of an impact and a release.
- Dirk Gehring asked if the magnet holding the leg was released or forced. It was confirmed that it was released on impact.
- Dirk Gehring also remarked that paper sheet is used over the honeycomb to protect the Neoprene covers. Michelle Chaka confirmed this was done on later tests.
- Atsuhiko Konosu mentioned that it is better to use double sided tape on the back of the honeycomb as it is more stable to ensure good impact positioning and avoid vertical movement of honeycomb during the testing.
- In the discussion section Michelle Chaka asked if there is any intention to include the femur channels as part of the certification as it may be good to see if limits are exceeded. Dirk Gehring said it is good to look at more data to see if there are any strange signals but may not be necessary. Mark Burleigh stated that at build the femur channels are reported but this is only for quality reasons to record what performance was at build. It was requested not to include femur results in the manual as they are not in the GTR regulation. The femur stiffness clearly contributes to the injury channels as it is part of the whole leg performance. Atsuhiko said there is no proposal to establish femur corridors it is not our task at this stage.
- Michelle promised to send their presentation to the task force members as it had not yet been distributed.

**7. Humanetics Presentation (TF-RUCC-5-03, TF-RUCC-5-04)**

- Mark Burleigh presented a short presentation TF-RUCC-5-04 on SN05 an internal

leg prepared the same as the RR legs. This was tested prior to RR testing to check new rig setup. Results were good but one channel in each test had a technical problem. The pendulum channel issue was corrected.

- Dirk Gehring asked if we had any high speed video, Mark Burleigh said not yet but this is intended to be done and shared.
- Dirk Gehring also recommended that the light source for the speed vane is remotely mounted from the rig.
- Mark Burleigh presented TF-RUCC-5-04. This showed all RR results to be consistent with the previous 3 labs. Humanetics was concerned with the much narrower corridor range on Tibia-4 as this channel saw the highest reduction over time on SN04 and particularly after initial car testing (GTR-3-05) and recommended as a precaution that this channel is rechecked after some car testing as it could have serious consequences with certification. It could of course be partly due to longer rubber flesh being fitted later to SN04.
- Dirk Gehring said the Tibia-4 request should be an issue for discussion in the IG not the task force. The SN04 Tibia-4 channel apart from the first test was mostly within the new proposed corridor so does not see a big concern. He also noticed that the RR speeds in the inverse test were on the limits of the requirement and was this intended. Kurt Bambach confirmed this was not intended.
- Abayomi Otubushin requested that the Engineering leg ACL pot is retested once repaired to check result. Kurt Bambach said he will retest this leg in inverse and pendulum anyway before shipping which will also provide a check on repeatability.

## **8. Discussions**

- Atsuhiko Konosu - Humanetics and Ford can obtain comparable test results with BAST, Jari and Bertrandt so have no concern about proposing the update corridors proposals, made by BAST using BAST, JARI and Bertrandt test data, to the IG. The Tibia-4 concern is not a task force issue as task force can only test brand new legs. Therefore if the Tibia-4 concerns happen, it is a robustness issue and must be discussed in the IG.
- Mark Burleigh agreed that robustness is outside the remit for the task force and would need to be discussed in the IG but would want a comment on this concern.
- Atsuhiko Konosu will prepare a report to the IG that will be reviewed by TF-RUCC

members.

- Atsuhiko Konosu asked who had SN03. Dirk Gehring said this leg was at BAST.
- Finally Atsuhiko Konosu thanked everyone for doing a good job.

**9. Future Action Plans**

- Humanetics are to repair the ACL pot on the Engineering leg as soon as possible and ship back to Europe.

**10. Next meeting.**

- No meeting was planned

**11. A. O. B.**

- None