



EUROPEAN COMMISSION
ENTERPRISE AND INDUSTRY DIRECTORATE-GENERAL

Sustainable Growth and EU 2020
Sustainable Mobility and Automotive Industry

Meeting Minutes (Draft)
2nd Meeting of the
IG GTR9-PH2 Task Force Bumper Test Area

5 December 2012, 1:30 p.m. – 5:00 p.m.

**Bundesanstalt fuer Strassenwesen (Federal Highway Research Institute – BAST),
Fritz-Heller-Saal, Bruederstrasse 53, D-51427 Bergisch Gladbach/Germany**

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1. Opening of the meeting;

Mr Broertjes welcomed the attendees at BAST and thanked BAST for kindly hosting the meeting. Mr Broertjes chaired the meeting, Mr Kinsky provided the secretariat.

Attendees (in alphabetical order):

Peter Broertjes / European Commission
Jolyon Carroll / TRL
Richard Damm / Germany
Dirk-Uwe Gehring / BGS Boehme & Gehring
Brian Hardy / TRL
Thomas Kinsky / General Motors Europe/Opel (OICA)
Jan-Christopher Kolb / Bertrandt
Dr. Atsuhiko Konosu / JARI
Franz Roth / Audi (OICA)
Winfried Schmitt / BMW (OICA)
Antje Sipido / Ford of Europe (OICA)
Shunsuke Takagi / NTSEL
Yukou Takahashi / JASIC
Yong-Won Yoon / KATRI
Oliver Zander / BAST

Via WebEx, the following people had dialled in (in alphabetical order):

Mark Burleigh / Humanetics
Michelle Chaka / Ford (OICA)
Cort Corwin / Shape Corp.
Irina Dausse / Renault (OICA)
Devesh K. Soni / Shape Corp.

2. Adoption of agenda and 1st meeting minutes (TF-BTA-1-02);

The agenda was adopted without changes. Mr Kinsky announced that Messrs. Schmitt and Roth had volunteered to show some individual vehicle data from their company but clarified that this has not yet been an OICA position since the request to deliver data came quite late.

Mr Zander offered to show two marked vehicle models that were prepared for this purpose in BAST's lab. It was agreed that this will be done at the end of the meeting.

The minutes of the 1st meeting were reviewed. Comments had been received from Dr. Konosu and Mr Zander that were incorporated after reviewing them. The final minutes will be shared as document TF-BTA-1-02r1.

3. Update on the EC study and Terms of Reference (TRL);

Mr Carroll presented the work done by TRL so far (see document TF-BTA-2-03):

The subject of the study on behalf of the European Commission will be to investigate whether the 60 degree plane definition could be adjusted in a sensible and cost-effective way to define the corners of the bumper as being close to the side of the vehicle.

Mr Carroll pointed out that this is not the first time the 60° bumper corner definition is discussed. The definition is used in recent legislation, EEVC agreed this item a long time ago after discussing it, UNECE R42 as well as FMVSS/CMVSS 581 are using it, Euro NCAP was (and still is) using it, other legislation may also have it. However, TRL was not able to discover the original source of the 60°. Mr Carroll mentioned that it therefore may have wider implications if the definition is to be changed.

Mr Carroll mentioned that TRL first would like to compare some vehicle geometries and then intends to conduct some tests on typical car front ends to compare what is typical for the existing fleet. For this, he requested all attendees to possibly offer cars that could be tested. Mr Carroll pointed out that with the data above accident statistics could be reviewed on what the benefit will be for real life. He finalized his presentation welcoming all attendees to provide further data that support the activities.

The chair thanked Mr Carroll and kindly invited all attendees again to support TRL's activities with providing data and further information.

4. Cooperation with stakeholders:

- **Update on the exchange of data and test results if available (input from EuroNCAP and J-NCAP)**

Following the request from the last meeting, Dr. Konosu presented some data from J NCAP. J NCAP is also using the possibility to test outside the 60° bumper corners and by now, just for one out of 14 cars tested by J NCAP the possibility was applied. No energy absorbing measures were applied outside the bumper corners at this car. Test

results were pedestrian friendly within the bumper corners but not outside. All test results were used for the vehicle rating.

- **Geometries of vehicles regarding the bumper design elements (ACEA/OICA)**

Mr Roth showed one example of a vehicle on the market sold by his company (see TF-BTA-2-05). He pointed out that the Euro NCAP test zone is smaller than the actual leg protection zone. The vehicle was tested by Euro NCAP (as well as for European legislation) and performed well. He also stated that outside an area indicated in his presentation testing does not make sense since impactor rotation is too high. Finally, Mr Roth concluded that according to his opinion the car well represents the current fleet.

On request of the chair Mr Roth stated that earlier vehicle models of his company did not need to meet the requirements on pedestrian safety and therefore may not be representative. Also, he feels not able to clearly describe where the new bumper corners could be where impactor rotation still is acceptable. The current test area of the car model shown is as defined by Euro NCAP.

Mr Schmitt also showed examples from the vehicle fleet of his company (see TF-BTA-2-06). He explained that design features are used here to attract the customer but that this does not necessarily mean that the test areas are decreased.

- **Rational of current bumper corner 60° value**

No new information on this is available. The secretary mentioned that in an earlier meeting Dr. Ries / OICA/Volkswagen had been requested to contact Dr. Cesari from EEVC on this. He had reported to have done so and got the reply that according to Dr. Cesari's opinion both impactors are more two dimensional due to their design and therefore may have limited abilities to assess injuries well outside their travel direction.

Also, the secretary as well as Mr Zander pointed out that some of the information had already been provided with document GTR9-2-03.

- **Information on injury risks outside bumper corners**

For the time being, no information on this is available.

- **Update on planned EEVC legform testing and FlexPLI testing**

Mr Carroll mentioned that TRL is prepared to conduct some tests with the FlexPLI. The chair added that of course other labs are welcome to provide additional test data when testing legforms for other purposes.

- **Creation of test matrix;**

It was noted that it may be too early to already create a test matrix since several information is still missing. However, the chair requests all attendees to provide further information especially on the vehicle performance. He noted that with the information to be provided it may also be concluded that there is no need for agreeing new requirements.

Mr Gehring mentioned that it may be important to also assess the structure behind the vehicle surfaces since such structures could create higher risks despite they are not obvious. He also proposed that, if no real vehicle can be found that exhibits such behaviour, it could be possible to use a structural frame that is designed accordingly. The chair highlighted that this also could be a good idea to limit the costs of the upcoming testing.

Mr Hardy pointed out that one of the most important issues may be to assess the physical abilities of the impactors. Rotation may influence the performance but could also be a kind of “self-correcting” behaviour of the impactor. Also, it could be possible to test the impactor towards the vehicle surface in a more normal angle. The chair pointed out that this was one of the ideas of the Commission and that the impact speed e.g. could be adopted according to the impact direction. Mr Kinsky replied that, however, it can be hard in such a case to identify the contact surface that should be aimed on since the surfaces have different curvatures over the vehicle height.

Mr Roth suggested that the study of TRL could also include a comparison of the effects of the impactor rotation with the effects of a rotating pedestrian’s body. Mr Zander wondered whether an acceptable value for the rotation could already be identified.

Mr Gehring added that he does not see a point why a vehicle should be tested in an angular direction. Vehicles should be designed to provide protection in the direction of their travel. Also, he agreed to the potential problems to identify a appropriate contact surface. Mr Hardy replied that such a test procedure should be seen as simplified possibility to assess the front end that considers the limited abilities of the impactor. It could also be a possibility to consider that the change from a 60° plane to a 45° plane can mean that there are just 15° degrees change in the angle of the impactor travel which still fits the abilities of the impactor.

On request of Mr Gehring Mr Hardy recalled that, at the time when the legform test procedure was discussed in EEVC, the bumper corners were defined notably before the impactor was available. So, the test procedure does not necessarily consider the impactor’s abilities.

5. Action list;

Who	What
Industry	Provide geometries of vehicles regarding the bumper design elements
Industry	Possibly provide vehicles and/or parts for testing at TRL
TRL	Provide further information from past discussion regarding the rational of using the 60° planes

All	Provide information on injury risks caused by impacts outside the bumper corners (national accident data, etc.)
Euro NCAP and others	Provide information from NCAP or other tests of test points outside the bumper corners

6. Miscellaneous items;

7. Conclusion of the meeting.

It was agreed that the next meeting should be held whenever the progress of the work allows discussing new information. It is noted that this may be in connection with the next IG GTR9-PH2 session. The secretary will send out respective information as soon as possible.