

**DRAFT**

**MINUTES OF THE FIRST MEETING OF  
THE GRSP INFORMAL GROUP ON A POLE SIDE IMPACT GTR**

Held at the Federal Ministry of Transport, Building and Urban Development

Robert-Schuman-Platz 1 - 53175 Bonn, Germany

16-18 November 2010

**Attendees**

<b>Name</b>	<b>Organization</b>
Yves Van Der Straaten	OICA
Ansgar Pott	Hyundai Motor Europe Technical Center
Myriam Constant	PSA Peugeot Citroen
Takehisa Yamakawa	JAMA Europe
Suzanne Tylko	Transport Canada
Thomas Slaba	BMW Group
Dr. Sascha Pfeifer	German Association of Automotive Industry (VDA)
Thomas Kinsky	Opel GmbH
Richard Damm	German Federal Ministry of Transport
Sun Zhendong	China Automotive Technology and Research Center
Guo Miao	China Automotive Technology and Research Center
Dr. Joachim Müller	Ford Motor Company
Peter Davis	The Society of Motor Manufacturers and Traders Limited
Markus Hartlieb	Daimler AG
André Haas	Daimler AG
Ralf Limmer	Audi
Thomas Loew	Audi
Rene Nulens	Toyota Motor Europe
David Francis	UK Department for Transport
Peter Broertjes	European Commission
Mr. Hideki Yonezawa	Japan National Traffic Safety and Environment Laboratory
Keiji Hatano	Nissan
Hidenobu Kubota	JASIC
Kim Dae-Up	Korea Automobile Testing & Research Institute
Ezana Wondimneh	NHTSA, US Department of Transportation
Robert Hogan	Department of Infrastructure and Transport (Australia)
Mark Terrell	Department of Infrastructure and Transport (Australia)
Thomas Belcher	Department of Infrastructure and Transport (Australia)
Tobias Langner	BASt

## **DRAFT**

Dr Jost Gail	BASt
Philipp Wernicke	BMW Group
Danilo Barberis	Fiat - Italy
Jean-Philippe LePretre	UTAC
Irina Dausse	Renault
Susan Meyerson (phone)	NHTSA, US Department of Transportation

### **Apologies**

<b>Name</b>	<b>Organization</b>
Martin Delin	Volvo Cars
Hans Ammerlaan	RDW Netherlands

## **1. Welcome**

The chairman, Robert Hogan, opened the meeting, welcomed the delegates, and summarized the background and history of Australia's proposal to develop a pole side impact GTR and the establishment of the Informal Group.

Mr Hogan then invited the members of the Informal Group to explain what they would like to see achieved by the Group.

Mr Francis stated that the UK would like all options to be considered.

Mr LePretre stated that the proposed GTR would support UNECE R95.

Ms Tylko said the proposed GTR was a step forward.

Mr Miao said China was very interested in and fully supported the proposed GTR.

Mr Yonezawa expressed interest in the proposal and a desire for cooperation.

Mr Van Der Straaten stated that OICA would like to see a 'good' global technical regulation developed, with no options or modules, and supports the process to develop a harmonized GTR, but not at any cost. The desire for a pole side impact GTR that did not include options or modules was supported by the representatives of a number of individual vehicle manufacturers.

Mr Dae-Up stated Korea's support for the GTR proposal.

Mr Damm said that Germany fully supports the development of a good pole side impact GTR.

Ms Meyerson stated that the US considers it is very important that we develop a harmonized pole side impact standard.

(Joining the meeting on 17 November, Mr Broertjes stated that the European Commission

## DRAFT

would like to see a true global technical regulation with no options and that the EC is interested to see what the feeling is in the group regarding the development of such a GTR).

### **2. Roll Call**

(Attendees noted above)

### **3. Adoption of the Agenda (PSI-01-04)<sup>1</sup>**

The agenda was adopted with the exception of item 7.5 'Recent US Crash Tests' which are yet to be completed. It was agreed this item would instead be discussed at the next meeting of the Informal Group.

### **4. Terms of Reference and Procedures**

Mr Hogan introduced the proposed Draft Terms of Reference and Rules of Procedure for the Informal Group circulated by Australia prior to the meeting (PSI-01-05).

Mr Hogan suggested rule 4 of the proposed Draft Rules of Procedure be amended to read:

*'All documents and/or proposals must be submitted to the Secretary of the group in a suitable electronic format in advance of the meeting. Items or proposals requiring decision by the informal group should be circulated two weeks in advance of a meeting.'*

There were no objections to this proposed amendment and the Draft Rules of Procedure circulated by Australia were amended accordingly.

Mr Van Der Straaten and Mr Slaba both suggested that the GTR should consider the issue of an appropriate lead time and implementation date, noting that decisions on implementation timing will ultimately rest with contracting parties.

Mr Wondimneh suggested a recommendation for an appropriate lead time and implementation date could be included in the preamble of the GTR.

Draft Terms of Reference and Rules of Procedure of the group were then agreed by the Informal Group for the endorsement of GRSP and WP29. While commencement timing for the proposed GTR was not included in the Draft Terms of Reference it was agreed that this would be a standing item on the agenda at future meetings of the Informal Group.

### **5. Safety Need**

Mr Hogan presented a consolidated summary of safety data provided thus far by participating countries (PSI-01-07). It was agreed that a more comprehensive presentation should be provided at the next meeting.

---

<sup>1</sup> Document references are to the GRSP website for the Informal Group <  
[http://www.unece.org/trans/main/wp29/wp29wgs/wp29grsp/psimpact\\_1.html](http://www.unece.org/trans/main/wp29/wp29wgs/wp29grsp/psimpact_1.html)>

## DRAFT

Mr Hogan requested contracting parties participating in the Informal Group that had not already responded to Australia's request for safety need data (originally made by email on 17 September 2010) to do so by the end of December 2010.

Mr Hogan undertook that Australia would liaise bilaterally with Governments where issues with data provided so far (e.g. coding issues) had been identified. Australia may also approach contracting parties for more detailed data (e.g. gender and body region analysis).

Dr Gail presented the results of a BASt study of the 'Influence of Vehicle Stability Control (VSC) on Accidents on Rural Roads' in Germany (PSI-01-08).

Ms Meyerson noted that the US had assumed 35% ESC effectiveness for passenger cars, and 67% ESC effectiveness for SUVs when determining the benefits of adding a pole side impact test to FMVSS 214.

Mr Terrell presented an evaluation of electronic stability control (ESC) completed by Monash University Accident Research Centre (MUARC) using Australian used car safety ratings data (PSI-01-09).

The general conclusion from both VSC / ESC studies presented (PSI-01-08 and PSI-01-09) was that ESC would have a significant impact in reducing single vehicle crashes, particularly for SUVs, but would not resolve the problem being addressed by the GTR.

Dr Müller commented that some single vehicle accidents cannot be prevented by ESC due to factors such as slippery road conditions and high speed, but that the effectiveness of other technologies needs to be determined for the subset of accidents that would not otherwise be prevented by ESC.

Mr Hogan sought the view of Informal Group members on the target vehicle categories that should be covered by the GTR. Mr Hogan stated that Australia considered the GTR should cover both M1 and N1 type vehicles.

Mr Wondimneh noted that the vehicle category definitions used by the US in FMVSS 214 are different to the M1 and N1 vehicle categories, and suggested the scope of the GTR should be based on the definitions of Special Resolution No. 1. In the US, commercial vehicles are frequently used as passenger vehicles and many commercial vehicles have 'sister' vehicles that are passenger vehicles. For this reason the US does not distinguish between passenger and commercial vehicles in FMVSS 214, but instead uses vehicle mass.

Mr Damm stated that Germany would be happy if the scope of the GTR included UNECE M1 and N1 vehicle categories, but noted the Informal Group should use the vehicle category definitions used in GTRs.

The view of the meeting was that the Scope of the GTR should be based on the definitions of Special Resolution No. 1 and include vehicles with a gross vehicle mass not exceeding 10,000 lbs (approx 4536 kg).

## **6. Existing Research (including crash tests)**

Ms Meyerson presented a summary of the technical rationale for the US FMVSS 214 pole test (PSI-01-10).

Mr Langner presented a summary of the EEVC accident data analysis of side impacts with poles on behalf of EEVC WG13 and EEVC WG21 (PSI-01-11).

Although the US had determined oblique pole impacts to be the most common, and EEVC had determined perpendicular impacts to be the most common, it was noted by several members of the Informal Group that 9 and 3 o'clock (perpendicular) principal direction of force impact classifications have a range of  $\pm 15$  degrees, and a 75 degree oblique pole impact is therefore exactly on the division between 2 and 3 o'clock, and 9 and 10 o'clock.

Mr Terrell presented a summary sheet of crash tests relevant to the activities of the Informal Group, and noted that Australia, Japan, and the US had provided details of crash tests conducted that could be useful for the development of a pole side impact GTR (PSI-01-12).

Mr Hogan asked the members of the Informal Group to provide details of any relevant crash tests they had conducted, or will conduct in the future, which might assist the pole side impact GTR development process.

## **7. Examination of Possible Test Procedures**

Ms Meyerson provided an update on the progress and activities of the Informal Group on the Harmonization of Side Impact Dummies (WorldSID group). It was noted that the WorldSID 50th male is likely to be completed in 2011, with injury risk curves potentially taking a little longer; the WorldSID 5th female is envisaged to be completed around 2013.

Ms Tylko provided an ISO WorldSID Positioning Sub-Committee Update (PSI-01-18). It was advised that the seating procedure would specify that the seat base be set to the lowest position, but that the procedure for the seat back angle was yet to be finalized. It was planned to hold an ISO workshop in January 2011 to finalize the seating procedure for the WorldSID 50<sup>th</sup>.

Mr Terrell presented a summary of pole side impact test procedures in use in regulatory or consumer crash test programs or proposed for use (PSI-01-13).

Ms Tylko presented a summary of recent Canadian oblique pole side impact research using the WorldSID 50<sup>th</sup> RibEye, WorldSID 50<sup>th</sup> IRTRACC, and ES-2re dummies (PSI-01-14).

Mr Belcher presented a summary of recent Australian oblique, perpendicular, and offset perpendicular pole side impact research using WorldSID 50<sup>th</sup> dummies (PSI-01-15).

There was discussion of the respective roles of the WorldSID and Pole Side Impact groups with regard to injury criteria and limits. Ms Meyerson suggested that the

## DRAFT

WorldSID group should be responsible for establishing injury risk curves for the WorldSID dummies and making recommendations on these curves, but that the pole side impact group should take responsibility for the injury criteria and limits to be applied in a pole side impact GTR. It was then agreed that the pole side impact group would be tasked with setting the injury criteria and limits for a pole side impact GTR.

Mr Hogan canvassed the Informal Group to obtain member's views on the best pole side impact test method (oblique vs. perpendicular vs offset perpendicular), the most suitable impact speed, and the most suitable test dummy.

There was a clear consensus that the test procedure in a pole side impact GTR should utilise WorldSID dummies.

There was general agreement that it was premature to identify an agreed test procedure and that consideration of test procedures based on FMVSS 214, EuroNCAP and the offset perpendicular test recommended by APROSYS should be carried forward.

It was agreed that benefit cost analysis would be a major element in comparing the three candidate procedures. However, some members also expressed reservations about the capacity of available data sources to answer the necessary questions, as gaps and coding issues are known to exist for many field data sources. For example it was noted that distinguishing impact angle was difficult and that the choice of angle in a test procedure could be determined by the outcome being sought rather than the most common impact point.

Mr Terrell indicated a preference not to use the NCAP procedure as this did not load the thorax sufficiently.

Mr Limmer noted that introduction of WorldSID would constitute major change and that other changes should be minimised – a test procedure should be based on the current perpendicular or oblique test, although he favoured the oblique test as more robust.

Dr. Müller noted that Ford, and many other global automotive manufacturers supplied vehicles to both Europe and North America. For these companies, parts of the company would need to adjust if an oblique test was used, and other parts would need to adjust if a perpendicular test was used. However, there would be benefit from one harmonized procedure.

Mr Damm pointed out that there would be cost savings achieved by removing multiple side impact dummies from test procedures and replacing them with a globally agreed side impact dummy.

## **8. Establishment of Countermeasures (available and prospective technologies)**

Mr Hogan invited the industry representatives present to comment on possible future countermeasures for pole side impacts and any likely changes to existing countermeasures that may be required by proposed test procedures.

Industry representatives generally expressed reluctance about providing specific details

## DRAFT

due to commercial sensitivities. However, it was noted that higher strength materials are generally being used in vehicles, and countermeasures will be specific to each vehicle design. There are also currently some vehicles in the field with no head protection countermeasures, and a GTR would substantially improve the protection offered by these vehicles. For the vehicles with head protecting side airbags, the group was advised to expect some changes/improvements in airbag and sensor design, depending on the standard, but not necessarily major changes.

### **9. Benefit Cost Analysis**

Ms Meyerson summarised the US benefit cost analysis for the FMVSS 214 pole side impact rulemaking process (PSI-01-16).

Mr Langner presented a summary of the EEVC benefit cost analysis of side impact test procedures on behalf of EEVC WG13 and EEVC WG21 (PSI-01-17).

Ms Tylko asked if the EEVC analysis had weighted the serious injury costs to account for the higher cost of head injuries compared to other injuries. Mr Damm advised that the serious injury costs used in the EEVC analysis are average costs for all serious injuries.

Ms Tylko pointed out that it is important to account for the fact there is much less difference between fatal crash costs and serious injury crash costs for accident types, such as pole side impacts, where serious head injuries are more common.

Mr Langner advised the Informal Group that it was important to note that the costs of countermeasures were calculated in Euros from costs provided by the German car industry, while benefits were calculated in Pounds based on analysis of UK crash data. The cost benefit ratio could therefore fluctuate with the exchange rate, and the objective of the EEVC analysis was to establish the relative benefits and costs of alternative side impact test procedures, rather than true cost benefit ratios.

Mr Hogan noted that costs and benefits could vary substantially from one country to the next, and that the Informal Group should seek to establish cost and benefit estimates for a number of different countries. Mr Hogan also stated that industry will need to be approached to provide up to date cost estimates for different pole side impact test methods at an appropriate stage during the future work of the group.

### **10. Future Work**

Mr Slaba suggested that injury criteria and injury limit values should be put on the agenda and discussed in more detail at the next meeting with initial discussion of body regions.

Mr Broertjes suggested the group may consider inserting a module for electrical safety into any pole side impact GTR the group develops. This would provide an opportunity for a harmonized approach on this electrical safety issue, rather than separate arrangements subsequently being pursued by different countries.

Mr Slaba suggested we involve experts on this issue, rather than simply inserting modules from other crash regulations.

## **DRAFT**

Mr Broertjes added that the high intrusion that occurs in pole side impact tests could be likely to damage batteries located in the vicinity of the pole impact alignment.

It was agreed that this matter should be kept under review, and that the group may seek input from experts at an appropriate time during the development of a pole side impact GTR.

### **11. Timetable**

Mr Terrell presented Australia's suggested project timetable, which culminated in submission of a draft GTR to WP.29 for approval in November 2012. Comments suggested that this was ambitious, particularly as GRSP would need to endorse the GTR. It was agreed to keep the matter under review, and the most important objective would be to produce a high quality GTR.

### **12. Next Meetings**

Mr Hogan proposed that the next meeting of the Informal Group could be held in conjunction with Head Restraints and WorldSID informal working group meetings in Brussels in the week of 28 February to 4 March 2010. This was agreed to be an appropriate venue and timeframe for the next meeting.

Mr Hogan undertook to confirm the details of the next meeting, following consultation with the chairs of the Head Restraints and WorldSID informal working groups.

It was noted that future meetings of the WorldSID and Pole Side Impact Informal Groups will be held together where practicable and that subsequent meetings of these groups had already been scheduled for the week of 6-10 June 2011 in Washington DC (the week before ESV).