Short Report

GTR No. 7 Workshop

@BASt, Bergisch Gladbach

16th July 2013 „lab day“
17th July 2013 „text day“

Bernd Lorenz (BASt)

For GTR No. 7 meeting, 9th/10th September 2013
Gothenburg

GTR No. 7 Workshop on 16th of July 2013 @BASt, Bergisch Gladbach

Draft AGENDA

Tuesday, 16th July

1. Welcome (Chair)
2. Approval of Agenda (All)
3. Information/Discussion/Practise
    a. Intention/Goal of the workshop
    b. Common try out of a draft procedure for BioRID positioning without the use of HRMD
4. AOB
5. Summary of meeting/actions (Chair)

Wedsnesyday, 17th July

1. Review/Drafting of (new) text in related annexes
2. AOB

3. Next Meeting(s)

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Participants

Teilnehmerliste GTR No.7 BioRID TEG Workshop

am 16.07.2013 in Raum 1 FTVA (7.129) und Box 4

(Stand: 11.07.2013)

	Name	Verband/Firma/Behörde	Land	Unterschrift
1	Jan Basilautzkis	Faurecia Autositze GmbH	D	
2	Alexandra-Brigitte Scholz	Adam Opel AG	D	
3	James Abraham	Ford Motor Company Ltd.	GB	
4	Peter Davis	The Society of Motor Manuf. and Traders Ltd.	GB	
5	Markus Hartlieb	Daimler	D	
6	Hans Ammerlaan	RDW	NL	
7	Gerry Locke	Lear Corp.	USA	
8	Yoshiji Kadotani	Honda	JP	
9	Fuyuki Oshio	Jasic	JP	
10	Markus Drosdzol	Opel	D	
11	Manfred Zube	Johnson Controls GmbH	D	
12	Olaf Klene	Johnson Controls GmbH	D	
13	Andreas Jonke	IAV Fahrzeugsicherheit GmbH & Co.KG	D	
14	Hendrik Völkel	IAV Fahrzeugsicherheit GmbH & Co.KG	D	
15	Michael Züge	BGS	D	
16	Bernd Lorenz	BASt	D	
17	Tobias Langner	BASt	D	
18	Mynam. CONSTANT	PSA Peugeot Citroen	F	
19	FRANK, Thomas	Lear Corporation	D	

Erfahrungsgemäß kann sich die Anzahl der Teilnehmer auch noch kurzfristig ändern.

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- On the last workshop in March 2013 a procedure for measuring effective head restraint height and backset based on the R-point without the use of the HRMD was explored and agreed (see next slides).

- Aim of the July workshop was to define a procedure how to position the BioRID without the use of the HRMD.

- The aim of the second day was to draft some new text mainly related to Annex 9 of the draft GTR.

- As offered in the last official GTR 7 meeting held in April 2013 at OICA in Paris, OICA presented a proposal for a procedure for BioRID seating which served as a basis for the workshop.

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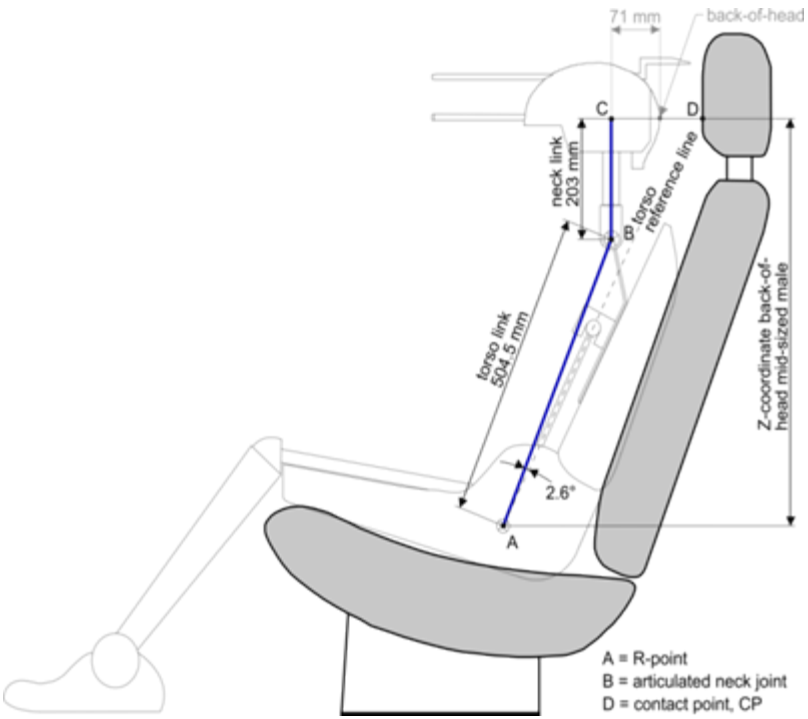
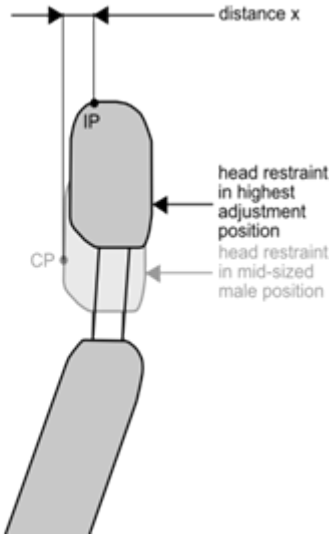
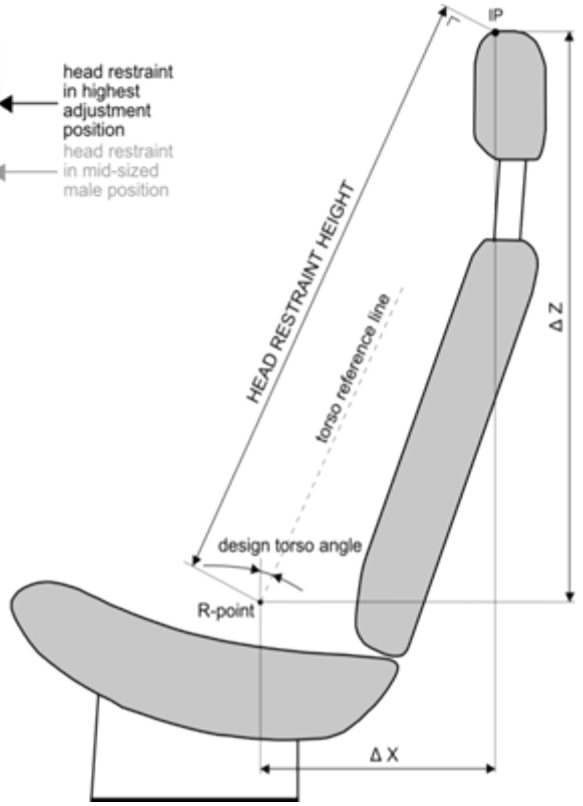
Concept of measuring effective HR height







CP: contact point
IP: intersection point
Distance x: function of design torso angle

Test procedure for effective head restraint height I

The Torso & Neck Link concept expressed in goniometric formulas

With head restraint set in mid-sized position,

the measuring of Contact Point CP:

Available are:

- the coordinates of the R-point,
- A design torso angle, and
- dimensions of a mid-sized Torso & Neck Link.

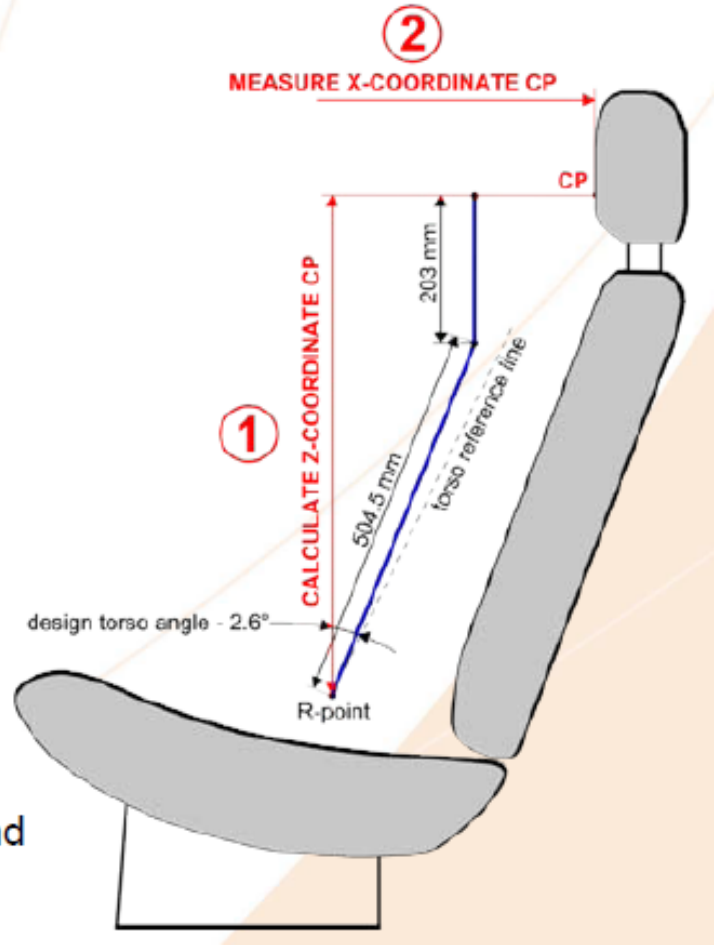
Needed actions:

1) calculate Z-coordinate CP =

504.5 * COS(design torso angle – 2.6°) + 203

(instead of calculation, a table will be provided),

2) mark this point on the head restraint surface and measure X-coordinate CP.



Source: GTR7-08-03e.pdf (Hans Ammerlaan, RDW)

Test procedure for effective head restraint height I

The Torso & Neck Link concept expressed in goniometric formulas

With head restraint set in its highest position, the measuring of Intersection Point IP:

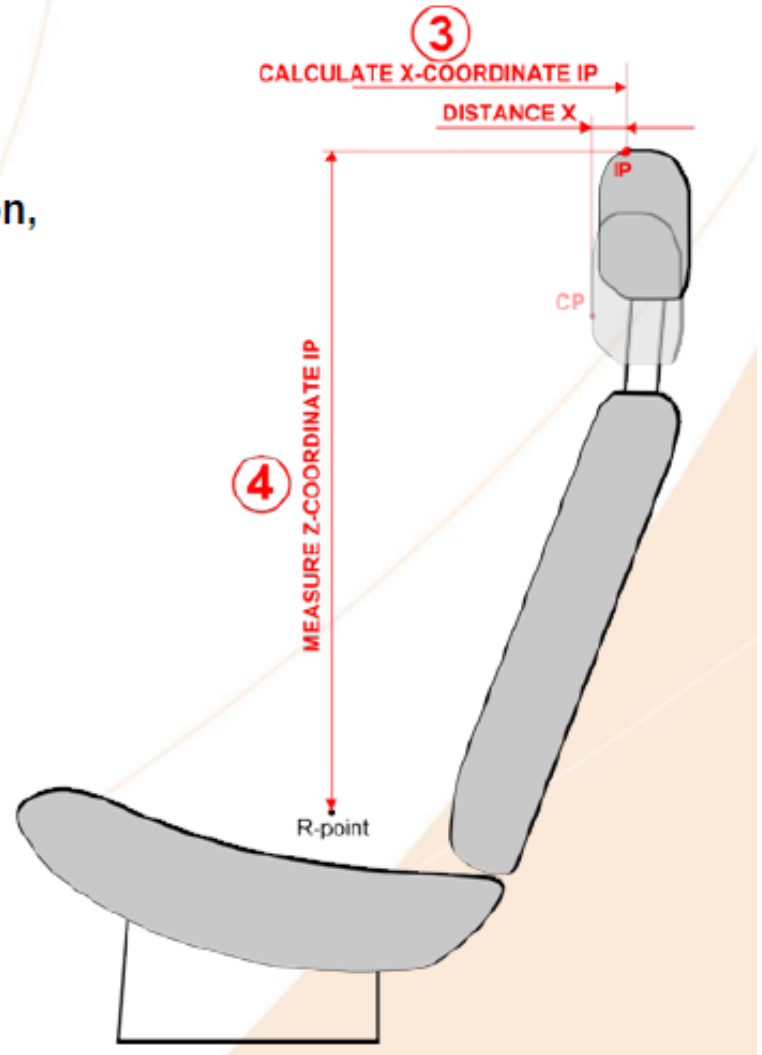
Available are:

- The table providing also "distance X"

Needed actions:

3) calculate X-coordinate IP = Measured X-coordinate CP + "distance x",

4) mark this point on the HR and measure Z-coordinate IP.



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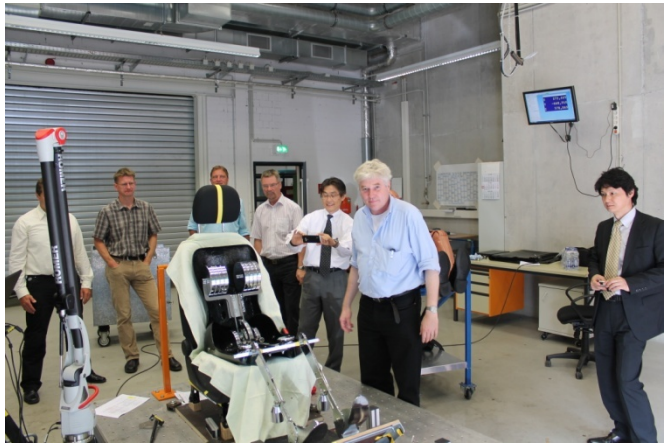
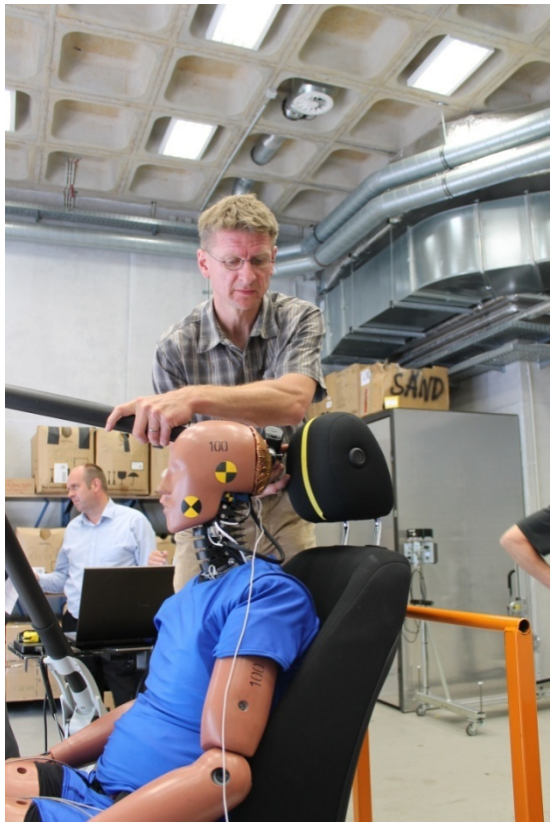
Impressions I





Fotos: B. Lorenz

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Impressions II

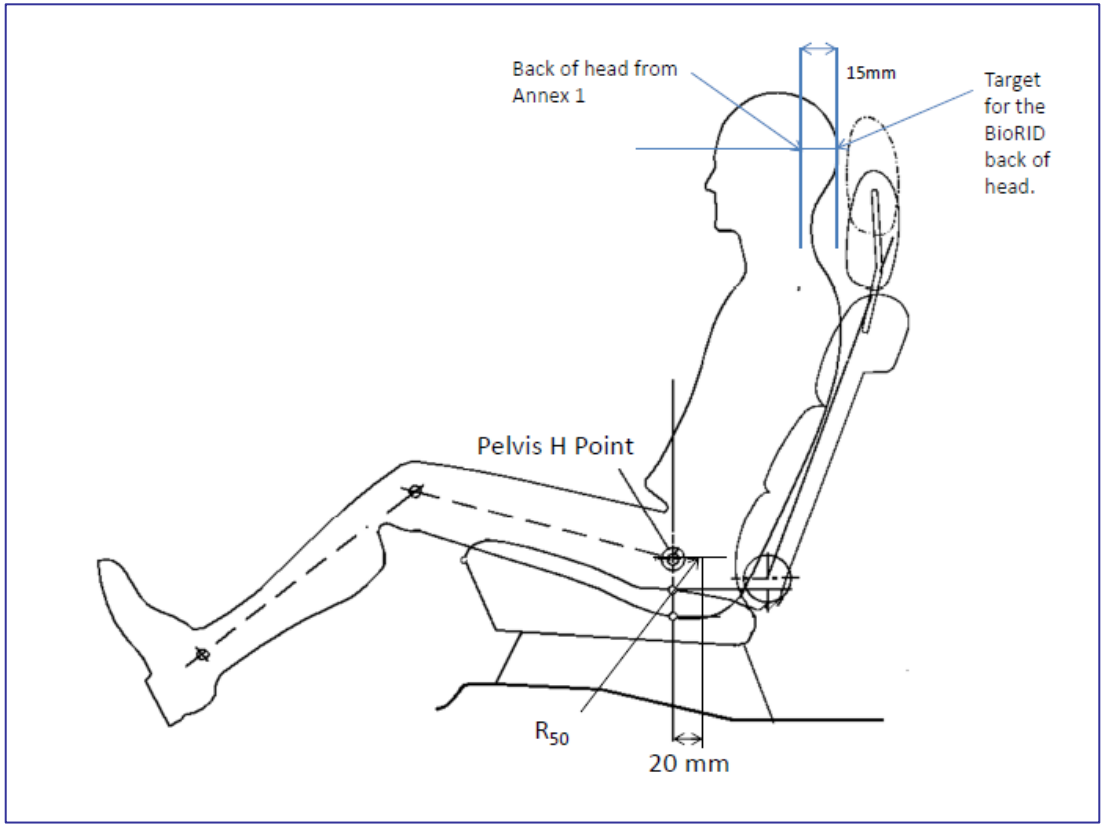
Fotos: B. Lorenz

- Difference between the static measurements and the dynamic test is the position of the seat.

- A new „reference point“ is needed as basis for a similar procedure as agreed for the static one

-> Introduction of the „R_{50} point“

Introduction of the „R_{50} point“



- Introduction of a new “designated H-point” for mid-size male seating position “R_{50}”.
- This data is provided by the manufacturer, allowing the seat to be adjusted to this point.
- Note: static measurement is made in a different seat set-up than for the dynamic test.
- “R_{50}“tolerance is checked by the H-point machine. If it lies within the 50 mm box it is this is the designated design point.

Introduction of the „R_{50} point“

- The BioRID H-point is located 20 mm forward of the “R_{50} point”
- Based on the “R_{50} point” Annex 1 table shall be applied which provides the target back of the head.
- Based on the experience from the BioRID user group and current practice in NCAP subtract 15 mm from figure given for the backset taken from the Annex 1 table.

Note: The group was well aware that most experience with the BioRID in dynamic testing is based on 25 degrees design angle as used at IIHS and Euro NCAP.

However, JNCAP uses the BioRID for a range of design torso angles. Based on the available expert knowledge the group recommends to limit the use of the BioRID to torso angles between 20-30 degrees.

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Issues discovered during the workshop

•At 20 degree torso angle it seems not possible/difficult to meet the back of head and head level requirement at the same time. However, the introduction of a reasonable angle tolerance of the head might solve the problem.

•The different definition of the pelvis angle in the draft gtr (torso angle plus 1.5 ± 2.5º) and Euro NCAP (26.5º ± 2.5º), which gives the same value for 25º angle, was discussed.

•-> JASIC will review JNCAP data to look at the issue of the BioRID pelvic angle and the head leveling

As a result of the workshop the group recommends the following BioRID set up priority procedure:

1 – Verify H-point to R_{50}, using SAE 3 H-point machine.

2 – Position BioRID checking in order of:

- BioRID H-point location forward +20mm
- Pelvis angle
- Back of head coordinate subtract -15mm.
- Level Head, if possible.

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Further actions:

•JASIC shall review JNCAP data to look at the issue of the BioRID pelvic angle and the head levelling which it was noted was a resultant of using BioRID at angles below 25 to 20 degrees and that this was an issue that would need to be addressed regardless of the BioRID set up procedure used.

•OICA agreed to review specific wording in the text to provide improvements as noted in the dual pane document.

•JASIC to provide information on using the torso design angle, using JNCAP information

•During the workshop(s) the seat design angle was used for the static as well as for the dynamic procedure. It was the feeling of the group that a confirmation by the GTR group is needed that this was the correct way forward.

Conclusion

- Workshop was enjoyable, constructive and successful. All participants have been very supportive!

- Concept based on the „R_{50} point“ worked for the positioning of the BioRID

- New text for GTR Annex 9 proposed

-> HRMD no longer needed for static assessment and BioRID positioning!

Thank you for your attention!

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