Minutes of 2ndt meeting of
The Informal Group on Child Restraint System

Held at CLEPA, Brussels
1st April 2008

1 Welcome and Introductions

Pierre Castaing opened the meeting, welcomed the delegates.
Louis Sylvain Ayral explained the meeting arrangements.

2 Roll call

Due to new participants' attendance in our group, a roll call of all participants was done.

Attendees and Apologies for Absence: See Annex 1

3 Approval of Agenda

The draft agenda was approved without comments.

4 Approval of the Minutes of last meeting

The Minutes were reviewed.

- Comment from CI, in page 2, CI provides analysis from NPACS and not APROSYS.
- Comment from Daimler in page 4, question of airbag switch-off system is judged as Priority 2 and not priority 1.
- Comment from INRETS, a page of the attendance list is missed.

5 Actions from the Minutes of last meeting

The action list was reviewed. Presentations and discussions followed each item.
Pierre Castaing reminded the participants that all documents were put on the UNECE web site under the GRSP folder.
www.unece.org

Action 1.4 – Floor positioning versus R (H) point
During a German industry meeting, automotive manufacturers discussed about distance between vehicle floors and CRS to define a support leg for common CRS in development. They were unable to find a solution for all vehicles due to a very large range of distances, between 15 and 50 centimetres.
Pierre Castaing asked if a classification by type of vehicles would be possible. For OICA, it is very difficult due to so large geometrical differences in European fleet.
Hans Ammerlaan asked if we can obtain information or set of data regarding distance between Cr point or H point of the rear benches and the front panel below rear bench.

Action OICA

Action 1.6 - Classification – Load level in Isofix anchorages

Presentation of results is postponed due to a lack of homogeneity in the data (depending of the tests laboratories and setup definition). Corrected data will be available in 3 weeks.

Action CLEPA

Farid Bendjellal specifies that it will be better to have data of Isofix strength for vehicles. We could have some data in static configurations with ECE.R14 results, these data will give us static load limits in Isofix anchorages. Pierre Castaing asks OICA members if dynamic load limits in Isofix anchorage are available. Studies are in progress and data are expected for next meeting.

Action OICA

Action 1.7 – dummies, FTSS presentation
Action postponed to next meeting

Action Netherlands

Action 1.11 - Side Test protocols in the world
In progress. Presentation is expected for next meeting.

Action CLEPA

TUB could present study following ISO (ESV document).

Action TUB

Action 1.12 - Validation of door velocity in side impact procedure
In progress. Secretary will contact WG13 to find information on door velocity in side impact tests.

Action OICA + Secretary

5.1 Validation of the ToR

Before official validation by GRSP, Pierre Castaing submitted a draft of ToR to the group.
Different questions are asked:
- No focus on Isofix?
- Which level of finalization is attended (point 6) ?
- Which are other priorities (different as Priority 1)?

One remark from LAB, to take into account other research programs (such as CREST/CHILD/CASPER) as a data base for our analysis.
Another remark regarding term “UNIVERSAL” which seems to refer to ECE R44. It will be preferable to define a new terminology.

CLEPA reminds to the group that ToR shall be short and clear. It is not necessary to enter into more details, to avoid fixing solutions and technologies.

5.2 Analysis of EEVC WG18 report

Philippe Lesire opens the topic. He makes a brief overview of WG18, its works and its future, with nomination of Luis Martinez as new chairman of WG18. He briefly describes the collaboration WG12/WG18 for the work around Q-dummies family and definition of associated criteria.

The presented report was written in 2003 and between 2003 and 2006 was upgraded with research and analysis results of the WG18. A version of February 2006 was submitted to EEVC SC and validated in March 2008. Philippe Lesire notes that a more recent version of the report exists, which includes comparison of CRS international regulations. This work seems to be essential for our work. This last version of WG18 report will be submitted in May to the next EEVC SC for validation.

Action Netherlands

Philippe Lesire makes a presentation of the validated report.
First chapter of the report concerns Accidentology and Philippe presents the different databases which are analyzed in WG18 work. First remark, in the report, there are no separation between misuses and no-misuses. We have a state of accidentology on the European roads.

First analysis concerns Rear impact. Few data available for this “type of configurations”, 10 cases are collected and reported on the document. It was noted that rear facing system presented a real problem mainly in rear impact, due to gravity of the medical outcome, but these cases are marginal in comparison with front and side accidents.

Marianne Leclaire gave us information about available data from Catalonia, which is used for NPACS study. Presentation is expected for next meeting.

Action TRL

The group wished to take advantage of the presence of S.Meyerson to have a view of US situation. Presentation from US is expected for next GRSP by M.Versailles.

Action NHTSA

Decision regarding rear impact *configuration*: due to accident data available and time-line, it seems to be preferable to put rear impact in priority 2 and to concentrate our work on frontal and side *configurations*.

Second analysis is about Side impact. Review of data shows that data in CREST project regroups very severe accident cases but these data are from 1996, so CRS were perhaps less efficient, restraint system too. Presentation with data updated by LAB is expected for next meeting.

Action LAB

Regarding body segment impacted, the more concerned is the head with 65% of cases. After we find Chest (16%), Abdomen (11%). Neck is less injured but level of severity (MAIS) is higher. So we shall take it into account in our conclusion.

Regarding Head, Pierre Castaing asked which type of contact is involved (head contact, deceleration, contact with another occupant, etc.). Direct contacts, with struck side impact, represented 99% of the cases. Non struck side cases are marginal in the report.

During conversations, Pierre Castaing reminds that our case is different than consumer tests (as Euro NCAP), in regulation we want to check CRS on representative test bench and not the "couple", vehicle+CRS recommended by manufacturers.

www.lboro.ac.uk/research/ …
Analysis of data from CREST and CHILD, European projects, show that 40% of CRS are set in misuse configuration and provide 25% of injuries and more.
We have few cases with side airbag protection (only 5 cases) and no conclusion is possible with so few data.
Car intrusion is an increasing factor on child injuries.

www.childincarsafety.org
Following presentation, discussion and conclusions from EEVC WG18 report, it seems difficult for some members of the group to work with increase of CRS dimensions, due to car geometrical and available space on rear bench.
Pierre Castaing reminds that we are starting a new regulation with nothing in terms of dimensions, no head excursion criteria, no required dimensions for future CRS.

Regarding dummies to answer to the side requests of future regulation, a member of the group asks if the Q-family is the only possible family for us. Is it possible to investigate the

Hybrid III family with Crabbies? Have we comparison of the different families available on the market?
Luis Martinez, member of WG12, indicates us that Comparisons between P and Q-families were performed. Publications and presentations are available. Luis is not sure that comparison was performed in Europe between Q and Hybrid III families, but this work is available in US. Conclusion of this study seems to show that Hybrid III family is not appropriated for side impact.
Marianne Leclaire specifies that the three families were studied in NPACS project. Results showed the best family for side impact will be the Q-family. A presentation of NPACS report is expected for next meeting.

Action TRL

Decision regarding dummies: our purpose is to provide a proposal to GRSP in December 2009. Until this time, we work with the available data. We have, today, information from WG12, WG18, Europeans projects. We will study future data, that partners can offer. At the end of 2009, we will use the most appropriate dummies. For next meeting, H.Ammerlaan shall present results available and validated by EEVC SC.

Action Netherlands

Regarding availability of Q-dummies, if this family is included in future regulation, it was specified that today FTSS has no business exclusivity regarding Q-family. Everyone can build and sell Q-dummies.

5.3 Classification of CRS

Hans Ammerlaan presents results from TNO which studied evolutions of anthropometry to develop new child dummies. This database is named CANDAT
Luis Martinez presents to the group information from database WHO. These data are compared to data from CANDAT.
François Renaudin presents information from database 3D CHILD, a French study on child anthropometry. This study concerns children from 0 to 5 years.

Following discussions and presentations, H.Ammerlaan consults the group on the Priorities to investigate. The group need:

- To have an idea of the anchorage load limits to define an acceptable mass of the couple “CRS + children”,
- To define test bench for frontal test regarding existing definitions (NPACS, ISO, definitions of vehicles supplied by OICA),
- To have a common position regarding dynamic tests and definition of expected severities for frontal and side impact tests. In current test procedure, we obtain biomechanical results performing strength mechanical test. Do we want to go on this way? Do we need two tests, a static test with a mechanical point of view (Isofix anchorage limits) and a dynamic test including dummy for a biomechanical point of view?

Pierre Castaing synthesis discussions:

1. Classification of CRS – the group will work on Integral “universal” CRS. This is a first priority. Boosters or other types of CRS will be studied in a second step of our work.
2. Sizing of child and dummy “correlation” – we start with children sizes defined from WHO/CANDAT/… database. With these data we will status on geometrical description as masses, shoulder height, head height, etc. Third step, we try to find correlation between our needs and existing dummies.
3. Pulses – we wait for presentation in next meeting to take a decision on this point.

6 Date and Venue of Next Meetings

Dates of next meetings were planed:

- May, 13th – London (SMT)
- June, 18th – Paris (???)

7 AOB

No other business.

8 Actions

See Action list in Annex 2.

9 Attachments and Working Documents

Annex No.	Presented by / on behalf of	Title
1	NB	Attendance list
2	NB	Actions list
3	NB	Documents list

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Group Secretary
3rd April 2008

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Action Number	Action	Target Date	Action By	Comp Date
1.1	~~Terms of reference~~	~~01/04/08~~	~~Chairman~~	~~01/04/08~~
1.2	Test Bench definition - Information/Presentation following NPACS protocol	13/05/08	OICA / CI	
1.3	R point / Cr point correlation	Postponed 13/05/08	MPA	
1.4	Floor positioning versus R (H) point	Postponed 13/05/08	OICA	
1.5	~~Classification - Anthropometry data~~	~~01/04/08~~	~~CLEPA~~	~~01/04/08~~
1.6	Classification – Load level in Isofix anchorages	Postponed 13/05/08	OICA / CLEPA	
1.7	Dummies – FTSS presentation	13/05/08	RDW / EEVC WG12	
1.8	Dummies – Results from test labs	13/05/08	All	
1.9	Dummies – NPACS experience	13/05/08	CI	
1.10	Dummies – DFT Validation	13/05/08	DFT	
1.11	Side Test protocols in the world	13/05/08	CLEPA	
1.12	Validation of door velocity in side impact procedure		OICA	
1.13	APROSYS study on vehicle's interior arrangement		UPM	
1.14	Misuses – Marking of Isofix anchorages	ASAP	TUV Rheinland	
1.15	Information to GRSP concerning CRS regulation for Buses and Coaches		IDIADA	
1.16	Pulses – Presentations/Analysis	13/05/08	UTAC	
1.17	ISO data on accidentology and accident scenario	Postponed 13/05/08	ISO	
1.18	~~EEVC WG18 final report~~	~~01/04/08~~	~~EEVC WG18~~	~~01/04/08~~
1.19	~~Invitation of EEVC WG12, WG18 and TUB~~	~~01/04/08~~	~~Secretary~~	~~01/04/08~~
2.01	EEVC WG18 final report (version of February 07)	18/06/08	Netherlands	

Action Number	Action	Target Date	Action By	Comp Date
2.02	NPACS study on rear impact	13/05/08	TRL	
2.03	US situation on rear impact	18/06/08	NHTSA	
2.04	Side impact data upgraded	13/05/08	LAB	
2.05	Dummy family comparisons by NPACS	13/05/08	TRL	

Document Number	Title	Origin
INF GR / CRS-2-8	Minutes of 2nd meeting of the Informal Group on Child Restraint System	Secretary
INF GR / CRS-2-7	NPACS Final Report Project Version2	TRL
INF GR / CRS-2-6	Anthropometric WHO database	UPM
INF GR / CRS-2-5	05-0157 – ESV presentation Child dummies	EEVC WG18
INF GR / CRS-2-4	Anthropometric CANDAT database	Netherlands
INF GR / CRS-2-3	EEVC WG18_REPORT Child Safety - February 2006	Netherlands
INF GR / CRS-2-2	Proposal for Terms of Reference and Rules of Procedure	Chairman
INF GR / CRS-2-1	Provisional Agenda for 2nd meeting of the Informal Group on Child Restraint System	Chairman
INF GR / CRS-1-8	Minutes of 1st meeting of the Informal Group on Child Restraint System	Secretary
INF GR / CRS-1-7	Informal document No.GRSP-42-27	GRSP
INF GR / CRS-1-6	Informal document No.GRSP-42-02	GRSP
INF GR / CRS-1-5	Proposed Schedule for a Review of ECE Regulation 44.03	EEVC WG18
INF GR / CRS-1-4	Effect of Q-dummies and Criteria on the EEVC Test Database Results	EEVC WG12&18
INF GR / CRS-1-3	Injury Criteria for Q Dummies	EEVC WG12&18
INF GR / CRS-1-2	DRAFT OF Q-DUMMIES INJURY CRITERIA	EEVC WG12
INF GR / CRS-1-1	Provisional Agenda for 1st meeting of the Informal Group on Child Restraint System	Chairman