

# Minutes of 1<sup>st</sup> meeting of the Informal Group on Child Restraint System

Held at OICA, Paris  
30<sup>th</sup> January 2008

## 1 Welcome and Introductions

Pierre Castaing opened the meeting, welcomed the delegates and explained the meeting arrangements.

Pierre Castaing explained that the main objective of the group will be the establishment of a new regulation concerning the Approval of Restraining Devices for Child Occupants of Power-Driven Vehicles.

Pierre Castaing explained that the main objectives of this meeting were the classification of item's agenda by priorities and the establishment of a list of actions to be undertaken, with the designation of a pilot for each item.

## 2 Roll call

A roll call of all participants was done.

**Attendees and Apologies for Absence:** See Annex 1

## 3 Approval of Agenda (doc. INF GR/CRS/1)

The draft agenda was approved.

## 4 Confirmation of the task of the Informal Group on Child Restraint System (Term Of Reference based on informal 2 and 27 as presented during GRSP/42)

The chairman must draft a proposal of ToR for validation by the group at the next meeting.

**Action: CHAIRMAN**

## 5 Discussion of general concepts of a draft New Regulation on CRS - Proposed work plan (priorities and tasks)

Time line: Pierre Castaing wishes to provide a finalized proposal to GRSP within two years. This subject was discussed and priorities were defined (see paragraph 5.1. thru paragraph 5.10).

Given the timeline, it is important to limit the field of the tasks of our group : it was proposed to focus in a first step on one type of CRS : Isofix Universal Integral Child Seat  
The field of activities may include a booster seat (non integral booster seat) for use with adult safety belt-

### 5.1 Test Bench - Priority 1

How representative of the vehicle fleet are the current test benches?

What are the limits of isofix anchorages in terms of strength ?

OICA will provide information on automotive manufacturer rear seating position of current vehicles with aim to define the future test bench. The group needs geometrical information such mean of H-point, buckle position, anchorage position, angles of seat/seat back, position of head restraints, and also stiffness of seat cushions.

CI could provide an analysis from NPACS with information collected

A sub-group was created to work on this item with participation of CI and OICA - Action expected for May.

**Action: CI + OICA**

Pierre Castaing commented on reference points: R-point for Automotive industries and a Cr-Point for CRS suppliers. It seems that these two points have no clear correlation. Mr Beisswaenger gave information that this correlation exists. The group expects a document dealing with this correlation.

**Action: MPA**

Last point on this topic concerns interaction of vehicle floors and support legs. It seems necessary to have a clear information regarding geometry of the floor. For MPA, the CRS manufacturers must adapt their seats to all vehicle configurations. CLEPA disagreed with this approach on the grounds that the floor is part of the vehicle. Information of floor positioning versus R (or H) point is welcome from OICA.

**Action: OICA**

Work on test bench could be organized in two steps

- In the first step, the group will focus on geometry/stiffness of the future bench,
- In a second step, anchorages and top tether positions could be reviewed.

Evolution of ECE R14, which currently specifies top tether location and strength, could include both top tether and floor specifications.

**Action: ??**

### 5.2 Classification – Priority 1

Dummies are based, today on serial of range masses. A review of recent anthropometry could confirm that the Q family reflects the child population.

Based on the maximum strength of Isofix anchorages (to be defined by task 5.1). a mass couple formed by the Isofix CRS and a test dummy could be defined. That may lead to a new classification for CRSs.

### 5.3 Dummies – Priority 1

Which issues for the dummies? Type of dummies? Criteria associated to the dummies?

The Q family present today 5 dummies (Q0, Q1, Q1 ½, Q3 and Q6). Q10 is now in development with contribution of a European program. Finalization of work on Q family will be presented to Steering Committee of EEVC in March 08.

Pierre Castaing required information regarding other child dummies available around the world.

Clepa offered to provide information on French project dealing with anthropometry of children.

**Action: CLEPA**

Loads sustained by Isofix anchorages in R44 sled tests

**Action: CLEPA**

Loads sustained by Isofix anchorages in various crash tests

**Action: OICA**

The group waits for several presentations from the Netherlands by FTSS or Hans AMMERLAAN regarding Q dummy and actual knowledge, and from WG12 regarding comparison work on child dummies, definition of criteria, etc.

**Action: RDW**

#### 5.4 Dynamic Test – Priority 1

Three types of tests are identified in frontal/side and rear impacts. Which type of scenario do we want to investigate? Shall we work on all the tests in parallel or concentrate resources on some of them?

European Commission wishes that side impact is studied and waits for a proposal which would cover this aspect by the end of the two years. For all the representatives it is not conceivable not to work on side impact in the first step. Political expectations (GRSP's and EC's) are important on this aspect of child protection. The group must define a standard which could be a minimum version in first step.

Regarding side impact, four protocols available are identified:

- ISO or NPACS protocol. (It seems NPACS protocol was modeled on ISO protocol),
- Takata protocol
- Australian regulation protocol
- Britax Protocol

Farid Bendjellal will present a synthesis of these methods during a next meeting.

François Renaudin suggested inviting Heiko Johannsen from Berlin University (TUB) for the next meeting. He has a great experience of ISO protocol and his participation would benefit to the group and our work.

**Action: CLEPA**

OICA is invited to express the point of view of manufacturers regarding angular velocity of the door during side impact.

**Action: OICA**

All representatives agreed that the future method shall be reproducible and repeatable. This aspect must be addressed.

- Frontal impact

Concerning the shape of the pulse, is it necessary to separate two concepts for the tests?

- Mechanical resistance of child seats
- A dynamic test including new biomechanical criteria

## 5.5 Components tests – Priority 2

## 5.6 Labeling – Priority 2

## 5.7 Ease of use /Misuse – Priority 2

Opinions differ on this topic. For CLEPA, this purpose is not a priority. For IC, it's not the case.

Following discussions on misuses, it appears that one source of misuse is a problem of bad wrong re-assembling of the harness. We need to find a solution to limit/eradicate this possibility.

At present, no requirement on re-assembling of harness exists. Be careful, if permanent solution, it seems restriction on innovation (remark from CLEPA).

## 5.8 COP – Priority 2

Problem of COP in ECE R44 was solved with amendment 04.

## 5.9 Interoperability with vehicles – Priority 1

François Renaudin remarks that ECE R16 calibers shall permit to validate if seat belt buckles are accessible after child seat installations.

There are no link between Isofix anchorage positions and adult seat belt (remark for specific case where seat belt shall be used to fix CRS or child – example of seat with shield in replacement of harness). This point shall be explored in our study.

**Priority 2-** Question of airbag switch-off system integrated in Isofix is asked. Could this solution be imposed in a future regulation? Following discussions, if this solution is imposed for CRS, all the cars must be equipped too! If not, we will generate a new case of misuse.

During Aprosys program, a study was conducted on interior arrangement of European vehicles. Luis Martinez will supply a presentation.

**Action: UPM**

The last point discussed concerned the marking of Isofix anchorages that are located in luggage compartments or behind the seat. There are examples where Isofix top tether anchorages could be mixed with luggage retention systems.

**Action: TUV**

## 5.10 Child comfort and health harmlessness – Priority 2

This topic was considered as too subjective. It could be approached later (during last step). However, it was stipulated that child seats are more and more vertical, as a result from consumer test protocols (as EuroNCAP, NPACS, etc.). Current criteria are based on Z acceleration of chest. Child seat verticalization is for sure good for stars but assuredly bad for babies.

The future regulation will see introduction of new dummies and associated criteria but we must keep the problem of seat verticalization during analysis.

Another point links comfort is the space available between passenger seat and the CRS on rear position.

## 5.11 Other

Question from VW regarding the seats integrated on vehicles. This case will be studied in a second or third step.

It was noted that buses and coaches will not be discussed in this future regulation. GRSP could be asked by Spain to create a group to discuss or study this specific topic.

**Action: IDIADA**

Our group will focus on M1/N1 vehicles.

It was agreed that the pulses (frontal and side) must be in accordance with accidentology studies but also representative of vehicle deceleration. Pulses are linked with expected criteria. The group need information and correlates these two aspects.

UTAC will provide analysis including:

- Vehicle deceleration in ECE R94 test configuration,
- Vehicle deceleration in ECE R95 test configuration,
- Vehicle deceleration in Euro NCAP test configuration (frontal and side).

**Action: UTAC**

The group waits also information from:

- ISO with ISO technical documents on accidentology and loading cases on the road,
- EEVC WG 18 report and their conclusions on pulses.

**Action: EEVC WG18 secretary**

For the next meeting, it seems important to invite new participants:

- Representative of EEVC WG12
- Secretary of EEVC WG 18
- Representative of TUB

**Action: Informal group secretary**

## 6 Date and Venue of Next Meetings

Dates of next meetings were planed:

- April, 1st – Brussels (CLEPA)
- May, 13th – London (location to define)
- June, 18th – Paris (???)

## 7 AOB

No other business.

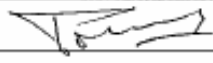
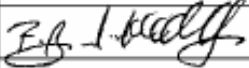

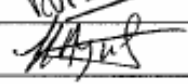
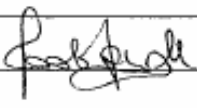
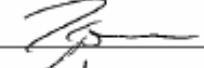





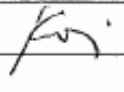

## 8 Actions

See Action list in Annex 2.

## 9 Attachments and Working Documents

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

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30<sup>th</sup> January 2008

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

<b>Document Number</b>	<b>Title</b>	<b>Origin</b>
INF GR / CRS / 8	Minutes of 1st meeting of the Informal Group on Child Restraint System	
INF GR / CRS / 7	Informal document No.GRSP-42-27	GRSP
INF GR / CRS / 6	Informal document No.GRSP-42-02	GRSP
INF GR / CRS / 5	Proposed Schedule for a Review of ECE Regulation 44.03	EEVC WG18
INF GR / CRS / 4	Effect of Q-dummies and Criteria on the EEVC Test Database Results	EEVC WG12&18
INF GR / CRS / 3	Injury Criteria for Q Dummies	EEVC WG12&18
INF GR / CRS / 2	DRAFT OF Q-DUMMIES INJURY CRITERIA	EEVC WG12
INF GR / CRS / 1	Provisional Agenda for 1st meeting of the Informal Group on Child Restraint System	