

Informal document **GRSP-55-34-Rev.1**  
(55<sup>th</sup> GRSP, 19 - 23 May 2013,  
agenda item 18)

# ECE Regulation N°129

55th session of GRSP 19 - 23 May 2013

# From Phase 1 to Phase 3

- Phase 1 dedicated to:
  - ISOFIX Universal Integral CRS
    - i-size
- Phase 2 dedicated to:
  - Booster (ISOFIX or Non ISOFIX)
    - Booster seat
    - Booster cushion
- Phase 3 dedicated to:
  - Stand alone belted Integral CRS



## ECE 129 Phase 2

- ECE-TRANS-WP.29-GRSP-**2014-07e**  
France\_draft ECE 129ph2
- GRSP-**55-08e** (Chair of ECRS IWG)  
Proposal for amendment to GRSP-2014-07
- GRSP-**55-??e** (Chair of ECRS IWG) Status  
report to GRSP

# The 6 key pillars of "Universal Booster"

"Universal Booster"



Non-integral  
"Universal Booster"

Lateral protection  
 $\leq 135$  cm => ECRS  
 $> 135$  cm => Vehicle

Side Impact

Classification using  
child size

New Dummies &  
Performance  
Criteria & Test  
Bench

Better  
Compatibility  
CRS/Vehicle

# Scope

Addition to phase 1 of:

- non-integral Child Restraint Systems
  - "Universal Booster"
    - Booster seat with backrest
    - Booster cushion without backrest

or

- "Specific to vehicle Booster"

# Definitions (1)

- 2.3.2. "Universal Booster" (Non-Integral Universal Enhanced Child Restraint System) is a category of Enhanced Child Restraint System primarily designed for use in all "Universal Booster Vehicle Seating Positions" of a vehicle suitable for Enhanced Child Restraints System of the "Universal Booster" category, as defined and approved according to Regulations N°16.

This category is separated in two subcategories:

- (a) "Universal Booster Seat" with integrated backrest;
  - (b) "Universal Booster Cushion" without backrest
- 2.4.2. "Non-Integral" is a class of Enhanced Child Restraint System, meaning that the retention of the child within the Enhanced Child Restraint System is achieved by means connected directly to the vehicle (e.g. adult seat belt).

## Definitions (2)

- 2.7.2. "Specific Vehicle Booster" is a category of Non-Integral Enhanced Child Restraint System for use in specific vehicle types. All vehicle anchorages are to be approved according to Regulation No. 14. This category includes vehicles "Built-in Boosters". This category is separated in two subcategories:
  - (a) "Specific Vehicle Booster Seat" with integrated backrest;
  - (b) "Specific Vehicle Booster Cushion" without backrest.
- 2.17.2. "Universal Vehicle booster seat fixture" means a fixture, according to dimensions given in figure 10 of Annex 17 Appendix 2 of Regulation No. 16, used by a Enhanced Child Restraint System manufacturer to determine the appropriate dimensions of a "Universal Booster" and its compatibility with most vehicle seating positions, and in particular those which have been assessed according to Regulation No. 16 as being compatible with such a category of Enhanced Child Restraint System.
- 2.51.2. "Universal Vehicle booster seating position" means a location which allows for the installation of a "Universal Booster" Enhanced Child Restraint System as defined in this Regulation.

# Application for type approval

(a) Application for an i-Size Child Restraint Systems; or

(b) Application for a "Specific vehicle ISOFIX"; or

(c) Application for a "Universal Booster" Child Restraint System; or

(d) Application for a "Specific to vehicle Booster" Child Restraint System.

Phase 1

Phase 2

# Clarification (1)

- [2.57. “Module”, is a part of an ECRS that is separate from the ISOFIX connectors and is in direct contact to the child. A module can be used stand alone to restrain a child in a car. A base is allowed to accept more than one module. (Module A, Module B, etc. )]
- [6.1.3.5. If the adult seat belt is required to secure a Universal Booster on the dynamic test bench, then this seat belt is defined in Annex 24 23 to this Regulation. The Enhanced Child Restraint System shall be secured onto the test bench using the appropriate standard seat belt described in Annex 23 using a preload tension of 50N +/- 5N. The dummy shall not be installed unless the design of the restraint is such that the installation of a dummy would increase the amount of belt used. With the Enhanced Child Restraint System in the installed position, there shall be no additional tension in the belt, apart from that exerted by the standard retractor ( $4 \pm 3$  N), where fitted. Where the retractor belt is used, this condition shall be met with at least 150 mm of belt remaining on the spool].

# Clarification (2)

- [7.1.3.1.3.5. The ECRS shall be tested in its most upright position. Where the most upright position falls outside the Vehicle Seat Fixture still this position has to be chosen. However with regard to width positions outside the Vehicle Seat Fixture, for the lateral test shall be chosen the width position of lateral shock absorbers that still fit in the Vehicle Seat Fixture
- The lateral dynamic test(s) will be performed in this(ese) configuration(s).
- For frontal and rear impact, the tests shall be performed with the ECRS adjusted to the size of the dummy (ies) selected to cover the whole size range, in the child seating position representing the worst case for this dummy and impact orientation.]
- No lateral impact test is required for size range over 125 cm until Q10 dummy injury criteria for the lateral impact test are established.

# [Transitional provisions]

- 16.1. As from the official date of entry into force of the 01 series of amendments, no Contracting Party applying this Regulation shall refuse to grant ECE approval under this Regulation as amended by the 01 series of amendments.
- 16.2. As from 12-months after the date of entry into force of the 01 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the child restraint system type to be approved meets the requirements of this Regulation as amended by the 01 series of amendments.
- 16.3. During the 12-month period which follows the date of entry into force of the 01 series of amendments, Contracting Parties applying this Regulation can continue to grant type approvals to those child restraint systems which comply with the requirements of this Regulation as in its original version.
- 16.4. During the 36-month period which follows the date of entry into force of the 01 series of amendments, Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to the original version of this Regulation.

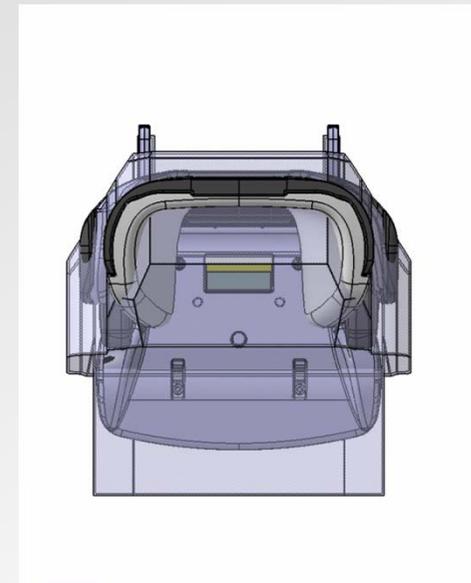
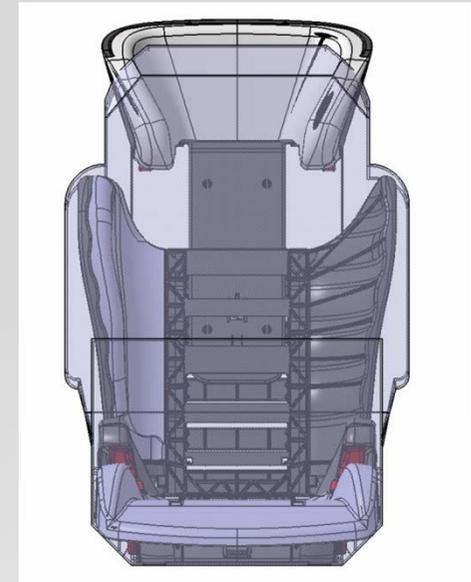
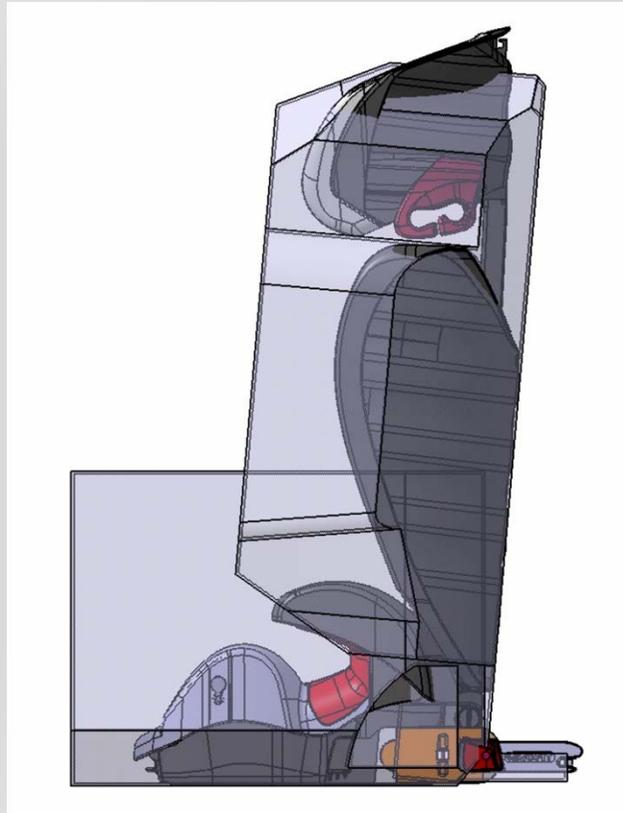
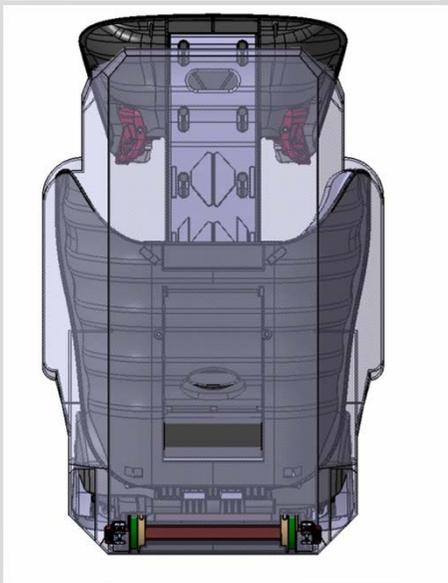
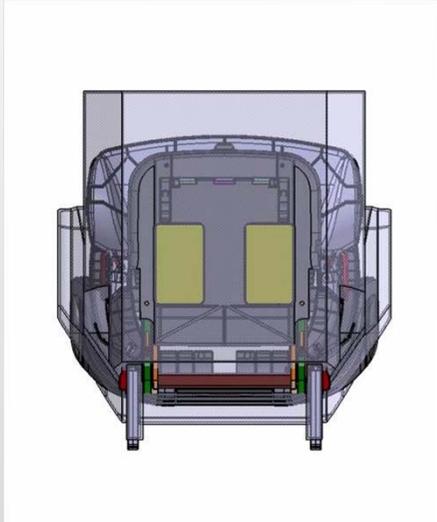
# Open issue

- Need of a common fixture for universality between OICA and CLEPA through an ISO definition.
- Two visions :
  - Consumers and ECRS manufacturers
  - OEMs
- A small step is still needed before inclusion of this fixture in ECE R16 Annex

# ANEC Euro NCAP survey

- The Kidfix could be installed (in belted mode) on the rear outboard seats of the vast majority of cars. The only cars (out of 32) where they could not be properly installed were the Mitsubishi Space Star and the Opel Adam. These cars failed because the CRS head restraint could not be fully raised due to the vehicle roof. This might no longer be a problem when the maximum stature to accommodate is set lower than 150cm.
- Of the 30 cars that could accommodate a Kidfix in belted mode on the outboard rear seats, two had issues when installing the CRS with ISOFIX. That suggests that in at least 28 cars ISOFIX anchorages and adult belts were well-aligned.
- Five cars (all with a French connection) were equipped with ISOFIX connections on the front passenger seat and able to click in a Kidfix.
- The rear middle seat was in fourteen cases not exempted from installing a Kidfix in either belted or ISOFIX mode (two cars). Four were unable to accommodate in belted mode.
- Two cars were equipped with a 3rd seating row, suitable for installing a Kidfix in belted mode.

# CLEPA – ISO work - Kidfix



# OICA position

## Booster Seat



Child size  $\leq$   
125\* cm

**[Universal:** Side impact protection is the responsibility of CRS manufacturer, fixture has to be defined and further discussions needed.

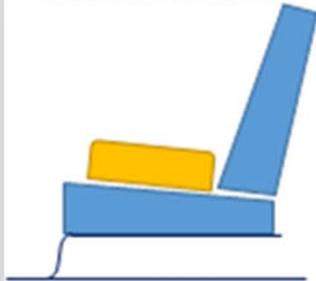
**Vehicle Specific:** Side impact protection is the responsibility of CRS manufacturer

[vehicle specific by intend or by not fitting universal booster seat gabarit]

Child size  $>$   
125\* cm

**Vehicle Specific only:** Side impact to be done by CRS manufacturer  
Compatibility with specific Vehicle must be checked]

## Booster Cushion



Child size  $>$ 100cm

**Vehicle Specific only :** Side impact to be done by CRS manufacturer in cooperation with OEM  
Protection within specific Vehicle must be checked]

# Decisions of last IWG ECRS meeting

- Interoperability (Geometry)

- ISO fixture 2014-04-23
- Up to 135 stature 95%ile seating height with 10% tolerance
- According to § 6.3.2.2.

- Impact validation

- Up to 125 stature in frontal, lateral impacts with Q6 dummy.
- From 125 stature only frontal impact validation with Q10 dummy (criteria to be supplied by EEVC WG12 in May)



# Conclusions

- Agreement on phase 2 for amendment of ECE R129
- Still a problem for amendment of ECE R16 concerning the new fixture for universal booster seats
- Skip the lateral impact validation with Q10 for ECRS for child > 125 cm