

## Summary of the 2016 CRS test for Latin America

For the fourth consecutive year a test on Child Restraint Systems (CRS) for the Latin American market is carried out. In addition to existing partners Fundación Gonzalo Rodríguez (Uruguay) and ProTeste (Brasil), two new partners joined the project: ODECU (Chile) and El Poder del Consumidor (Mexico).

The test aims to

- Raise awareness amongst consumers,
- Generate consumer information on safety performances and
- Deliver input for the Latin NCAP reference list.

### Stakeholders

Global NCAP (David Ward)  
ICRT (Guido Adriaenssens)

### Project team

Alejandro Furas (Global NCAP)  
Volker Sander, Andreas Ratzek, Jonas Kremer (ADAC)  
Ronald Vroman (ICRT, Project Leader)

### Partners

ProTeste (Brazil) – Thiago Alves Tinoco, Dino Lameira, Michelle dos Santos Marques  
Fundación Gonzalo Rodríguez (Uruguay) – Florencia González, Mathias Silva  
ODECU (Chile) – Stefan Larenas  
El Poder del Consumidor (Mexico) – Stephan Brodziak

### Launch of results and publicity

Partners agreed to release results of the Uruguayan CRS by FGR in October during the National Safety Week. For the Brazilian CRS the launch is scheduled end of November. This should not be a problem bearing in mind the lack of overlap between the two markets.

## Project Summary

### Test setup

The test setup remained unchanged compared to the 2013 - 2015 projects, allowing direct comparison of test results. CRS were tested in frontal and side impact as in the pre-2015 (European) ETC test. Ease of use was assessed by means of a checklist tailored to the South American situation.

### Scope:

The selection of products to be incorporated in the test was based on relevance and availability in the Latin American markets, based on nominations by ProTeste, Fundación Gonzalo Rodríguez and Latin NCAP. Additional contributions came from ODECU and El Poder del Consumidor. The vast majority of products were sourced in Brazil and Uruguay, some in Mexico and Chile. Non harmonized markets and trade barriers limit brand overlap.

This year's focus was on integral harness baby-seats. Multigroup seats seem to be popular as well and are offered in the configuration group 0/1/2 or 1/2. This year two group 0/1/2 product were included in the test.

All but one products in test were approved according to UN-R44 and / or NBR 14400, one product meets FMVSS123.

In total 12 products / 16 configurations were tested in this year's test, the most Latin American brands. Some local brands belong to international companies, like Cosco (Dorel) and Burigotto (Peg Pérego). Infanti market the Stages which originates from Joie.

The Bebesit Compass (sourced in Uruguay) and Lenox (Kidido) Caracol (from Brazil) are identical products.

Annex I lists products in test with main specifications.

El Poder del Consimudor sent in several products available in Mexico to be compared with products tested earlier in Latin America or Europe. Three out of six products sent in were identical to products tested earlier according to the same test specifications. These could be added to results. Due to some practicalities this could be done short before the end of November launch. Annex III provides the justification and table of results for these products.

### Process

The process of sourcing, transporting and testing products at ADAC ran pretty smoothly, although increased efforts were needed to get Mexican products on board. Tests at the ADAC laboratory were carried out according to planning. Ease of use tests were carried out by FRG and PT in Rio de Janeiro with remote support from ADAC and ICRT.

### **Follow up 2015 test**

In last year's test several group 0/1/2 products raised concerns:

These products cover two or three mass groups. They seem to be a popular, cheap solution and are offered (a.o) in the configurations group 0/1/2 or 1/2. With harness removed, these seats can accommodate bigger children which then are secured with the car belt. In some variants –those based on toddler seats- this can lead to an increased risk of abdominal injuries because of the high routing of the lap belt over the child's tummy. In such case the R44 approval for children from 15-25kg is questionable.

The issue was tabled in GRSP, UNECE's body responsible for UN Regulation 44. It was acknowledged that current wording in R44 is not strong enough and can be interpreted in different ways. A proposal to tackle the issue needs further detailing and will be discussed further in December 2016.

### **General findings**

- Overall results are generally in line with previous years, and show that there is still room for improvements in different areas –although we see also some encouraging results, like the Cosco Moove – first CRS scoring 5 stars.
- Some infant carriers can be used in combination with a separate base that usually is permanently installed in the car. The baby shell can be clicked on the base which is easier than installing with the cars seat belt.
- In dynamic tests high dummy readings, undesirable dummy movements and structural failures were recorded which resulted in low scores.
- Side impact protection is still point of attention, but at the moment not legally required. Several CRS offer no or insufficient protection in side- impacts: side wings are not sufficiently dimensioned and/or padding material is lacking.

- Adjusting the harness to the size of the child is not straightforward: None of the seats was equipped with a so called 'one hand operation' system. All required the harness to be disconnected and fed through another slot, increasing the chance of misuse.
- Also some CRS have a limited adjustment range and / or limited number of slots (bigger step size).
- Multi-group CRS are bulky and not easy to install due to size and different, complicated belt routes.
- CRS dedicated to a single mass group tend to perform better, multi group seats are at best a compromise.

The 2016 test results are listed below, a consolidated table – with results 2013-2016- can be found in Annex II.

## 2016 Test results:

Brand	Model	Installation	Base	Publ. Year	Group	Frontal impact	Side impact	Safety total	Ease of use	Final score (max 5)
Cosco	Moove	Belted	-	2016	0+	++	++	++	+	★★★★★
Britax	B-Safe	Latch	√	2016	4-30 lbs	+	0	+	+	★★★★★
Chicco	KeyFit	Belted	√	2016	0+	++	0	+	+	★★★★★
Chicco	KeyFit	Belted	-	2016	0+	++	0	+	+	★★★★★
Lenox (Kiddo)	Cozycot	Belted	-	2016	0+	+	0	+	+	★★★★★
Prime Baby	Journey	Belted	-	2016	0+	++	+	+	0	★★★★★
Bebesit	Compass Elite	Belted	-	2016	0+	++	-	0	0	★★★★
Britax	B-Safe	Belted	-	2016	4-30 lbs	-	0	0	+	★★★★
Britax	B-Safe	Belted	√	2016	4-30 lbs	0	0	0	+	★★★★
Burigotto	Touring Evolution SE	Belted	-	2016	0+	+	-	0	+	★★★★
Lenox (Kiddo)	Caracol	Belted	-	2016	0+	++	-	0	+	★★★★
Tutti Baby	Nino	Belted	-	2016	0+	+	0	0	0	★★★★
Bebesit	Compass Elite	Belted	√	2016	0+	0	--	--	+	★★★
Lenox (Kiddo)	Caracol	Belted	√	2016	0+	0	--	--	0	★★★
Infanti	Barletta S-500	Belted		2016	0+/I/II	0	-	0	0	★★★★
Infanti	Stages by Joie	Belted		2016	0+/I/II	-	-	-	0	★★★

## 2016 Test highlights:

- The Cosco Moove is a relatively simple seat, delivering good results in each dynamic test that was performed. It therefore obtains the first 5 star score.
- Apart from the international brands (Chicco, Britax) also local (and probably more affordable?) brands like the Lenox (Kiddo) Cozycot and Prime Baby Journey offer 4 star protection.
- The Britax B-safe did well when used with base but results were worse when installing the shell with the car seat belt: The CRS is held then by the lap part of the seat belt only, the CRS slips of the car seat in frontal impact. Britax assumes the car is equipped with ALR/ELR car seat belts, our test car (VW Golf) is equipped with seat belts without ALR/ELR. In such case Britax instructions say that a belt clip should be used which needs to be ordered separately. As this provision was not delivered with the product, the CRS was tested 'as is', with the result mentioned.
- The Burigotto Touring Evolution SE did 3 stars, variants of this seat tested in previous years did 1 (Touring SE) and 4 stars (Touring Evolution 3042) respectively.
- The Infanti Barletta demonstrated shortcomings when used in group 0+ mode (RWF). The seat rotates seriously, and there is rupture in the base.
- When used on a base, the Lenox (Kiddo) Caracol and the identical Bebesit Compass suffer from a failing base in frontal impact.
- Some (Brazilian) babyseats lack airbag warning labels and/or blue color coded belt routes. This is not mandatory in Brazil according to the NBR, but it is according to

R44 and therefore confusing to consumers as both variants are available in one national market.

- Only the Britax B-Safe can be 'clicked' on the base that stays in the car. The CRS on the bases of the Chicco, Bebesit and Lenox (Kiddo) require that the car seat belt is routed around the babyshell when this is clicked on the base.
- The Britax B-safe base can be installed either with the car seat belt or with the LATCH attachments. Best performance is in LATCH mode.

### **Recommendations:**

The general recommendations remain the same as in previous years:

- Call for
  - Improved frontal impact protection: CRS should be able to cope with a Latin NCAP type of crash-severity, although these are a more severe than legally required.
  - Side protection in legal requirements
  - Improved ease of use:
    - Installation in car – simple belt route
    - Harness adjustment
- Encourage Rearward facing transport (RWF) transport, also for toddlers
- Speed up introduction of LATCH /Isofix seats
- Introduce UN R129 requirements in Latin American legislation

Bottom line: Children should benefit the same level of protection as adults.

### **General message in the meantime:**

Any CRS is better than none

- Change to bigger CRS as late as possible (especially from rearward facing to forward facing)
- Correct use determines level of protection

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Annex I:

CRS Test for Latin America 2016

				
Brand	Bebesit	Lenox (Kiddo)	Burigotto	Britax
Model	Compass Elite (with base)	Caracol (with base)	Touring Evolution SE	B-Safe (with base)
Weight range	0-13kg	0-13kg	0-13kg	4-30lbs
(ECE) group	Group 0+	Group 0+	Group 0+	Group 0+
Sourced in	Uruguay	Brazil	Brazil	Uruguay
(ECE) approval nr	E8-045387 (seat) E8 - 46220 (base)	n/a	n/a	n/a
Inmetro, No de serie do selo, NBR 14400: 1999	n/a	NBR 015.726.825 (seat) (no approval on base)	NBR 000576/2016	n/a
Remarks	Identical to Lenox Caracol. Base can installed with LATCH belt (not included)	Identical to Bebsit Compass Check brandname: Lenox or Kiddo?	n/a	Meets FMVSS 213

				
Brand	Chicco	Cosco	Infanti	Infanti
Model	KeyFit (with base)	Moove	Stages by Joie	Barletta S500
Weight range (ECE) group	0-13kg Group 0+	0-13kg Group 0+	0-25kg Group 0/1/2	0-25kg Group 0/1/2
Sourced in	Uruguay	Brazil	Uruguay	Chile
R44 (04) approval nr	E24-040001	n/a	E11-041504	E9 -042023 +chilean label
Inmetro, No de serie do selo, NBR 14400: 1999	n/a	NBR 015.535.039	n/a	n/a
Remarks:				

			
Brand	Lenox (Kiddy)	Tutti Baby	Prime Baby
Model	Cozycot	Nino	Journey
Weight range	0-13kg	0-13kg	0-13kg
(ECE) group	Group 0+	Group 0+	Group 0+
Sourced in	Brazil	Brazil	Brazil
R44 (04) approval nr	n/a	n/a	E24 -040039
Inmetro, No de serie do selo, NBR 14400: 1999	NBR 015.723.668	NBR 005112/2015	NBR 015.180.561
Remarks:			



Annex II: results 2013-2016

Brand	Model	Installation	Base	Publ. Year	Group	Frontal impact	Side impact	Safety total	Ease of use	Final score (max 5)
<b>Cosco</b>	<b>Moove</b>	<b>Belted</b>	-	<b>2016</b>	<b>0+</b>	<b>++</b>	<b>++</b>	<b>++</b>	<b>+</b>	★★★★★
Bébé Confort	StreetyFix	Belted	-	2013	0+	++	0	+	+	★★★★★
<b>Britax</b>	<b>B-Safe</b>	<b>Latch</b>	√	<b>2016</b>	<b>4-30 lbs</b>	<b>+</b>	<b>0</b>	<b>+</b>	<b>+</b>	★★★★★
Burigotto	Touring Evolution 3042	Belted	-	2015	0+	++	0	+	0	★★★★★
Chicco	Keyfit	Belted	-	2013	0+	++	0	+	+	★★★★★
<b>Chicco</b>	<b>KeyFit</b>	<b>Belted</b>	√	<b>2016</b>	<b>0+</b>	<b>++</b>	<b>0</b>	<b>+</b>	<b>+</b>	★★★★★
<b>Chicco</b>	<b>KeyFit</b>	<b>Belted</b>	-	<b>2016</b>	<b>0+</b>	<b>++</b>	<b>0</b>	<b>+</b>	<b>+</b>	★★★★★
<b>Lenox (Kiddo)</b>	<b>Cozycot</b>	<b>Belted</b>	-	<b>2016</b>	<b>0+</b>	<b>+</b>	<b>0</b>	<b>+</b>	<b>+</b>	★★★★★
Maxi Cosi	Citi SPS	Belted	-	2013	0+	++	0	+	+	★★★★★
<b>Prime Baby</b>	<b>Journey</b>	<b>Belted</b>	-	<b>2016</b>	<b>0+</b>	<b>++</b>	<b>+</b>	<b>+</b>	<b>0</b>	★★★★★
Römer	Baby Safe Plus	Belted	-	2013	0+	++	0	+	++	★★★★★
Römer	Baby Safe Plus Isofix base	Isofix	√	2013	0+	++	0	+	++	★★★★★
Abc Design	Risus	Belted	-	2015	0+	++	0	+	+	★★★★
<b>Bebesit</b>	<b>Compass Elite</b>	<b>Belted</b>	-	<b>2016</b>	<b>0+</b>	<b>++</b>	<b>-</b>	<b>0</b>	<b>0</b>	★★★★
<b>Britax</b>	<b>B-Safe</b>	<b>Belted</b>	-	<b>2016</b>	<b>4-30 lbs</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>+</b>	★★★★
<b>Britax</b>	<b>B-Safe</b>	<b>Belted</b>	√	<b>2016</b>	<b>4-30 lbs</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>+</b>	★★★★
Burigotto	Touring	Belted	-	2013	0+	++	-	0	+	★★★★
<b>Burigotto</b>	<b>Touring Evolution SE</b>	<b>Belted</b>	-	<b>2016</b>	<b>0+</b>	<b>+</b>	<b>-</b>	<b>0</b>	<b>+</b>	★★★★
Galzerano	Cocoon infiniti	Belted	-	2014	0+	+	-	0	+	★★★★
Galzerano	Piccolina	Belted	-	2013	0+	+	-	0	0	★★★★
<b>Lenox (Kiddo)</b>	<b>Caracol</b>	<b>Belted</b>	-	<b>2016</b>	<b>0+</b>	<b>++</b>	<b>-</b>	<b>0</b>	<b>+</b>	★★★★
Peg Perego	Primo Viaggio Tri-Fix	Belted	-	2013	0+	++	-	0	+	★★★★
<b>Tutti Baby</b>	<b>Nino</b>	<b>Belted</b>	-	<b>2016</b>	<b>0+</b>	<b>+</b>	<b>0</b>	<b>0</b>	<b>0</b>	★★★★
Abc Design	Risus + Isofix Base	Isofix	√	2015	0+	--	-	--	+	★
<b>Bebesit</b>	<b>Compass Elite</b>	<b>Belted</b>	√	<b>2016</b>	<b>0+</b>	<b>0</b>	<b>--</b>	<b>--</b>	<b>+</b>	★
Burigotto	Touring SE 3030	Belted	-	2014	0+	++	--	--	+	★
Graco	Snug Ride +base (LATCH)	Latch	√	2015	(22lbs)	--	-	--	+	★
Lenox	Casulo	Belted	-	2014	0+	++	--	--	+	★
Cosco	CC 2001	Belted	-	2015	0+	0	0	0	0	★
<b>Lenox (Kiddo)</b>	<b>Caracol</b>	<b>Belted</b>	√	<b>2016</b>	<b>0+</b>	<b>0</b>	<b>--</b>	<b>--</b>	<b>0</b>	★

Brand	Model	Installation	Publ. Year	Group	Frontal impact	Side impact	Safety total	Ease of use	Final score (max 5)
Römer	Duo Plus	Isofix	2013	I	+	+	+	++	★★★★★
Römer	Safefix Plus	Isofix	2015	I	+	+	+	++	★★★★★
Takata	Midi	Isofix	2015	i-Size (61-100)	+	+	+	+	★★★★★
Römer	Duo Plus	Belted	2013	I	-	0	0	++	★★★★
Bebe Confort	Axiss	Belted	2014	I	0	+	0	+	★★★★
Römer	Safefix Plus	Belted	2015	I	0	0	0	++	★★★★
Baby Style	Cadeira 7000	Belted	2014	I	-	-	-	0	★★
Chicco	Xpace	Belted	2014	I	-	-	-	+	★★
Galzerano	Orion Master	Belted	2014	I	--	-	--	0	★
Peg Perego	Viaggio 0+ / I Switchable	Belted	2013	0+/I	-	0	0	+	★★★★
Nania	Cosmo SP Ferrari	Belted	2014	0/I	-	0	0	+	★★★★
Baby Style	333	Belted	2014	0+/I	--	-	--	-	★
Chicco	Eletta	Belted	2014	0+/I	--	-	--	+	★
Infanti	Saville v3	Belted	2014	0+/I	--	-	--	0	★
Premium Baby	Grand Prix	Belted	2014	I/II	--	0	--	0	★
Bebesit	Lemans	Belted	2015	I/II	--	0	--	+	★
Burigotto	Matrix Evolution	Belted	2015	0+/I/II	-	0	0	+	★★★★
<b>Infanti</b>	<b>Barletta S-500</b>	<b>Belted</b>	<b>2016</b>	<b>0+/I/II</b>	<b>0</b>	<b>-</b>	<b>0</b>	<b>0</b>	<b>★★★★</b>
Safety 1ST	Recline	Belted	2015	0+/I/II	-	0	0	0	★★★★
<b>Infanti</b>	<b>Stages by Joie</b>	<b>Belted</b>	<b>2016</b>	<b>0+/I/II</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>★★</b>
Bebesit	GTI	Belted	2015	0+/I/II	--	0	--	0	★
Galzerano	Futura	Belted	2015	0/I/II	--	0	--	0	★
Infanti	Star	Belted	2013	I/II/III	+	+	+	+	★★★★★
Burigotto	Múltipla 123	Belted	2013	I/II/III	0	0	0	+	★★★★
Chicco	Neptune	Belted	2013	I/II/III	+	0	0	0	★★★★
Graco	Cadeira Nautilus	Belted	2013	I/II/III	0	0	0	+	★★★★
Infanti	V7	Belted	2015	I/II/III	-	-	-	-	★★
Cosco	Commuter XP	Belted	2013	I/II/III	0	--	--	0	★
Infanti	Savile Max - V8 A	Belted	2014	0+ / I/II/III	-	-	-	0	★★

### Annex III:

The **MaxiCosi Axiss** is identical to the BebeConfort Axiss, published already in Latin America in 2014.

The **Cybex Aton 4 and Maxi Cosi Pearl** are similar to the European equivalents, but were tested in Europe against different test specifications. **Results therefore cannot be compared.** The Maxi-Cosi was tested in a different car body (Opel Astra) and the Cybex in far more demanding setup with Golf 7 body and more severe side impact. As a general remark we can say that both did well on safety and ease of use in the respective conditions. Also the Aton4 has stickers that tell that the Aton4 only can be used in Mexico and Europe and thus possibly not interesting for other partners.

The **Chicco Key Fit 30** differs from the R44 approved Key Fit that also is included in this year's test. The Key Fit 30 meets the American FMVSS specifications. Although the shell is similar, the internal harness is equipped with an additional chest clip (not allowed under R44) and the buckle is different, with plastic parts in one and metal parts in the other case. More differences can be seen in the bases. The base of the Key Fit 30 has different belt routing and this US version allows for LATCH installation. Please make clear in your publications what version you have tested.

We hope to keep this one on the list for next year's test.

The **Stokke (BeSafe) IziGo (X1)** and **Cybex Sirona** are identical to the European ones and tested according to the correct test specifications. Based on dummy readings and dynamic test observations the table below was generated. For ease of use no data are available yet, but this will not influence the starrating. Our experiences in Europe don't show important shortcomings in this area, we are looking how we can fill in this remaining gaps.

Brand	Model	Group	Installation	frontal impact	side impact	Total safety	Ease of Use	Starrating	
Stokke (BeSafe)	IziGo X1	0+	Belted	++	+	++		5	stars
Bebe Confort	Axiss	I	Belted	0	+	0	+	3	stars
Cybex	Sirona	0+/1	Isofix	++	0	+		4	stars