Proposal for amendment to Regulation No. 44

I. Proposal for a new series of amendment to Regulation No. 44 (Uniform provisions concerning the approval of restraining devices for child occupants of power-driven vehicles ("Child Restraint Systems"))

Paragraph 2.1., amend to read:

"2.1. Child restraint system ("restraint") means an arrangement of components which may comprise the combination of straps or flexible components with a securing buckle, adjusting devices, attachments and in some cases a supplementary device as a carry-cot, infant carrier, a supplementary chair and/or an impact shield, capable of being anchored to a power-driven vehicle. It is so designed as to diminish the risk of injury to the wearer, in the event of a collision or of abrupt deceleration of the vehicle, by limiting the mobility of the wearer's body.

"ISOFIX" is a system for the connection of child restraint systems to vehicles which has two vehicle rigid anchorages, two corresponding rigid attachments on the child restraint system and a mean to limit the pitch rotation of the child restraint system.

Delete paragraph 2.1.1.6:

2.1.1.6 ISOFIX child restraint systems fall into 7 ISOFIX size classes described in Regulation No. 16, Annex 17, Appendix 2:

	A	ISO/F3:	Full Height Forward Facing toddler CRS
	В	ISO/F2:	Reduced Height Forward Facing toddler CRS
	<u>B1</u>	ISO/F2X:	Reduced Height Forward Facing Toddler CRS
-	С	ISO/R3:	Full Size Rearward Facing toddler CRS
	D	ISO/R2:	Reduced Size Rearward Facing toddler CRS
	E	ISO/R1:	Rearward Facing infant CRS
	F	ISO/L1:	Left Lateral Facing position CRS (carry cot)
-	G	ISO/L2:	Right Lateral Facing position CRS (carry cot)

Mass group		ISOFIX size category			
	F	ISO/L1			
0 - up to 10 kg	G	ISO/L2			
	E	ISO/R1			
	C	ISO/R3			
0+ - up to 13 kg	Đ	ISO/R2			
	E	ISO/R1			
	A	ISO/F3			
	B	ISO/F2			
I 9 to 18 kg	B1	ISO/F2X			
	C	ISO/R3			
	Đ	ISO/R2			

Delete paragraph 2.14.2.to 2.14.5:

- 2.14.2. "ISOFIX low anchorage" means one 6 mm diameter rigid round horizontal bar, extending from vehicle or seat structure to accept and restrain an ISOFIX child restraint system with ISOFIX attachments.
- 2.14.3. "ISOFIX anchorages system" means a system made up of two ISOFIX low anchorages fulfilling the requirements of Regulation No. 14 which is designed for attaching an ISOFIX child restraint system in conjunction with an anti-rotation device.
- 2.14.4. "Anti rotation device"
- (a) An anti-rotation device for an ISOFIX universal child restraint system consists of the ISOFIX top tether.
- (b) An anti-rotation device for an ISOFIX semi-universal child restraint system consists of either a top tether, the vehicle dashboard or a support leg intended to limit the rotation of the restraint during a frontal impact.
- (c) For ISOFIX, universal and semi-universal, child restraint systems the vehicle seat itself does not constitute an anti-rotation device.
- 2.14.5. "ISOFIX top tether anchorage" means a feature fulfilling the requirements of Regulation No. 14, such as a bar, located in a defined zone, designed to accept an ISOFIX top tether strap connector and transfer its restraint force to the vehicle structure.

Delete paragraph 2.20.5:

- 2.20.5. "ISOFIX position" means a system which allows to install:
- (a) Either an universal ISOFIX forward facing child restraint system as defined in this Regulation;
- (b) Or a semi universal ISOFIX forward facing child restraint system as defined in this Regulation;
- (c) Or a semi-universal ISOFIX rearward facing child restraint system as defined in this Regulation;

- (d) Or a semi universal ISOFIX lateral facing position child restraint system as defined in this Regulation;
- (e) Or a specific vehicle ISOFIX child restraint system as defined in this Regulation.

Delete paragraph 2.28 to 2.29:

- 2.28. "ISOFIX attachment" means one of the two connections, fulfilling the requirement of paragraph 6.3.2. of this Regulation, extending from the ISOFIX child restraint system structure, and compatible with an ISOFIX low anchorage.
- 2.29. "ISOFIX child restraint system" means a child restraint system which has to be attached to an ISOFIX anchorage system fulfilling the requirement of Regulation No. 14.

Paragraph 2.30. (former), renumber as paragraph 2.28:

2.30. 2.28. "Seat bight" means the area close to the intersection of the surfaces of the vehicle seat cushion and the seat back.

Delete paragraph 2.31 to 2.36:

- 2.31. "Vehicle seat fixture (VSF)" means a fixture, according to ISOFIX size classes defined in paragraph 2.1.1.6. and whose dimension are given in Figures 1 to 6 of Annex 17, Appendix 2 to Regulation No. 16, used by a child restraint manufacturer to determine the appropriate dimensions of an ISOFIX child restraint system and the location of its ISOFIX attachments.
- 2.32. "ISOFIX top tether connector" means a device intended to be attached to an ISOFIX top tether anchorage.
- 2.33. "ISOFIX top tether hook" means an ISOFIX top tether connector typically used to attach an ISOFIX top tether strap to an ISOFIX top tether anchorage as defined in Figure 3 of Regulation No. 14.
- 2.34. "ISOFIX top tether strap" means a webbing strap (or equivalent) which extends from the top of an ISOFIX child restraint system to the ISOFIX top tether anchorage, and which is equipped with an adjustment device, a tension relieving device, and an ISOFIX top tether connector.
- 2.35. "ISOFIX top tether attachment" is a device to secure the ISOFIX top tether strap to the ISOFIX child restraint system.
- 2.36. "A tension relieving device" means a system which allow to release the device which adjust and maintain the tension in the ISOFIX top tether strap.

Paragraphs 2.37. to 2.32. (former), renumber as paragraphs: 2.29. to 2.32.

- 2.37.2.29 "Adult safety-belt webbing guide" means a device through which the adult belt passes for its correct routing, that allows free webbing movement.
- 2.38.2.30 "Type approval test", means a test to determine the extent to which a child restraint system type submitted for approval is capable of satisfying the requirements.
- 2.39.2.31 "Production qualification test", means a test to determine whether the manufacturer is able to produce a child restraint system in conformity with the child restraint systems submitted for type approval.

2.40.2.32. "Routine testing", means the testing of a number of restraint systems selected from a single batch to verify the extent to which they satisfy the requirements.

Delete paragraph 4.8.:

4.8. ISOFIX marking

If the product includes ISOFIX attachments, the following information shall be permanently visible to someone installing the restraint in a vehicle:

The ISO ISOFIX logo followed by the letter(s) that is/are appropriate for the ISOFIX size class(es) into which the product fits. As a minimum, a symbol consisting of a circle with a diameter of minimum 13 mm and containing a pictogram, the pictogram shall contrast with the background of the circle. The pictogram shall be clearly visible either by means of contrast colors or by adequate relief if it is molded or embossed.



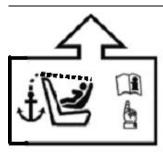
The following information may be conveyed by pictograms and/or text. The marking shall indicate:

- (a) The essential relevant steps needed for making the seat ready for installation. For example, the method of extending the ISOFIX latch system shall be explained;
- (b) The position, function, and interpretation of any indicator shall be explained;
- (c) The position and if necessary the routing of top tethers, or other means of limiting seat rotation requiring action by the user, shall be indicated using one of the following symbols as appropriate;









- (d) The adjustment of ISOFIX latches and the top tether, or other means of limiting seat rotation, requiring action of the user shall be indicated;
- (e) The marking shall be permanently attached and be visible to a user installing the seat;
- (f) Where necessary reference should be made to the child restraint user instructions and to the location of that document using the symbol below.



Paragraph 6.1.3, amend to read:

6.1.3. According to the category which it belongs to, the child restraint shall be secured to the vehicle structure or to the seat structure.

Possible configurations for approval Groups / categories table

Groups / categories table									
		Universal (1)		Semi-universal (2)		Restricted		Specific vehicle	
Group category		CRS	ISOFIX CRS	CRS	ISOFIX CRS	CRS	ISOFIX CRS	CRS	ISOFIX CRS
0	Carry-cot	A	NA	A	A	A	NA	A	A
	Rearward facing	A	NA	A	A	A	NA	A	A
0+	Rearward facing	A	NA	A	A	A	NA	A	A
I	Rearward facing	A	NA	A	A	A	NA	A	A
	Forward facing (integral)	A	A	A	A	A	NA	A	A
	Forward facing (non-integral)	NA	NA	NA	NA	NA	NA	NA	NA
	Forward facing (non-integral – see paragraph 6.1.12.)	A	NA	A	NA	A	NA	A	A
II	Rearward facing	A	NA	A	NA	A	NA	A	A
	Forward facing (integral)	A	NA	A	NA	A	NA	A	A
	Forward facing (non integral)	A	NA	A	NA	A	NA	A	A
III	Rearward facing	A	NA	A	NA	A	NA	A	A
	Forward facing (integral)	A	NA	A	NA	A	NA	A	A
	Forward facing (non integral)	A	NA	A	NA	A	NA	A	A

With:

CRS: Child restraint system

A: Applicable NA: Not Applicable

⁽¹⁾ ISOFIX universal CRS means forward facing restraints for use in vehicles with positions equipped with ISOFIX anchorages system and a top tether anchorage.

⁽²⁾ ISOFIX semi universal CRS means:

[•] Forward facing restraints equipped with support leg or

Rearward facing restraints equipped with a support leg or a top tether strap for use in vehicles with positions equipped with ISOFIX anchorages system and a top tether anchorage if needed

	Universal (1)		Semi-universal-(2)		Restricted		Specific vehicle	
	CRS	ISOFIX	CRS	ISOFIX	CRS	ISOFIX	CRS	ISOFIX
Group category		CRS		CRS		CRS		CRS

- Or rearward facing restraints, supported by the vehicle dashboard, for use in the front passenger seat equipped with ISOFIX anchorages system,
- Or lateral facing position restraint equipped if needed with an anti-rotation device for use in vehicles with positions equipped with ISOFIX anchorages system and top tether anchorage if needed.
- 6.1.3.1. For the "universal" and "restricted" categories, by means of an adult safety-belt (with or without a retractor) meeting the requirements of Regulation No. 16 (or equivalent) fitted to anchorages meeting the requirements of Regulation No. 14 (or equivalent).

Delete paragraphs 6.1.3.2.

6.1.3.2. For ISOFIX "universal" child restraint systems by means of ISOFIX attachments and ISOFIX top tether strap meeting the requirements of this Regulation fitted to ISOFIX anchorages system and ISOFIX top tether anchorage meeting the requirements of Regulation No. 14.

Paragraph 6.1.3.3. (former), renumber as paragraph: 6.1.3.2.

6.1.3.3 **6.1.3.2**. For the "semi-universal" category: by means of the lower anchorages prescribed in Regulation No. 14 and additional anchorages meeting the recommendation of Annex 11 to this Regulation.

Delete paragraphs 6.1.3.4. to 6.1.3.4.

- 6.1.3.4. For ISOFIX "semi universal" Child Restraint Systems by means of ISOFIX attachments and ISOFIX top tether strap or a support leg or vehicle dashboard, meeting the requirements of this Regulation fitted to ISOFIX anchorages and/or to ISOFIX top tether anchorage meeting the requirements of Regulation No. 14.
- 6.1.3.5 **6.1.3.3**. For the "specific vehicle" category: by means of the anchorages designed by the manufacturer of the vehicle or the manufacturer of the child restraint.
- 6.1.3.6 6.1.3.4. In the case of child restraining straps or child restraint attachment strap utilizing belt anchorages to which are already fitted an adult belt or belts, the Technical Service shall check that:

The effective adult anchorage position is as approved under Regulation No. 14 or equivalent;

Effective operation of both devices is not hindered by the other;

The buckles of the adult and additional system shall not be interchangeable.

In the case of child restraining devices utilizing bars, or extra devices attached to the anchorages approved under Regulation No. 14, which move the effective anchorage position outside the field of Regulation No. 14, the following points shall apply:

Such devices will only be approved as semi-universal or specific vehicle devices;

The Technical Service shall apply the requirements of Annex 11 to this Regulation to the bar and the fastenings;

The bar will be included in the dynamic test, with the loading being applied to the mid-position and the bar and its greatest extension, if adjustable;

The effective position and operation of any adult anchorage by which the bar is fixed shall not be impaired.

6.1.3.7 **6.1.3.5**. Child restraints utilizing a support leg shall only be approved under the "semi-universal" or the "specific vehicle" category and the requirements of Annex 11 to this Regulation shall be applied. The manufacturer of the child restraint system shall take into account the needs of the support leg for their correct functioning in each vehicle and provide this information.

Paragraph 6.1.8, amend to read:

6.1.8. Child restraint systems of the "universal" category, except ISOFIX universal child restraint systems, shall have a main load-bearing contact point, between the child restraint and the adult safety-belt. This point shall not be less than 150 mm from the Cr axis when measured with the child restraint on the dynamic test bench installed in accordance with Annex 21 to this Regulation, without a dummy. This shall apply to all adjustment configurations. Additional alternative belt routes are allowed. Where an alternative belt route exists, the manufacturer shall make specific reference to the alternative route in the user instructions, as required in paragraph 15. When tested, using such alternative belt route(s), the restraint shall comply with all the requirements of the Regulation with the exception of this paragraph.

Delete paragraph 6.3.:

6.3. ISOFIX restraint specifications

6.3.1. General characteristics

6.3.1.1. Dimensions

The maximum lateral, downward, and rearward dimensions for the ISOFIX child restraint system and the locations of the ISOFIX anchorages system with which its attachments shall engage are defined for the ISOFIX child restraint system manufacturer by the Vehicle Seat Fixture (VSF) defined by paragraph 2.31. of this Regulation.

6.3.1.2. Mass

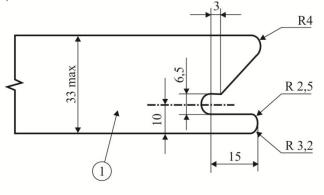
The mass of an ISOFIX child restraint system of universal and semiuniversal categories and of mass group 0, 0+, 1 shall not exceed 15 kg.

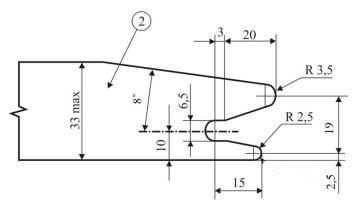
6.3.2. ISOFIX attachments

6.3.2.1. Type

ISOFIX attachments may be according to examples shown in Figure 0 (a) below, or other appropriate designs that are part of a rigid mechanism having provision for adjustment, the nature of which is determined by the ISOFIX child restraint system manufacturer.

Figure 0 (a)





Dimensions in mm

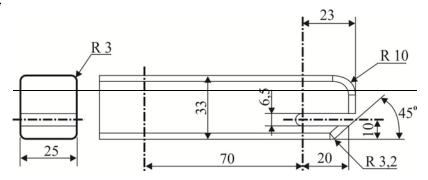
Key

- 1 ISOFIX child restraint system attachment example 1
- 2 ISOFIX child restraint system attachment example 2

6.3.2.2. Dimensions

Dimensions for the portion of the ISOFIX child restraint system attachment that engages the ISOFIX anchorage system shall not exceed the maximum dimensions given by the envelope in Figure 0 (b)

Figure 0 (b)



Dimensions in mm

6.3.2.3. Partial latching indication

The ISOFIX child restraint system shall incorporate means by which there is a clear indication that both of the ISOFIX attachments are completely latched with the corresponding ISOFIX lower anchorages. The indication means may be audible, tactile or visual or a combination of two or more. In case of visual indication it shall be detectable under all normal lighting conditions.

6.3.3. ISOFIX child restraint top tether strap specifications

6.3.3.1. Top tether connector

The top tether connector should be ISOFIX top tether hook as shown in Figure 0 (c), or similar devices that fit within the envelope given by Figure 0 (c).

6.3.3.2. ISOFIX Top tether strap features

The ISOFIX top tether strap shall be supported by webbing (or its equivalent), having a provision for adjustment and release of tension.

6.3.3.2.1. ISOFIX top tether strap length

ISOFIX child restraint top tether strap length shall be at least 2,000 mm.

6.3.3.2.2. No slack indicator

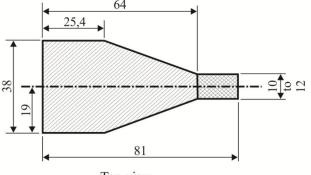
The ISOFIX top tether strap or the ISOFIX child seat shall be equipped with a device that will indicate that all slack has been removed from the strap. The device may be part of adjustment and tension relieving device.

6.3.3.2.3. Dimensions

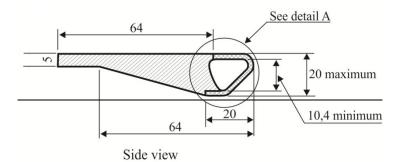
Engagement dimensions for ISOFIX top tether hooks are shown in Figure 0 (c).

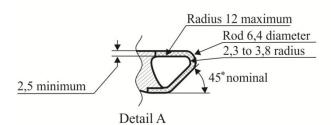
Figure 0 (c)

ISOFIX top tether connector (hook type) dimensions



Top view





Legend: Dimensions in millimetres

Surrounding structure (if present)

Area in which the tether strap hook interface profile must be wholly located.

6.3.4. Adjustment provisions

The ISOFIX attachments, or the ISOFIX child restraint system itself, shall be adjustable to accommodate the range of ISOFIX anchorage locations described in Regulation No. 14.

Paragraphs 6.4 to 6.5 (former), renumber as paragraphs, 6.3 to 6.4.:

6.4 **6.3**. Control of markings

6.4.1. 6.3.1. The Technical Service conducting the approval tests shall verify that the markings conform to the requirements of paragraph 4.

6.5 **6.4** Control of instructions on installation and the instructions for use

6.5.1 6.4.1 The Technical Service conducting the approval tests shall verify that the instructions on installation and the instructions for use conform to paragraph 15.

Delete paragraph 7.1.4.1.10.:

- 7.1.4.1.10. In the case of a child restraint making use of an ISOFIX anchorage system and anti-rotation device, if any, the dynamic test shall be carried out:
- 7.1.4.1.10.1. For ISOFIX CRS of size classes A and B:
- 7.1.4.1.10.1.1. With the anti-rotation device in use, and
- 7.1.4.1.10.1.2. Without the anti-rotation device in use. This requirement does not apply when a permanent and non adjustable support leg is used as an anti-rotation device.
- 7.1.4.1.10.2. For ISOFIX child restraint system of other size classes with the anti-rotation device in use.

Delete paragraphs 7.2.6 to 7.2.7.:

- 7.2.6. ISOFIX attachment specifications
 - "ISOFIX attachments" and latching indicators shall be capable of withstanding repeated operations and shall, before the dynamic test prescribed in paragraph 8.1.3., undergo a test comprising 2,000 \pm 5 opening and closing cycles under normal conditions of use.
- 7.2.7. ISOFIX attachments shall have a locking mechanism which complies with the requirements specified in (a) or (b) as follows:
 - (a) Release of the locking mechanism of the complete seat, shall require 2 consecutive actions, the first of which should be maintained while the second is carried out: or
 - (b) The ISOFIX attachment opening force shall be at least 50 N when tested as prescribed in paragraph 8.2.9. below.

Delete paragraph 8.1.3.7.9.:

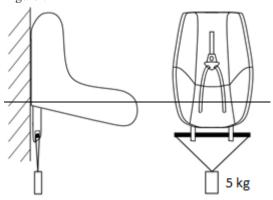
- 8.1.3.7.9. If the ISOFIX child restraint system shall use a top tether, one test shall be carried out with the smallest dummy with the shorter distance of the top tether (anchorage point G1). A second test shall be carried out with the heavier dummy with the longer distance of the top tether (anchorage point G2). Adjust the top tether to achieve a tension load of 50 ± 5 N.
- Paragraph 8.1.3.7.10 (former), renumber as paragraph 8.1.3.7.9.:
- 8.1.3.7.10. **8.1.3.7.9.** The test specified in paragraph 7.1.4.1.10.1.2. need only be carried out with the largest manikin for which the child restraint is designed.

Delete paragraph 8.2.9:

8.2.9. The complete seat, or the component fitted with ISOFIX attachments (e.g. ISOFIX base) if it has a release button, is attached rigidly to a test rig in such a way that ISOFIX connectors are vertically aligned as shown in Figure 7. A 6 mm diameter bar, 350 mm long, shall be attached to the ISOFIX connectors. A mass of 5 kg shall be attached to the extremities of the bar.

- 8.2.9.1. An opening force shall be applied to the release button or handle along a fixed axis running parallel to the initial direction of motion of the button/handle; the geometric centre applies to that part of the surface of the ISOFIX attachment to which the release pressure is to be applied.
- 8.2.9.2. The ISOFIX attachment opening force shall be applied, using a dynamometer or similar device in, the normal manner and direction as indicated in the Manufacturers user manual. The contact end shall be a polished metal hemisphere with radius 2.5 ± 0.1 mm for a release button or a polished metal hook with a radius of 25 mm.
- 8.2.9.3. If the design of the child restraint prevents the application of the procedure described in paragraphs 8.2.9.1. and 8.2.9.2., an alternative method may be applied with the agreement of the Technical Service carrying out the test.
- 8.2.9.4. The ISOFIX attachment opening force to be measured shall be that needed to disengage the first connector.
- 8.2.9.5. The test shall be carried out on a new seat, and repeated on a seat that has been subjected to the cycling procedure specified in paragraph 7.2.6.

Figure 7



Delete paragraph 15.11.2:

15.2.11. For an ISOFIX child restraint system, the following label shall be clearly visible at the point of sale without removing the packing:

Notice

- 1. This is an ISOFIX CHILD RESTRAINT SYSTEM. It is approved to Regulation No. 44, 04 series of amendments for general use in vehicles fitted with ISOFIX anchorages systems.
- 2. It will fit vehicles with positions approved as ISOFIX positions (as detailed in the vehicle handbook), depending on the category of the child seat and of the fixture.
- 3. The mass group and the ISOFIX size class for which this device is intended is:

Delete paragraph 15.3.18:

15.3.18. For an ISOFIX child restraint system, the instruction for use shall be given to read the car manufacturer's handbook.

Insert new paragraph 17.13 to 17.16:

- 17.13 As from the official date of entry into force of new series of amendments, no Contracting Party applying this Regulation shall refuse to grant approval under this Regulation as amended by this new series of amendment.
- 17.14. As from xx November 2016, 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 this new series of amendment.
- 17.15. Until xx November 2016 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 amended by the 04 series of amendments.
- 17.16. Contracting Parties applying this Regulation shall not refuse to grant extensions of approval to the 04 series of amendments of this Regulation.

Annex 6 - Appendix 3

Delete paragraph 2.3:

2.3. For child restraints using ISOFIX attachment, rearmost point H1 and H2.

Annex 21

Dynamic crash test installation

Delete paragraph 1.3:

1.3. ISOFIX attachment

For an ISOFIX child restraint system with adjustable position seat bight ISOFix anchorages. Attach the unladen ISOFIX child restraint system onto the seat bight anchorages H1 H2 in the appropriate test position. Allow the ISOFIX child restraint latch mechanisms to pull the unladen ISOFIX child restraint system towards the seat bight. Apply an additional force of 135 ± 15 N in a plane parallel to the test bench seat cushion surface in the direction of the seat bight to overcome frictional forces between the ISOFIX child restraint system and the seat cushion, assisting the self tensioning effects of the latch mechanism. The force shall be applied on or equally about the centerline of the ISOFIX child restraint and at a height not more than 100 mm above the test bench cushion surface. If needed, adjust the top tether to



V. Justification

- Phase 1 of Regulation 129 (dealing with integral Isofix CRS) entered into force on 9 July 2013. At that stage the intention was to finalise phase 2 (non-integral CRS) and phase 3 (belted CRS), and phase out R44 (no new approvals) once all phases had entered into force. (see also GRSP-52-17)
- 2. The recent change of plans, involving a new approach for phase 2 and leaving finalisation of phase 3 (and maybe even a phase 4) open-ended, allows the approval of new integral CRS with Isofix connections according to R44 for an undefined period.
- 3. ANEC/CI consider it undesirable that CRS manufacturers can still develop new products according to R44 for an undefined period, resulting in:
 - Two categories of products, offering two levels of protection, that can be introduced on the market (R44 no side impact required, FWF as of 9kg)
 - Confusion among consumers (mass based vs stature based)
 - Less incentive for manufacturers to develop products to the latest standard (R129).
- 4. Therefore ANEC/CI propose that **no new R44 approvals** be granted to Isofix integral CRS as of xx November 2016, and that transitional provisions be amended accordingly.