Proposal for draft amendment to Regulations 14, 16, 44 (ISOFIX)
transmitted by the expert from Germany

1. TRANS/WP29/GRSP/2001/14/Rev.2 of 8th November 2002

§ 2.31

amend to read: "A Child restraint fixture" means a fixture according to one out of the seven ISOFIX size classes……"

Justification:

The ISO/TC22/SC12 WG1 Resolution 124 dated 6-11-02 proposes to modify and to add the proposed CRF fixtures. It was especially decided to include a 3rd forward facing envelope in 13216-3 consisting of the present reduced-size envelope with the 395 mm dimension at the back replaced by 515 mm (see N 613/Attachment 1):

In addition it was decided to remove the recesses in the vehicle armrest area, see N 613.

The main reasons for this additional 3rd forward facing fixture are:

- the present CRFs have an inclined surface starting at 395 mm dimension to create space in vehicles for possible future headrest designs. In practice no clear requirement from the car manufacturers is available to which extent this free space is required

- ISO/TC22/SC12 WG1 especially requested car manufacturers to provide information on vehicle seating profiles including headrests to support the analysis of the CRF with vehicle seats and potential further modifications of the CRF in the headrest area.

- The proposed 3rd forward facing fixture represents the dimensions of an actual ISOFIX seat which conforms to the requirements of 18 vehicle manufacturers in 130 different new vehicles for which special approvals are available. This clearly shows that new vehicles do not need the space as required by the existing CRF fixtures.

- The existing CRF fixtures with an inclination angle starting at 395 mm height create a special safety risk for children sitting in forward facing restraints designed to this requirement. The available room for the head excursion is reduced from 542 mm to 513 mm for the P3 dummy (which represents a 3 year old child). This reduction in space for head excursion will lead to more head injuries if the inclination angle stays at 395 mm.

§ 5.2.4.1

The top tether length has been revised to 2000 mm. It is proposed to reduce this to max. 1500mm.

Justification:

- In countries that have used top tethers for many years and have a vehicle fleet that is in general based on larger vehicles than in Europe 1200-1500 mm is the normal maximum effective length. This applies in the USA and Australia where extension tethers are made available, if required.

- In TRANS/WP.29/GRSP/2001/16 Rev. 2 page 18 of 8-11-02 the test set-up for tests with top tether requires a top tether length of max. 1380 mm to the most rearward top tether connector point G2. As this is intended to be the standard test requirement a total length for the top tether of 1500mm should be sufficient because even on the test bench 120 mm are in excess of the real requirement. If the need arises to reach top tether points at a longer distance in specifically large vehicles, this could be easily handled by an extension belt to be provided as an option by the CRS manufacturer.

2. TRANS/WP29/GRSP/2001/15/Rev.2 of 8th November 2002

Proposal for Draft 0X Series of Amendments to Regulation No. 16

Page 2, §1.

1.

amend to read: "….for installation in vehicles of category M1 and other vehicles equipped with ISOFIX anchorages."

Justification:
No restriction to vehicle categories because ISOFIX is also an option for busses etc.

Page 6, Annex 17 – Appendix 2
§ 2.5
amend to read: “Push towards ISOFIX anchorage system, on the centre between the ISOFIX anchorages……..”
Justification:
The additional lateral facing child restraint system envelope cannot be properly engaged by applying force on the front of the fixture due to the asymmetric design.

Page 6, Annex 17 – Appendix 2
§4
Amendment:
The additional 3rd forward facing fixture needs to be added.
Justification see TRANS/WP29/GRSP2001/14/Rev. 2 § 2.3.1 proposal (page 1 ff)

3. TRANS/WP29/GRSP/2001/16/Rev.2 of 8th November 2002
Proposal for Draft Supplement to Regulation No. 44

§ 2.1.1.6
amend to include additional forward facing fixture with the break point dimension on the rear surface increased from 395 mm to 515 mm as agreed by ISO/TC22/SC12/WG1 at the November 2002 meeting and as confirmed in Doc N620 Resolution 124.
Justification:
The ISO/TC22/SC12 WG1 came to Resolution 124 in paper N620 dated 6-11-02 to modify and to add the proposed CRF/VSF fixtures. It was especially decided to include a 3rd forward facing envelope in 13216-3 consisting of the present reduced-size envelope with the 395 mm dimension at the back replaced by 515 mm (see N 613):

In addition it was decided to remove the recesses in the vehicle armrest area, see N 613.

Page 7, Groups / Categories Table
Delete.
Justification :
This table includes mistakes and design restrictions in putting together groups and categories for different types of approvals for CRS. These mistakes are for example:

- Gr. 2 and 3 CRS can neither get an ISOFIX nor a vehicle-specific approval, as indicated in the table because ISOFIX is restricted to group 0 and 1 only.
- Forward facing group 2 seats (integral) cannot be approved as universal, semi-universal or restricted. It is only possible to get a vehicle-specific approval. This mistake also applies to the other integral seats in group 1 and 3. To avoid further misunderstandings we propose to delete the table because the specific requirements for approvals are clearly defined in the existing standard.

§ 6.3.3.2.1
Amend to read:
ISOFIX Child restraint top tether strap length shall be at least 1500 mm.
Justification:
see amendment to TRANS/WP29/GRSP/2001/Rev. 2 of 8th November,
§ 5.2.4.1 on page 2.

Figures 2 and 3
The G2 point should be repositioned to a distance of 1200mm to the Cr point instead of 1450 mm.
Justification:

1. The top tether length has no significant influence on the dynamic test results.

2. Most test houses would have the required space available without major changes to the test rigs.

§ 7.1.4.1.10
Proposals B and C
Proposal C is not acceptable for forward facing CRS.
Justification:
The available head excursion space in the European vehicle fleet differs drastically from the US vehicle fleet and is definitively much lower. The average available head excursion in modern European vehicles based on the measurements of 43 new vehicles is that we have in average only 370 mm available, based from H-Point to the rearmost position of the front seat. The minimum starts at 229 mm and the maximum is at 558 mm.

Proposal C would allow a head excursion at the same level as the existing ECE regulation of 550 mm and would not even improve the safety level with top tether combination with ISOFIX. This cannot be the intention for future standards that should improve child safety.
The requirement for the second test in Proposal C without top tether attached would allow to approve forward facing child restraints that exceed the existing ECE levels for standard forward facing child restraints by far. From accident statistics it is well known that head injuries in frontal impact still have the biggest %-rate of all injuries.
It is a matter of fact that until this new standard becomes effective there will be up to 20 – 25 million vehicles on the road equipped only with 2 lower ISOFIX anchorages and without top tether. It is certain that as soon as ISOFIX CRS approved to Proposal C are introduced in the market these will also be used without top tether (despite legal implications) in vehicles without top tether. It is the responsibility of the standard authority to prevent a very clear risk for consumers when introducing standard ISOFIX CRS. This risk can only be eliminated by a very stringent approval procedure according to Proposal B.

Proposal B ensures that the existing safety level for forward facing restraints with 550 mm head excursion is guaranteed as well for future ISOFIX seats in

case that no top tether is available. In addition to that Proposal B ensures a higher safety level compared with the existing ECE 03 version and thus improving the safety level for children in future, which is required taking into consideration the available space for head excursion in the European vehicle fleet.

Proposal C can only be used for rearward facing systems because the head excursion for rearward facing systems does not apply.