Submitted by the expert from Japan

Informal document **GRSP-51-15**
(51st GRSP, 21–25 May 2012,
agenda item 14)

Proposal for amendment to ECE/TRANS/WP.29/GRSP/2012/5
(Regulation No.44 Child Restraint Systems)

Note: The modifications to ECE/TRANS/WP.29/2012/53 are marked in bold and strikethrough characters.

I. Proposal

Insert a new paragraph 7.2.7., to read:

"7.2.7. ISOFIX attachment shall have a locking mechanism which complies with the requirements a or b as follows:

(a) Release of the locking mechanism requires 2 consecutive actions, the first of which should be maintained while the second is carried out; or

(b) A complete ISOFIX attachment mechanism, which has not been previously subjected to a load, shall be used for a no-load opening test. The force needed to open the ISOFIX attachment when it is not under load shall be in the range of at least 40 N in the tests prescribed in paragraph 8.2.9. below."

Insert a new Paragraph 7.2.7.1. to read:

"7.2.7.1. With regard to the CRSs where their main body can be separated from the ISOFIX base and the ISOFIX locking mechanism cannot be released unless the main body is removed from the ISOFIX base, they shall be deemed to be in compliance with the requirement (a) in Paragraph 7.2.7."

Insert a new paragraph 7.2.8., to read:

"**7.2.8. In the case of a CRS where its main body can be separated from the ISOFIX base, the ISOFIX base-main body locking system shall meet the following requirement:**

(a) Release of the locking mechanism requires 2 consecutive actions, the first of which should be maintained while the second is carried out; or

(b) An ISOFIX base-main body attachment mechanism, which has not been previously subjected to a load, shall be used for a no-load opening test. The force needed to open the ISOFIX base-main body attachment when it is not under load shall be in the range of at least 40 N in the tests prescribed in paragraph 8.2.9. below."

Insert new paragraphs 8.2.9. to 8.2.9.5., to read:

"8.2.9. ISOFIX attachment opening test under zero load:

8.2.9.1. A load shall be applied at a speed of 400 ± 20 mm/min 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. The ISOFIX attachment shall be secured against a rigid ISOFIX anchor during the application of the opening force.

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. The ISOFIX attachment opening force shall be measured and any failure noted.

8.2.9.4. An ISOFIX attachment assembly which has not previously been subjected to a load shall be mounted and positioned under a "no load" condition.

8.2.9.5. The ISOFIX attachment opening force shall be measured."

II. Comments

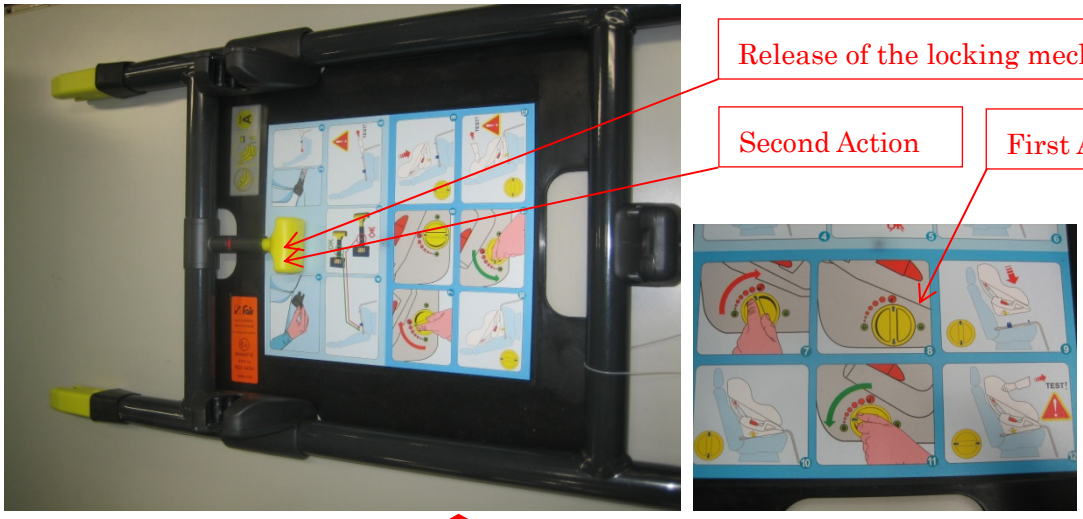
If the ISOFIX attachment opening force is measured as proposed in ECE/TRANS/WP.29/GRSP/2012/5, measurement may become impossible for some types of CRSs in actual type-approval testing, as described in Justification 2 below. While we agree with the proposal to require the attachment opening force to be at least 40 N, we believe that rethinking of the force measuring method is necessary. It should at least be noted that, if the load-application speed/direction is specified as in Paragraph 8.2.9.1., or if the geometry of the contact end or hook is specified as in Paragraph 8.2.9.2., measurement may become impossible in actual type-approval testing.

III. Justification

1. Among the ISOFIX-compatible CRSs, there are a number of types where the main body can be separated from the ISOFIX base. In some of these types of CRSs, the locking of the ISOFIX base and anchor points cannot be released unless the main body is removed from the ISOFIX base first.

   In the case of this type of CRS, it will be extremely difficult for a child to release the lock of the ISOFIX base even if the two consecutive actions or the attachment opening force of at least 40 N is not required to release the lock. It is therefore deemed that this type of CRS meets the requirement equivalent to Paragraph 7.2.7.

   However, as the possibility of users or their siblings releasing the lock of the main body cannot be eliminated, we believe that separate provisions on how much force is needed to release the main body locking mechanism and how to operate such lock/release mechanism should be established for the purpose of preventing improper operations at the main body and the ISOFIX base.



Base of the type of CRS where, once the main body is fixed on the base, the ISOFIX lock cannot be released unless the main body is removed from the base

2. The geometry of the lever/hook for releasing the ISOFIX locking mechanism or of the ISOFIX base and their operational procedures vary among CRSs.

   In some ISOFIX-compatible CRSs, the ISOFIX attachment opening force cannot be measured according to the provision of Paragraph 8.2.9.2. Therefore, the provision should be amended to allow a part that hinders the measurement to be removed or partially cut as long as such removal or cutting does not affect the ISOFIX attachment opening force.

   Furthermore, we believe that detailed requirements on the hook geometry should not be provided and instead it should be allowed to use a hook with which the ISOFIX attachment opening force can be measured when the dynamometer or similar device is operated as indicated in the user's manual.

With the provision of Paragraph 8.2.9.2., measurement in operation as indicated in the user's manual may become difficult in some products. In this case, use of a hook of the geometry that enables such measurement should be allowed.

A part of the product that comes in contact with the dynamometer or hook should be removed or partially cut so that the attachment opening force can be measured.