



ISOFIX TERM OF REFERENCE

Alternative third point ISOFIX
anchorage.

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- The Chairman of the GRSP informal group on child restraints has requested EEVC WG18 to perform an analysis on the possible locations for an alternative third ISOFIX point for use with the existing two 6 mm diameter bars anchorages.
- This anchorage point will allow a rigid fitting of the CRS to the heel kick seat structure, to achieve approval of Universal forward and rearward facing CRS with integral harnesses.

Alternative third point ISOFIX anchorage.

Objectives:

- Generate basic knowledge on child safety regarding the use of a 3rd ISOFIX point with respect top tether or support leg.
- Provide information regarding:
 - Car envelope where to place the 3rd ISOFIX anchorage point.
 - The location of the 3rd ISOFIX anchorage point in test rig defined by GRSP informal group on CRS.
 - Level of forces supported by the 3rd ISOFIX point in sled tests.

Alternative third point ISOFIX anchorage.

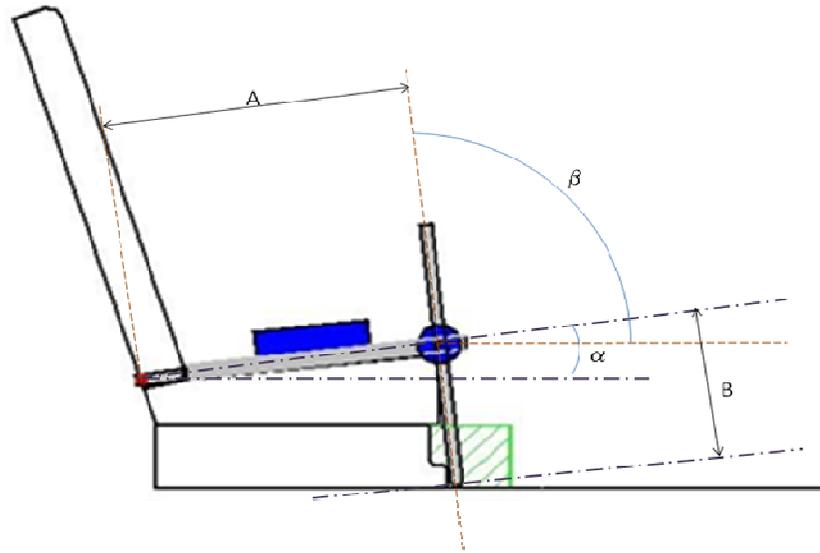
- **Activities:**

- Collect vehicle seat geometries
- Perform frontal and rear impact sled tests with G0+ RF CRS and G 1 (FF & RF) CRS, with or without top tether, support leg and 3rd support 6 mm bar.
- Dummy to be used: higher Q dummy for the group.

- **Deliverable:**

- Report on the alternative third anchorage point for the ISOFIX anchorage system.

Alternative third point ISOFIX anchorage.



Measurements done at VTI and INSIA

12 vehicles measured

BMW 5 Series

CITROEN C2

CITROEN C3 Pluriel

FIAT 500

MAZDA 5

OPEL Astra

■ PEUGEOT 207

■ PEUGEOT 307

■ RENAULT Laguna

■ RENAULT Megane

■ SAAB 93

■ TOYOTA Avensis



Alternative third point ISOFIX anchorage.

WG18 has to advise SC about benefits on the use of a 3rd ISOFIX anchorage point.

To achieve this, WG18 will perform sled tests, frontal and rear impact, with CRS having or not having the 3rd point support.

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Dynamic testing:

16 frontal and rear impact sled tests. Number of configurations.

G0+ RF support leg rear impact (comp)

G0+ RF 3rd point rear impact (comp/loads) (2 for 3rd point envelope)

G0+ RF 3rd point frontal impact (comp/loads) (2 for 3rd point envelope)

G0+ RF support leg frontal impact (comp)

G 1 RF support leg rear impact (comp)

G 1 RF 3rd point rear impact (comp/forces) (2 for 3rd point envelope)

G 1 RF 3rd point frontal impact (comp/forces) (2 for 3rd point envelope)

G 1 RF support leg frontal impact (comp)

G 1 FF top tether frontal impact (comp)

G 1 FF support leg frontal impact (comp)

G 1 FF 3rd point frontal impact (comp/forces) (2 for 3rd point envelope)

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Dynamic testing:

Materials for testing.

- Modified R44 bench incorporating 3rd ISOFIX fixation point with force measurement capabilities
- Three models of CRS
 - 6 G0+ RF (2 support leg, 4 with 3rd ISOFIX)
 - 6 G 1 RF (2 support leg, 4 with 3rd ISOFIX)
 - 4 G 1 FF (1 support leg, 1 top tether, 2 with 3rd ISOFIX)
- Instrumented Dummies:
 - Q 1.5
 - Q 3

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Need: collaboration with CRS manufacturers

on one given model with support leg:

G0+: 2 serial CRS and 4 prototypes with third ISOfix pt

G1 RWD FC: idem

G1 FWD FC:

1 serial CRS with support leg, and 1 prototype

1 serial CRS with top tether, and 1 prototype

Dummy to be used for testing: higher Q dummy for the group.

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- Collaboration between CRS manufacturer and WG12/18 done in the past for the validation of Q dummies
- Share results with each CRS manufacturers and results are presented without reference to the brand
- Time schedule is very tight to have results usable by the GRSP ad-hoc group