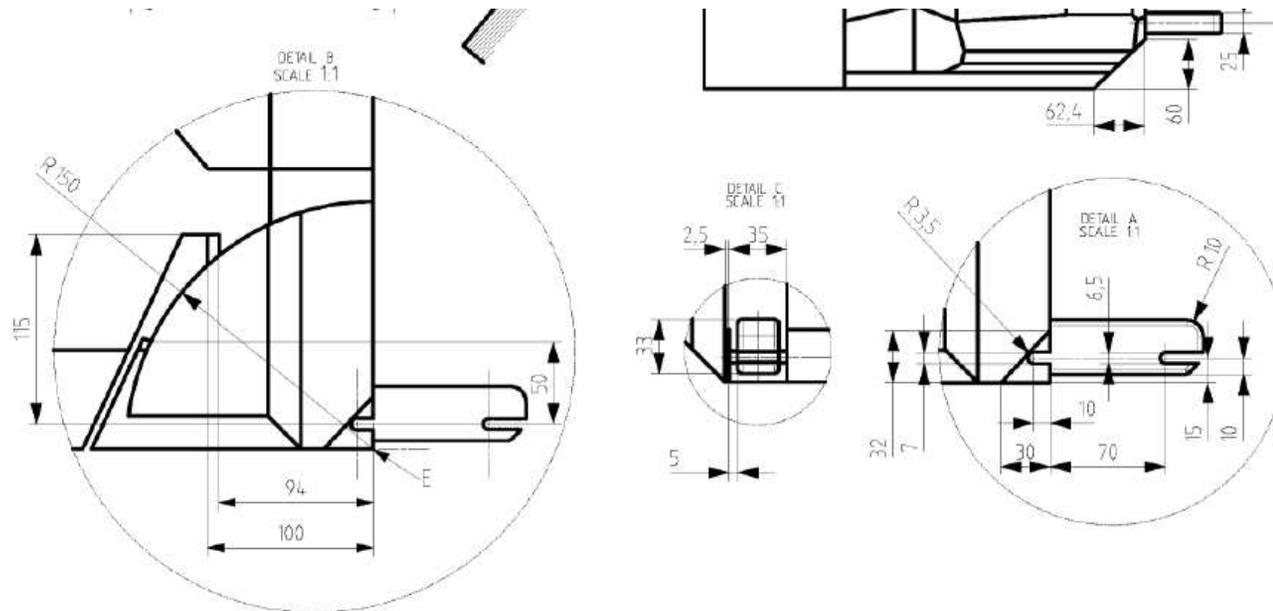


Check of the last CAD data of the booster gabarit F4-440mm provided by the ISO CRS group (P Clayson, 2/03/2016)

[ISO-TC22-SC36-WG2 N1131 N1131 ISO 13216-3 rev including R2X .pdf](#)

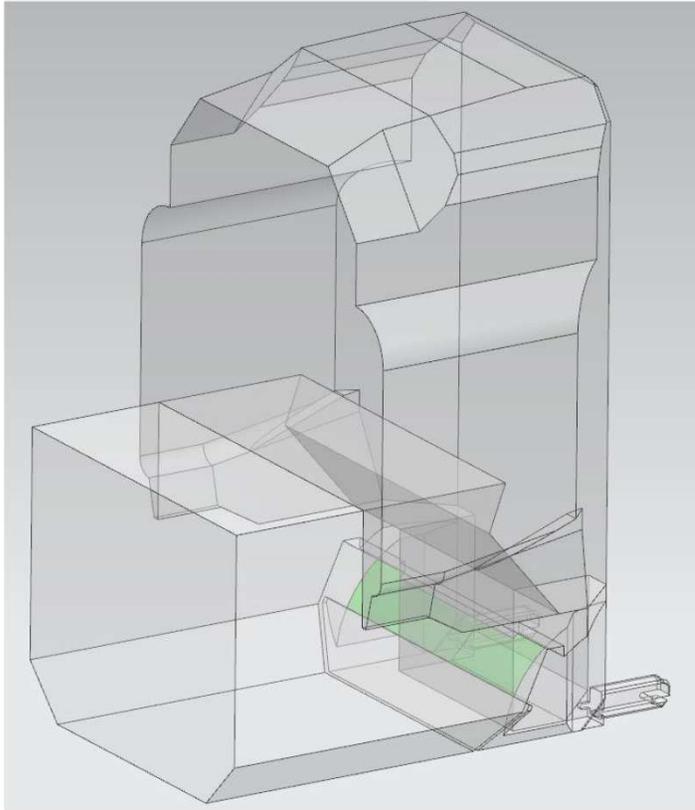


Key

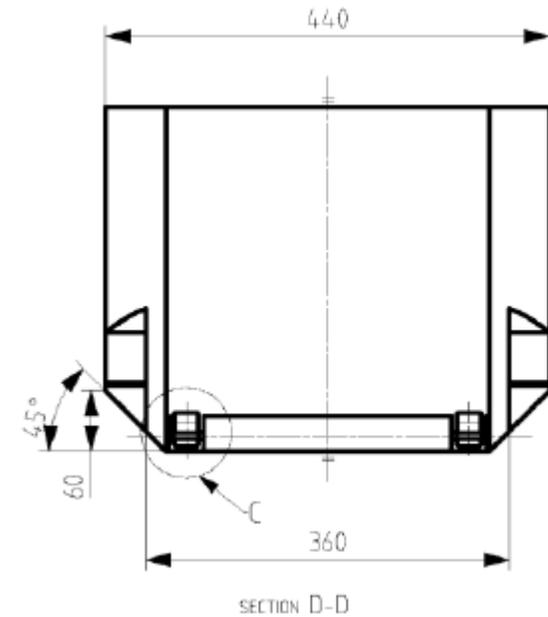
E Reference axle of rotation of the backrest (90° to 110°) and reference line for retraction/stowing of ISOFIX

Figure 10 — Envelope dimensions for booster seat, reduced width 440 mm — ISO/F4

Booster seat ISO/F4



Booster ISO/F6



Or B-Family names	CRS classification, <u>booster system</u> CRS
ISO/F5 booster seat, full width	Booster seat having a height of 775 mm and a width of 520 mm
ISO/F4 booster seat, reduced width	Booster seat having a height of 775 mm and a width of 440 mm
ISO/F6 booster cushion	Booster cushion having a width of 440 mm

Compatibility of the ISOFIX gabarits including F4 with the vehicle environment:

Minimum Seat Width (2nd Row, 3 Seats) UN Only requirements

Seat Belt Anchorages (each seating position)

$$\rightarrow 2 \times 350 + 240 \rightarrow 940 \text{ mm}$$

ISOFIX Lower Anchorages (2 mandatory)

$$\rightarrow 2 \times 350 + 305 \rightarrow 1005 \text{ mm}$$

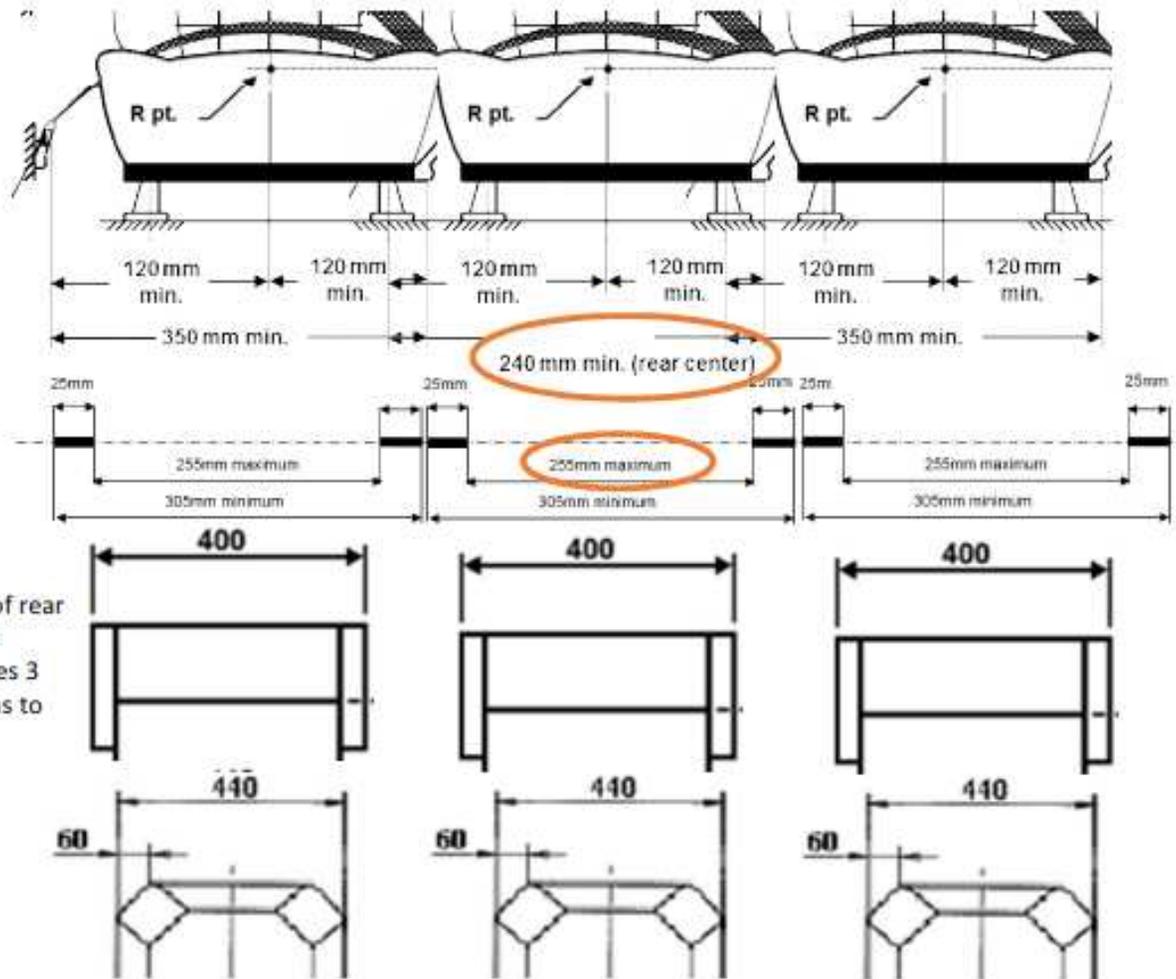
Universal Gabarit Position (not mandatory)

$$\rightarrow 3 \times 400 \rightarrow 1200 \text{ mm}$$

This is the size of rear bench when EU directive requires 3 seating positions to be declared

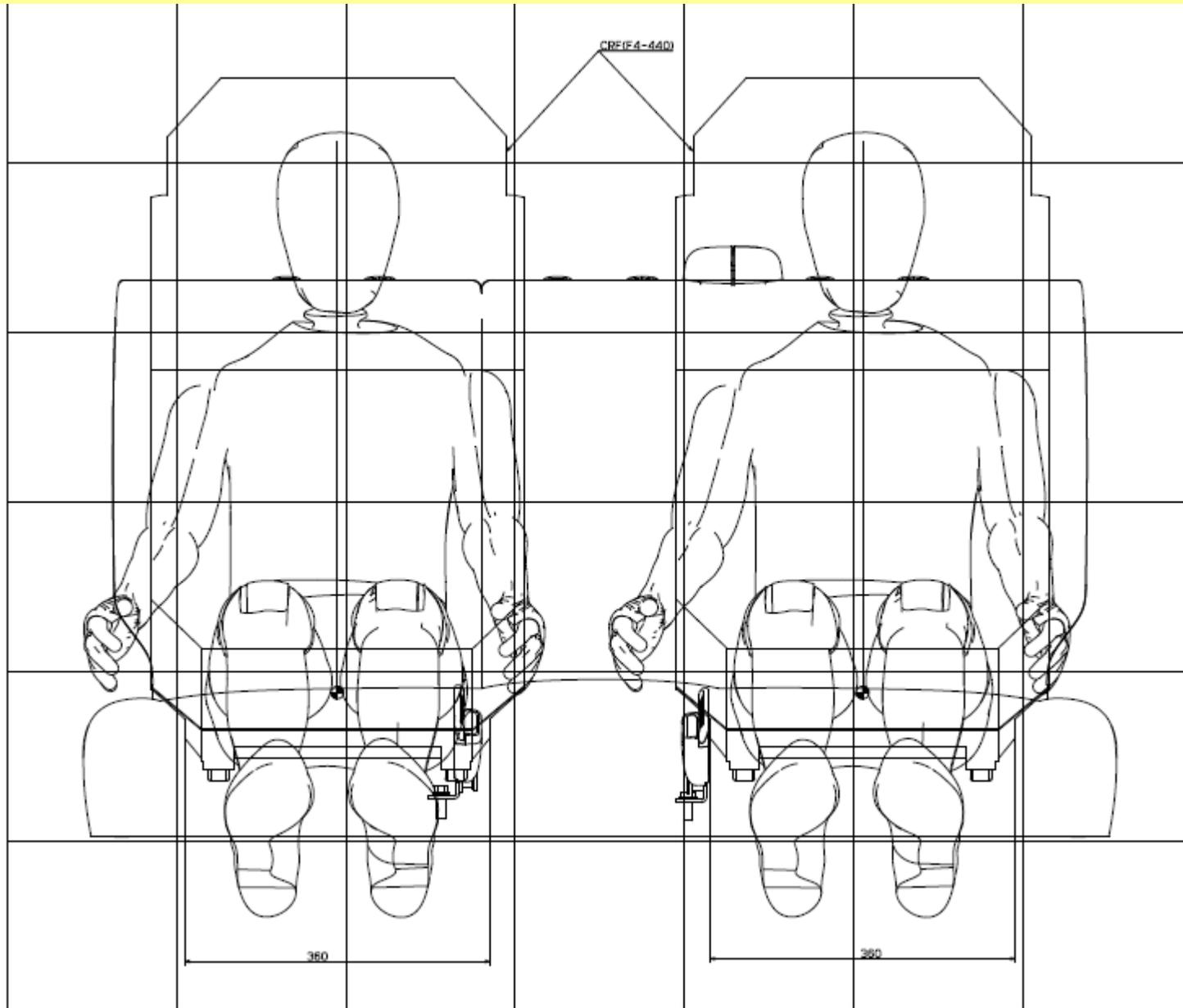
ISOFIX Position (2 mandatory)

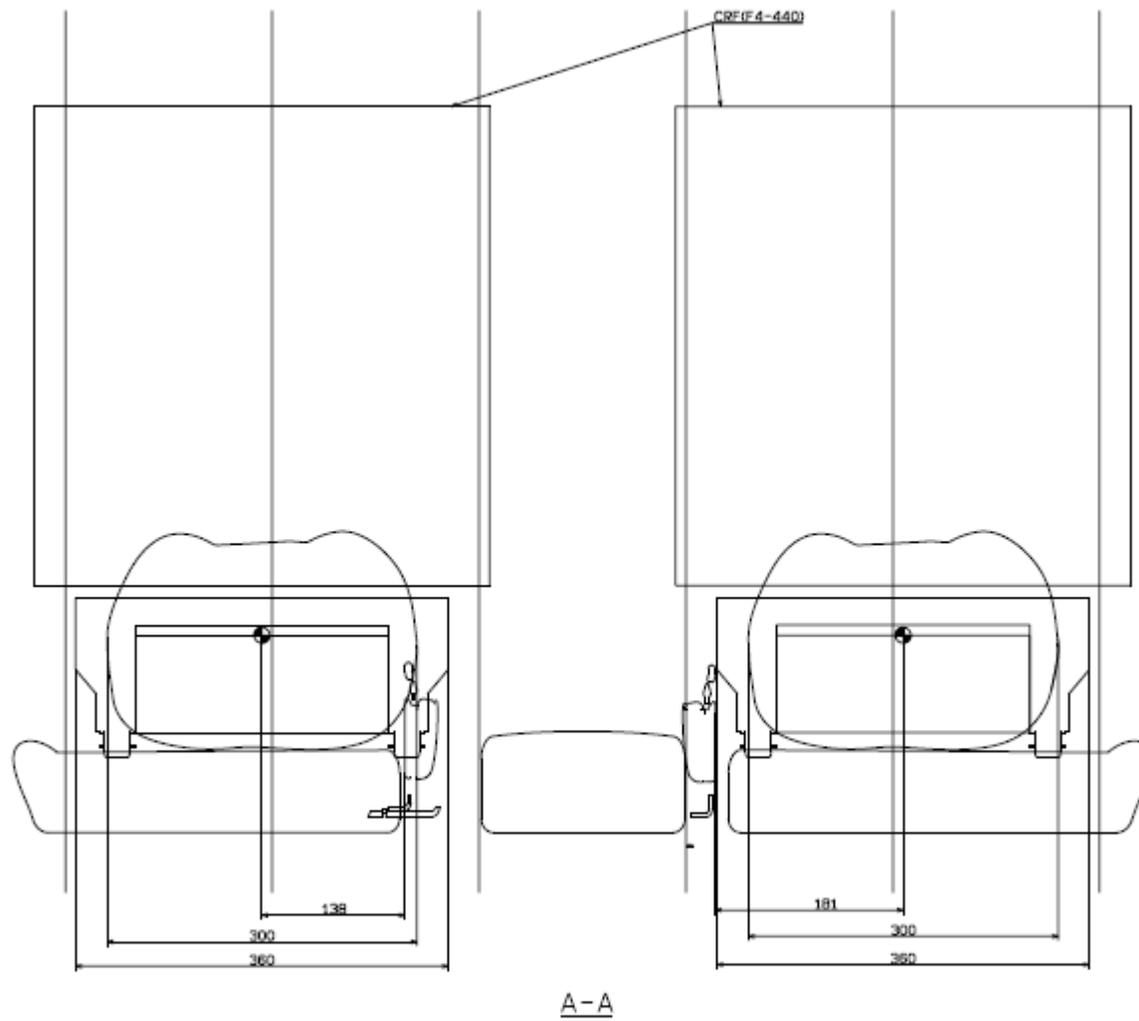
$$\rightarrow 3 \times 440 \rightarrow 1320 \text{ mm}$$

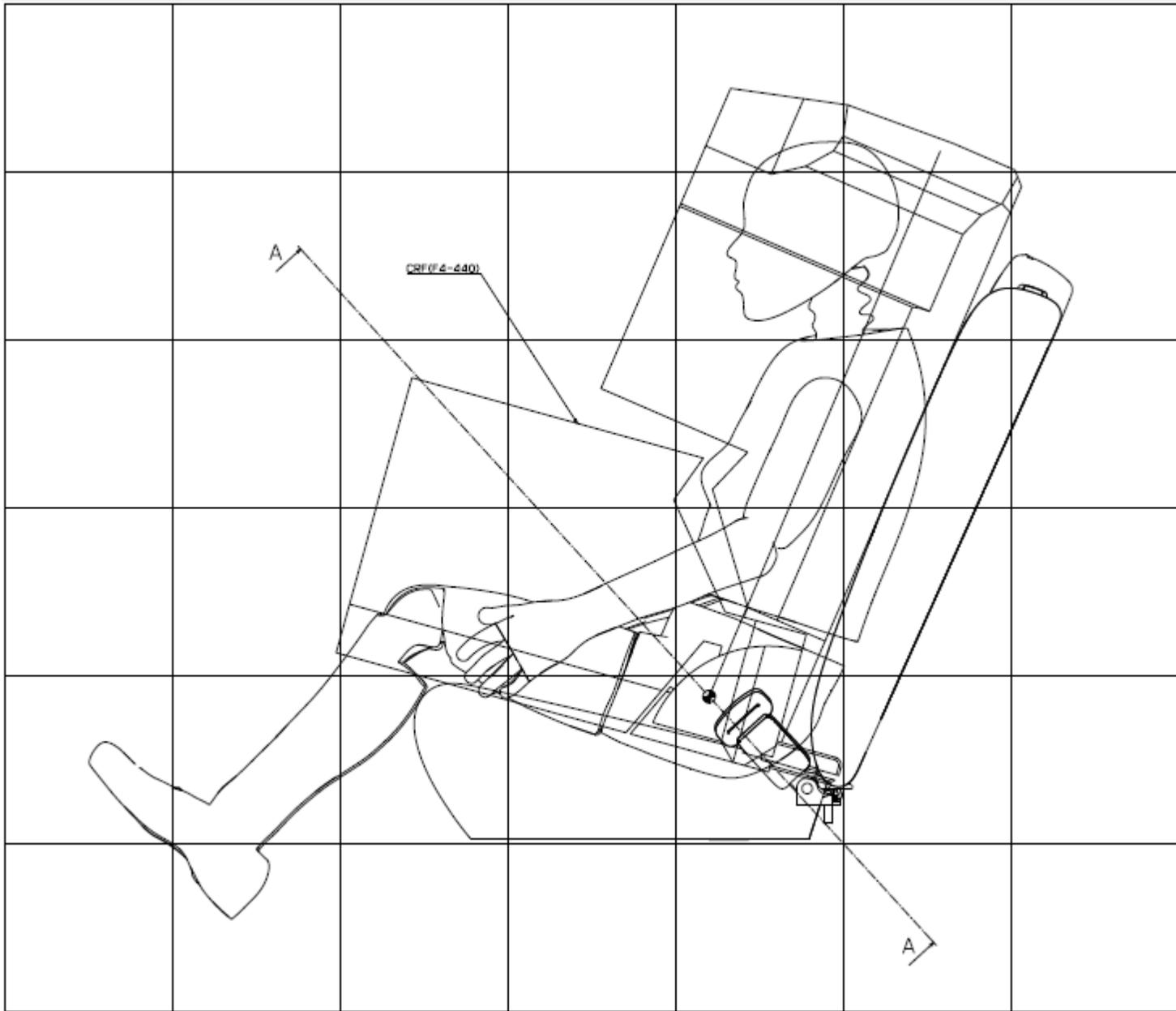


Updated with newest F4-440 gabarit : 3 slides

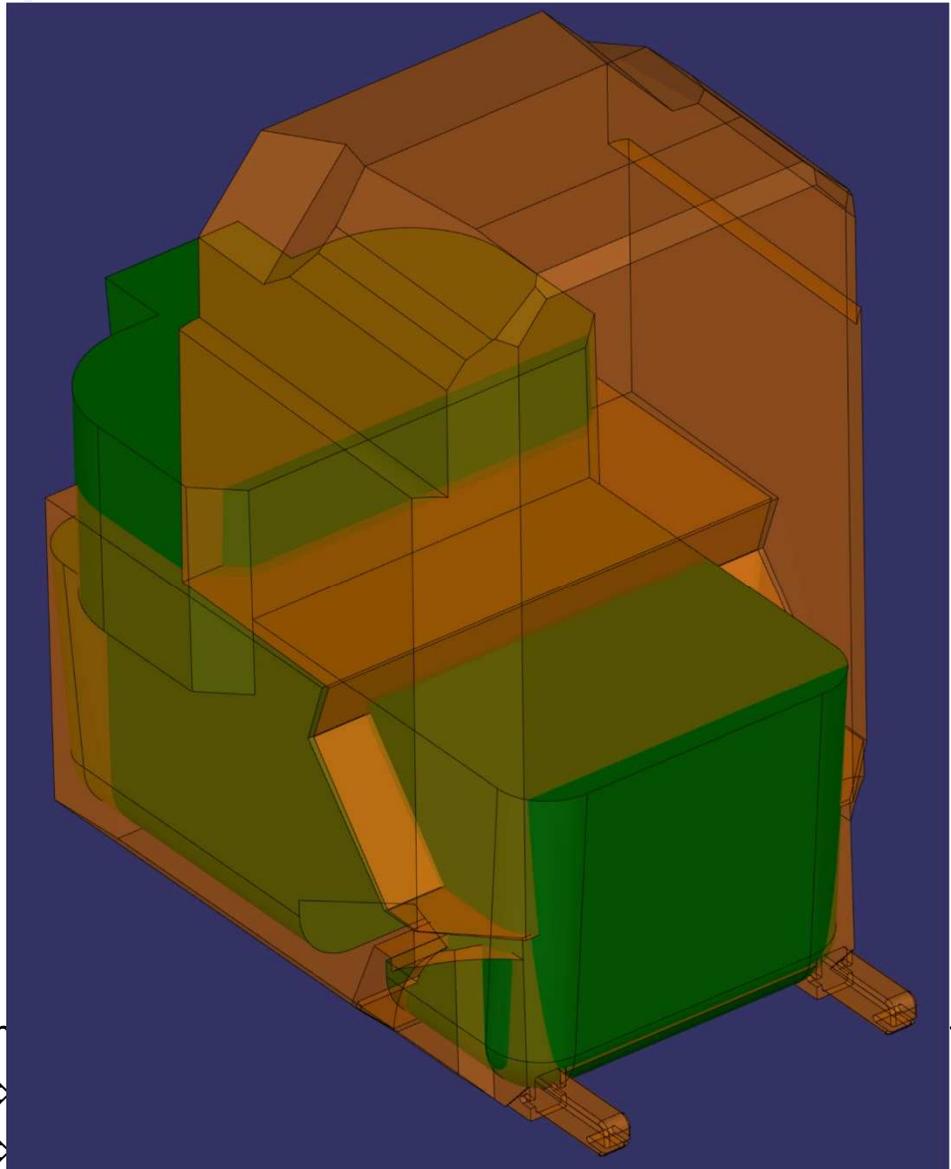
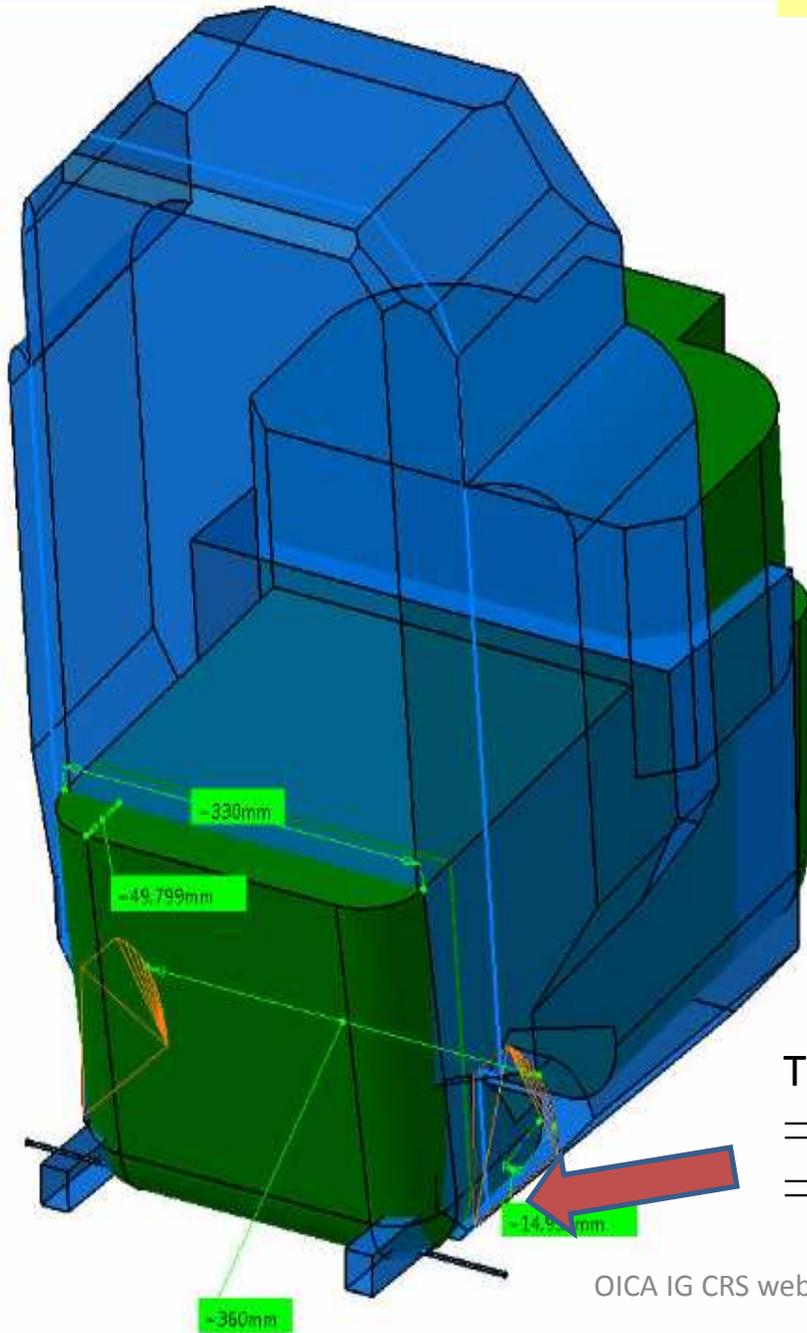
AF5% dummy's height and hip width were within the newest F4-440.







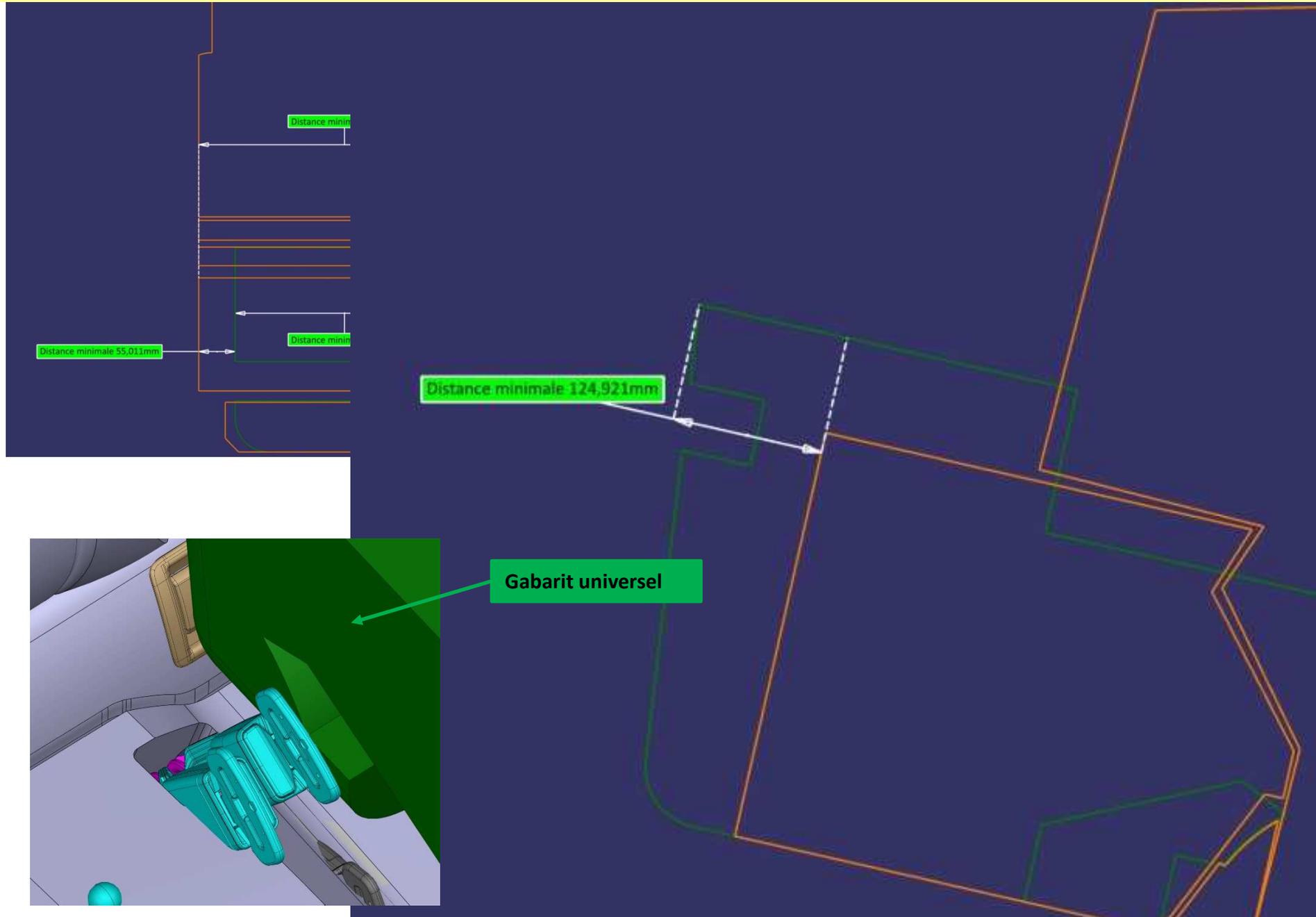
Updated with newest F4-440 gabarit



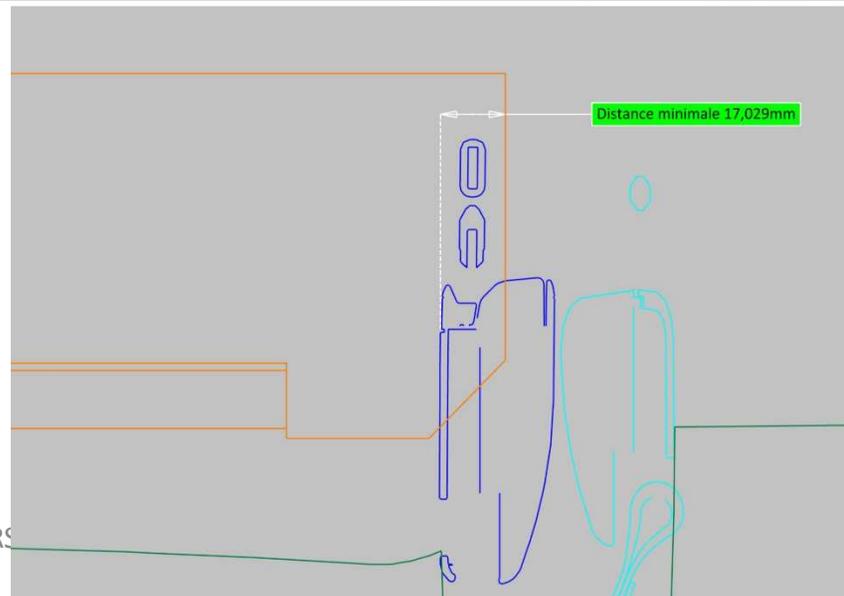
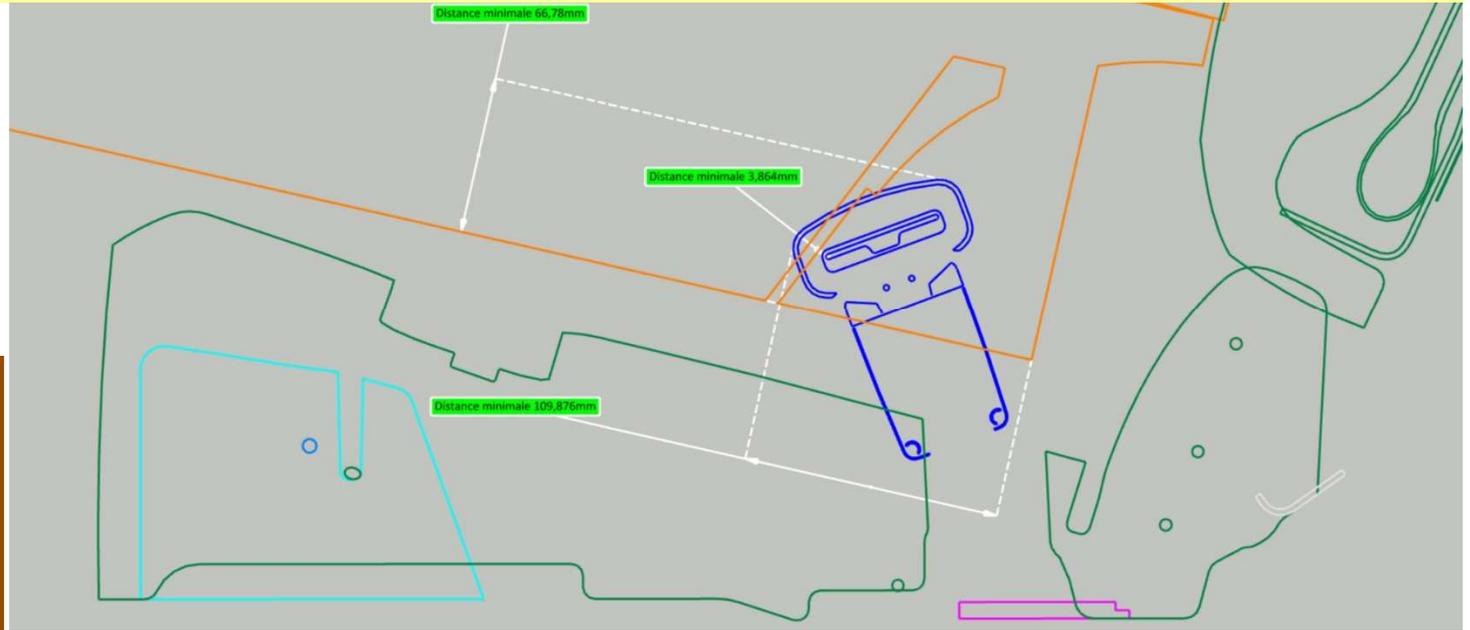
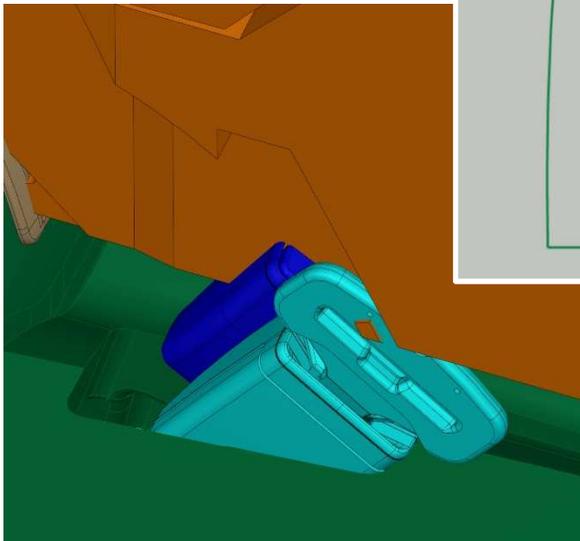
Th
=>
=>

ft

The buckle is OK with the R16 universal gabarit

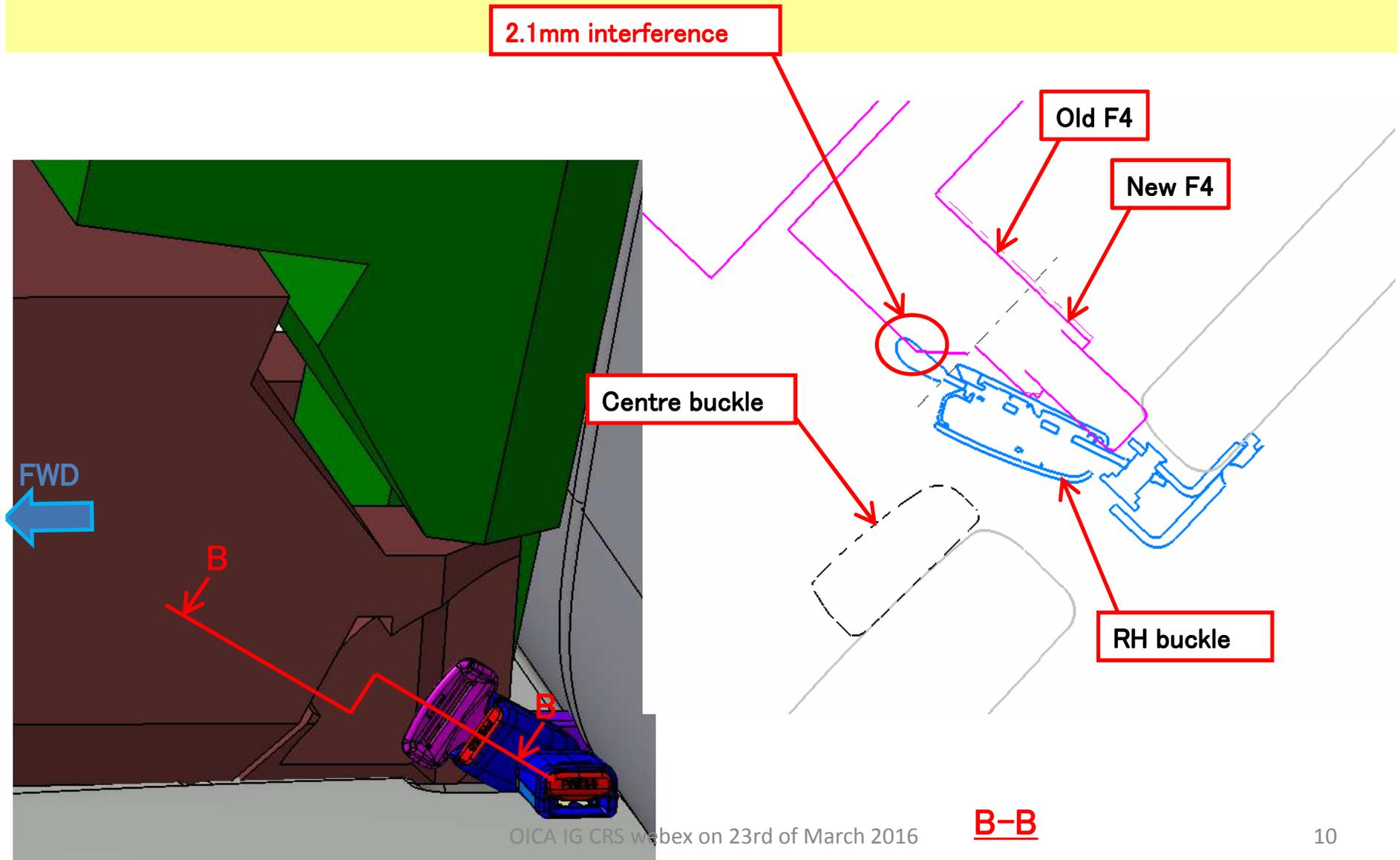


If isofix links attached, interference of 17mm of the buklet with the gabarit width

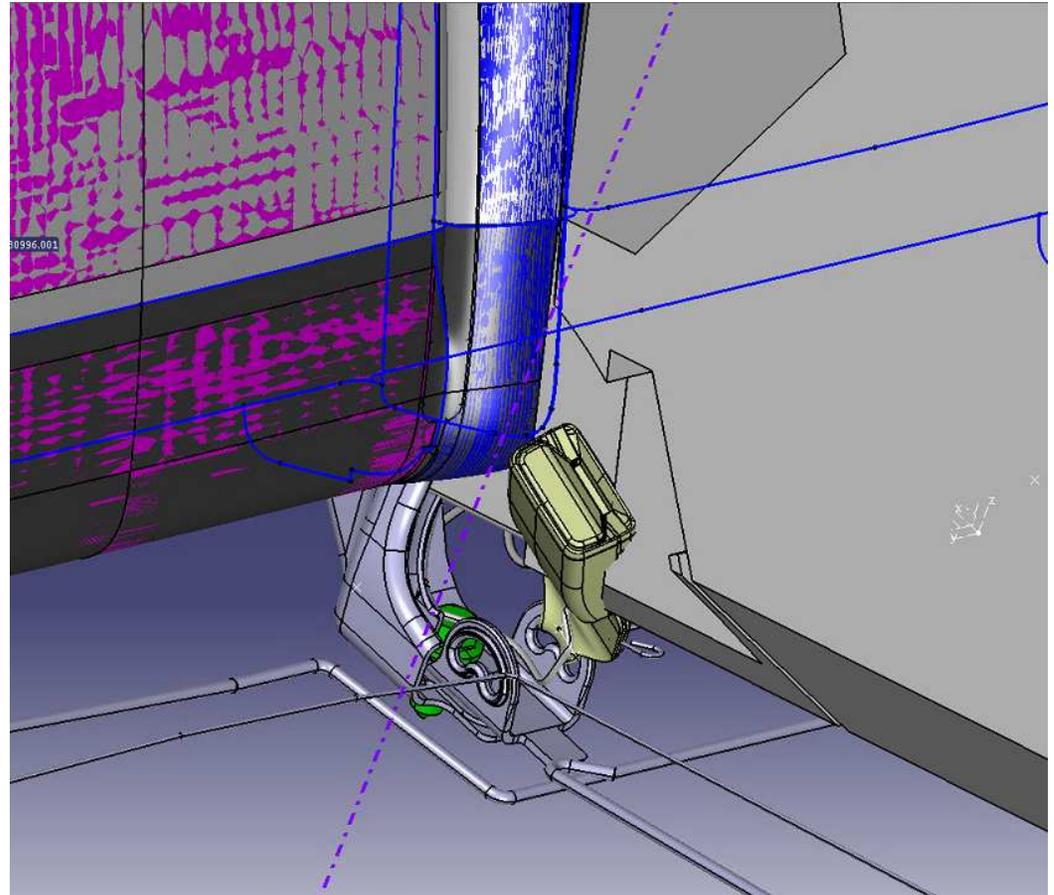
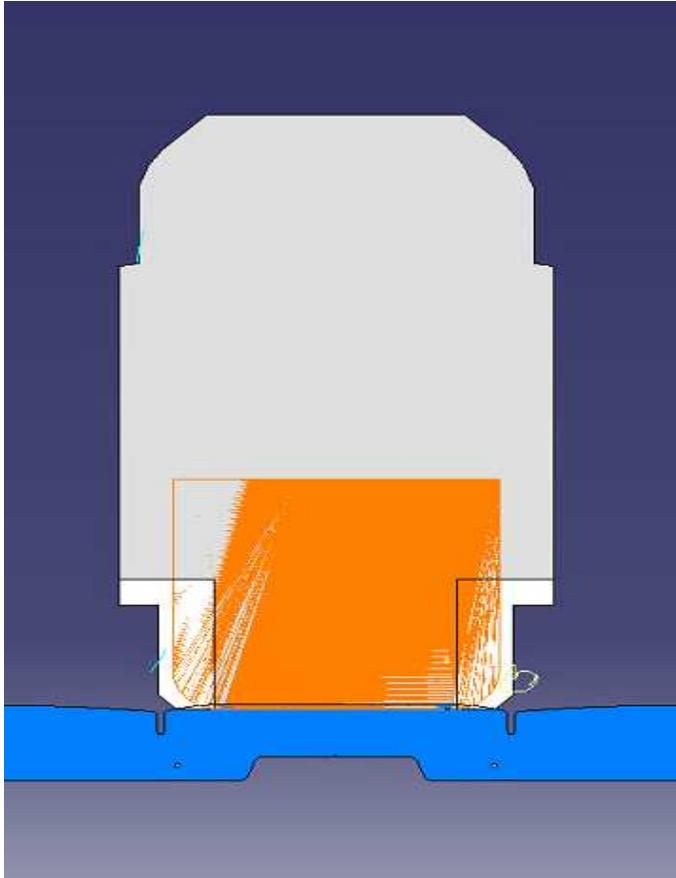


Another case:

- if rigid vertical buckle, the gabarit will « sit » on the buckle => Nok
- Has the « twin buckle » for the centre position enough space if pushed by the blue buckle:
 - yes if flexible link, no if rigid link.

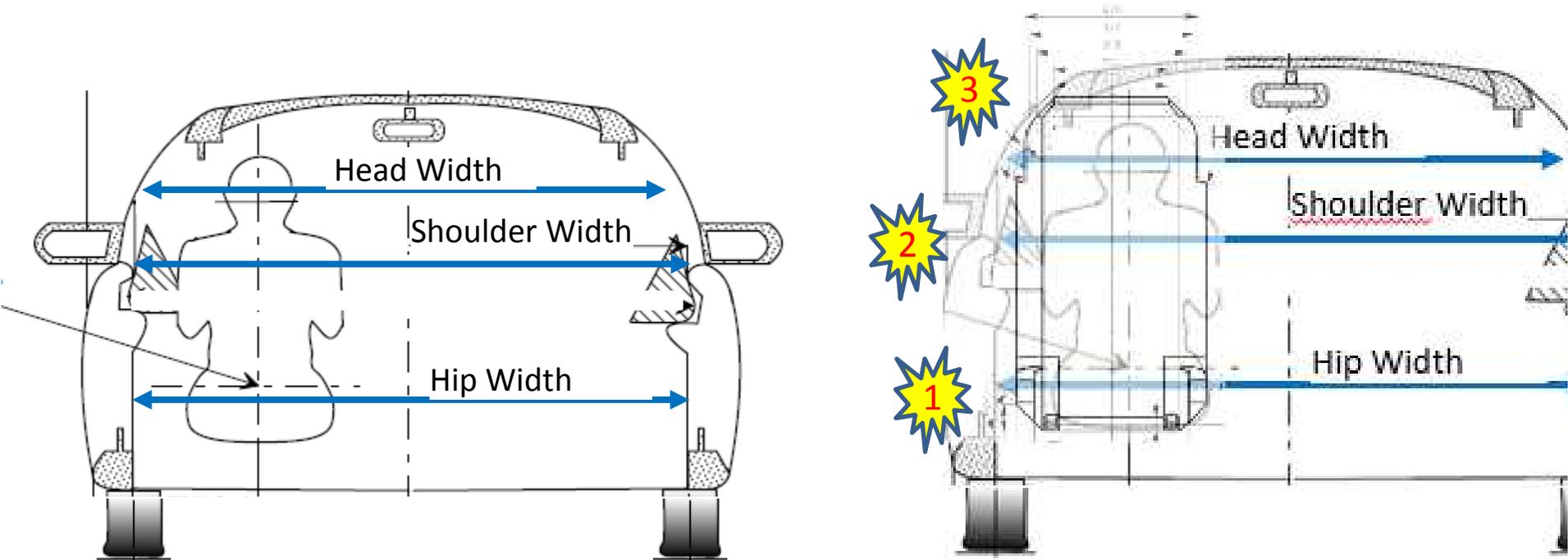


A 3rd case: Buckle area : Nok with F4 gabarit



Compatibility between a seating position for an adult & an isize revised position

Insure width compatibility at 3 heights: hip, shoulder & head

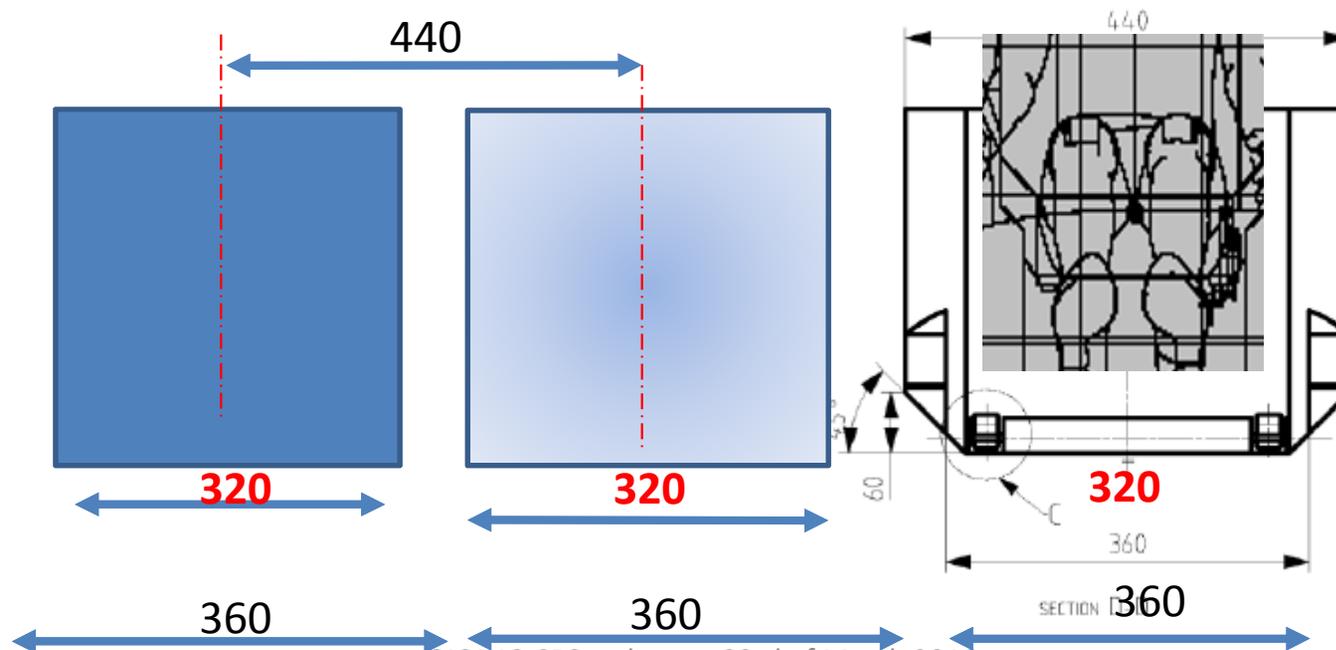


Bench Width synthesis at « hip height »

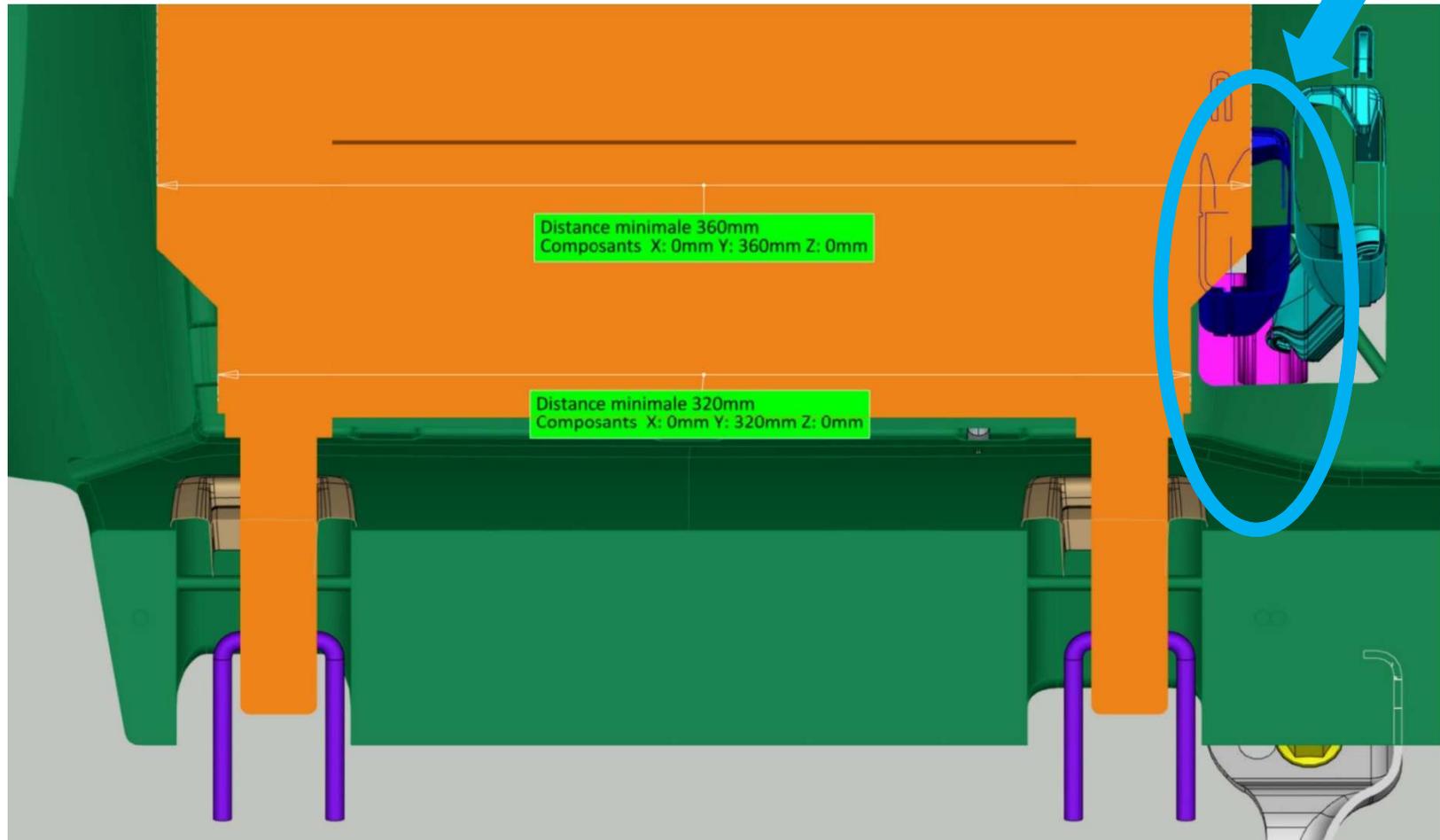


Reference (mm)	Hip /Buckling area	Thighs area
Seating position Eu= 5th female	320	
50th male	350	
Anchorage effective width	350 lateral;240 <i>central</i>	
Universal gabarit R16	330	400
Booster gabarit	360	440

- ⇒ A revised i-size position requires a **larger space than a universal place: ok**
- ⇒ Simultaneous 2 i-size positions = 440 between centre-lines



Interference of the booster gabarit with the buckle when Isofix links are attached



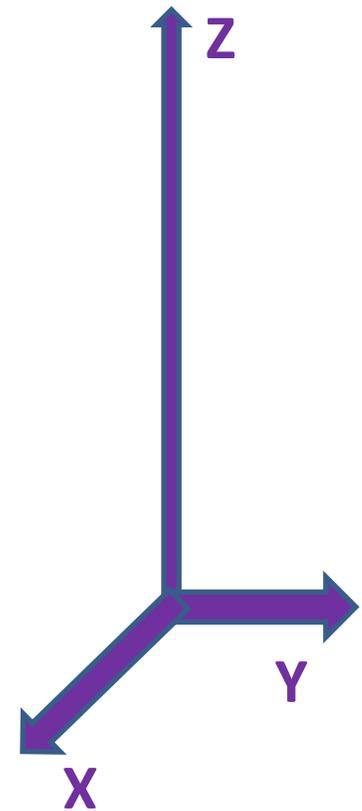
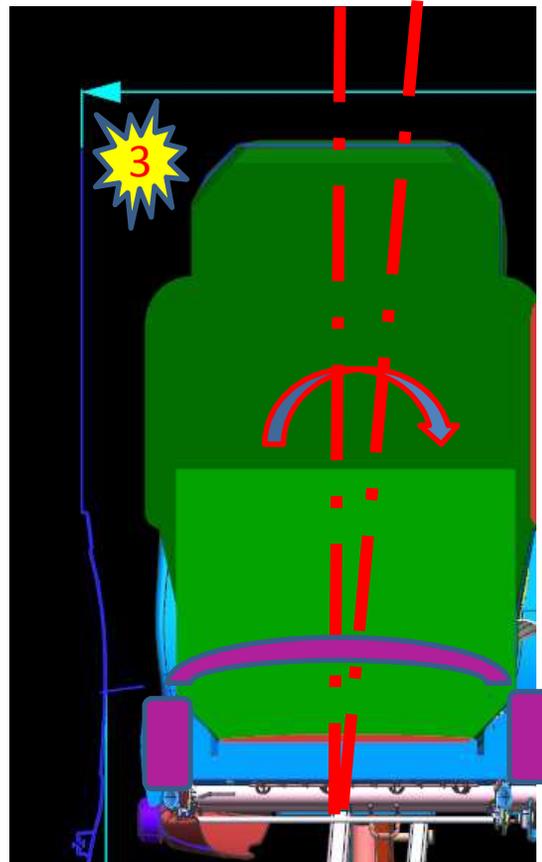
Isofix links = rigid

=> no tolerance possible in Y direction or rotation around X axis

=> risk to ban a good isize position if « booster seats only with isofix » because of head interference

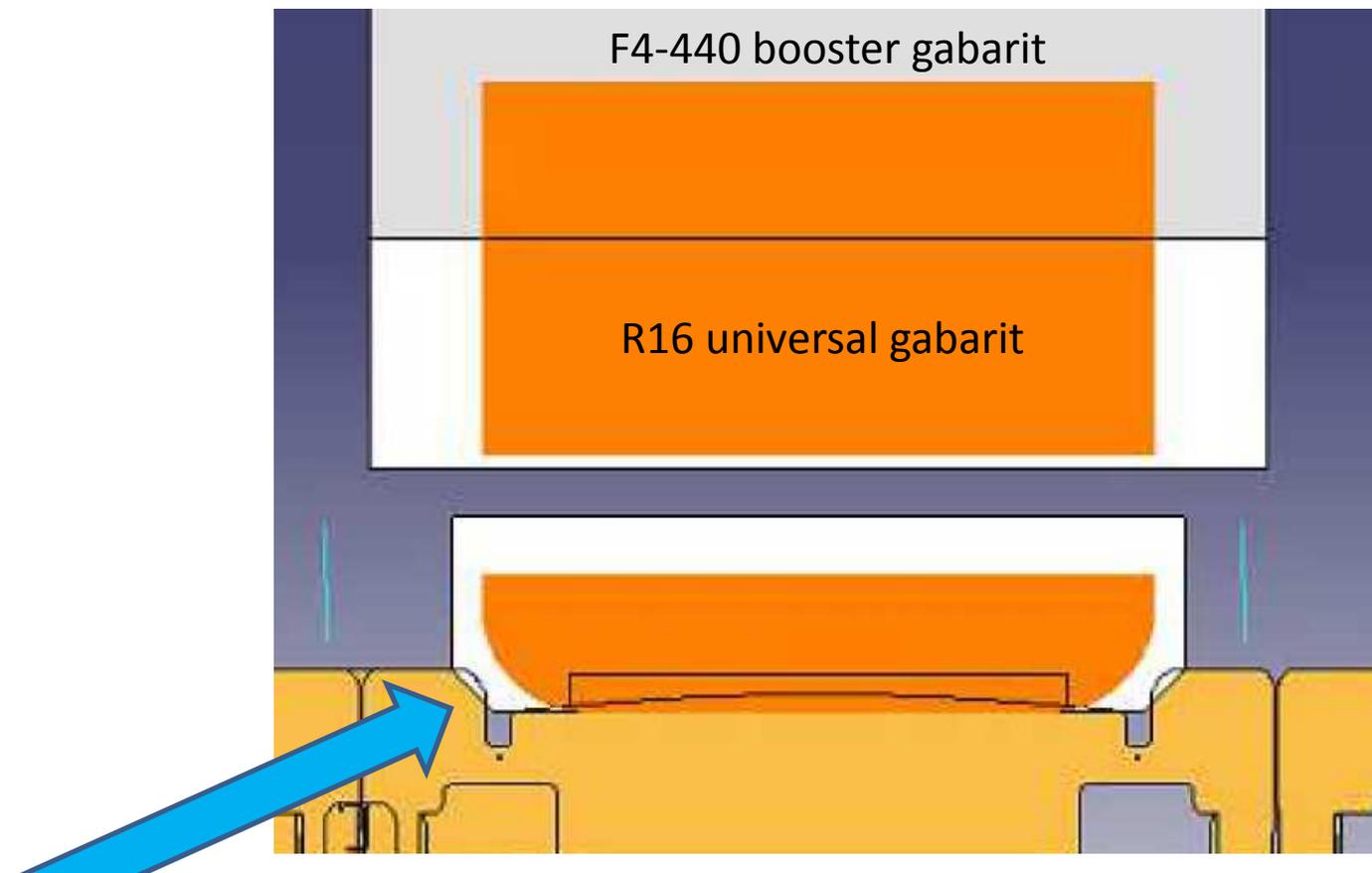
OICA recommendation:

keep the possibility to use i-size boosters with AND without isofix



2nd modification proposal

- Make the bottom more ergonomic, in order to better install the gabarit (copy the real CRSs bottoms)



Conclusion for Discussion

1) If only Isofix boosters for an i-size position, the risk is to **loose universality** (only few i-size positions possible in smaller cars)

⇒ Buckling area modification is mandatory

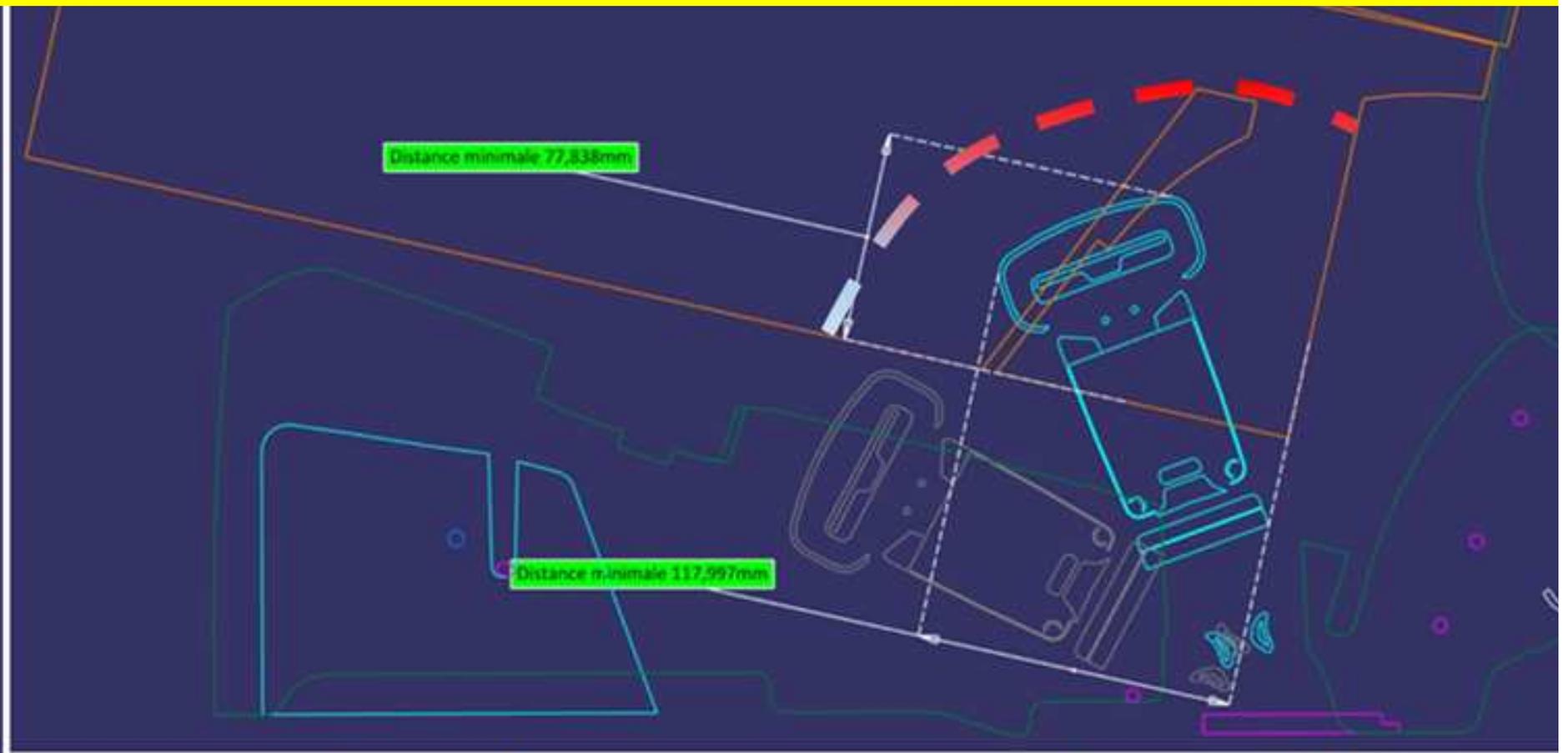
2) If boosters with stowable Isofix for the revised i-size position, then more possibilities to have **i-size positions in the cars fleet.**

⇒ Gabarit F4-440 acceptable

⇒ Warning Label on the Booster = i-size boosters without Isofix anchorages attached

Annex

A Proposal to amend the buckling area: red dotted circle to allow ergonomic handling of the buck

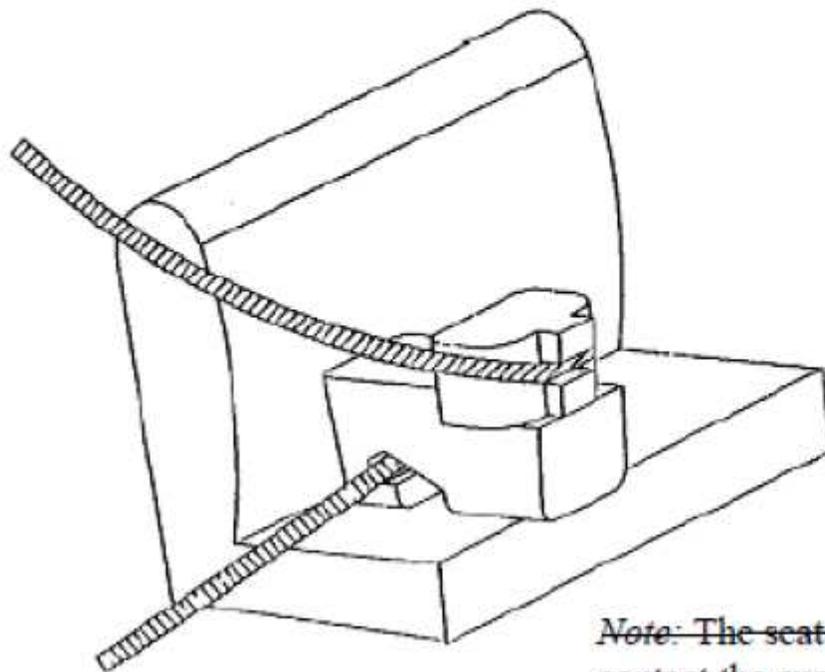


Distance minimale 77,838mm

Distance minimale 117,997mm

R16 universal gabarit – copy the buckling area

Figure 2
Installation of fixture onto vehicle seat
(see paragraph 2.6.1.)



Note: The seat belt webbing shall contact the curved edge on both sides of the fixture

Figure 3
Check for compatibility
(see paragraphs 2.6.1. and 3.2)

