

5th centile female Belt Routing with NPACS bench



Summary

1. Starting from UTAC study to define a reference belt routing using 5th female dummy
2. Test of TRL bench with its 2 upper positions
3. Modify upper anchorages
4. Check with Astra H and Golf 6
5. Conclusion



1. Initial study from UTAC

- Superposition of 10 belt routings



TRL Bench

- TRL's Child Seat Rating, (TCSR) from July 2009 defined anchorages location for belt installation with reference to Cr point:

Positive x = Fore (towards the front of the sled)

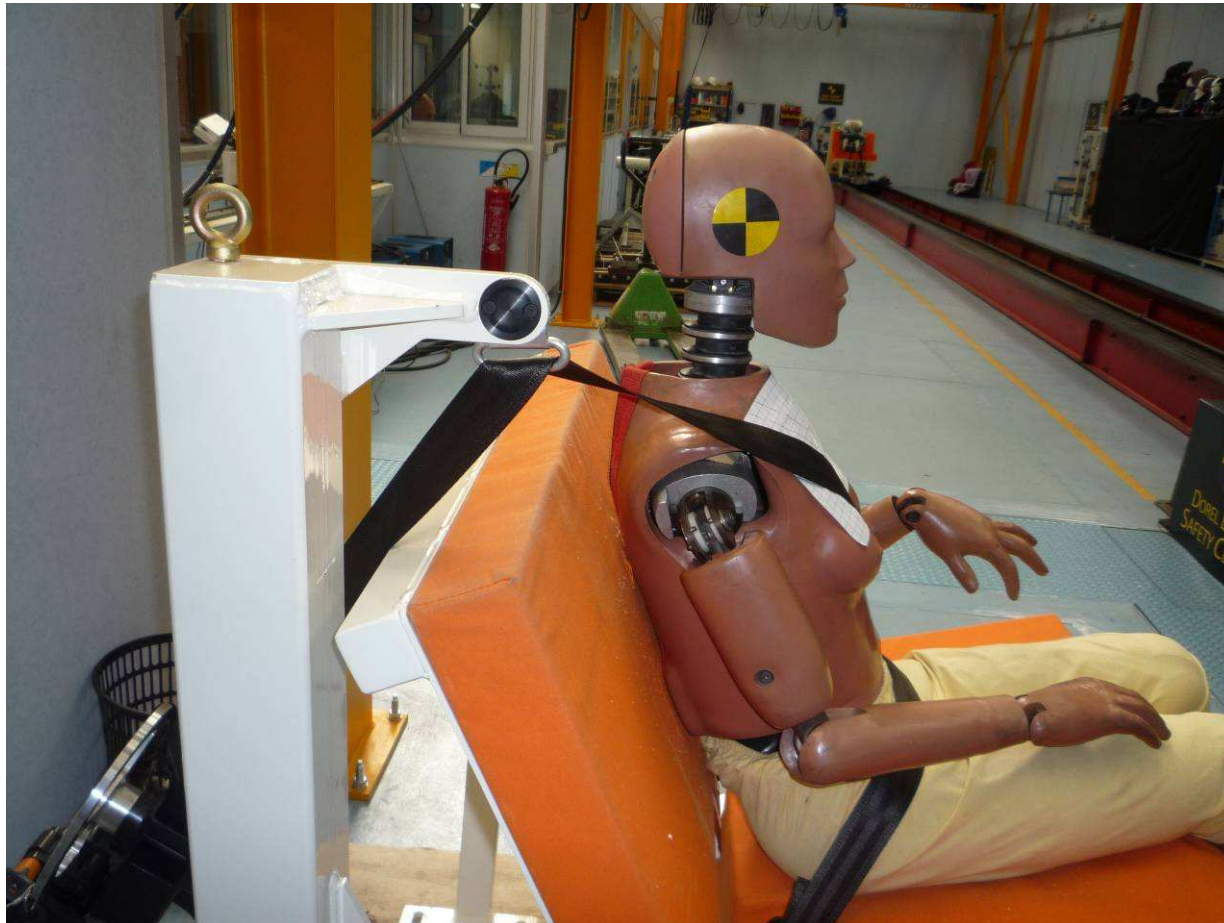
Positive y = Left to right (from the occupant's point of view)

Positive z = Downwards

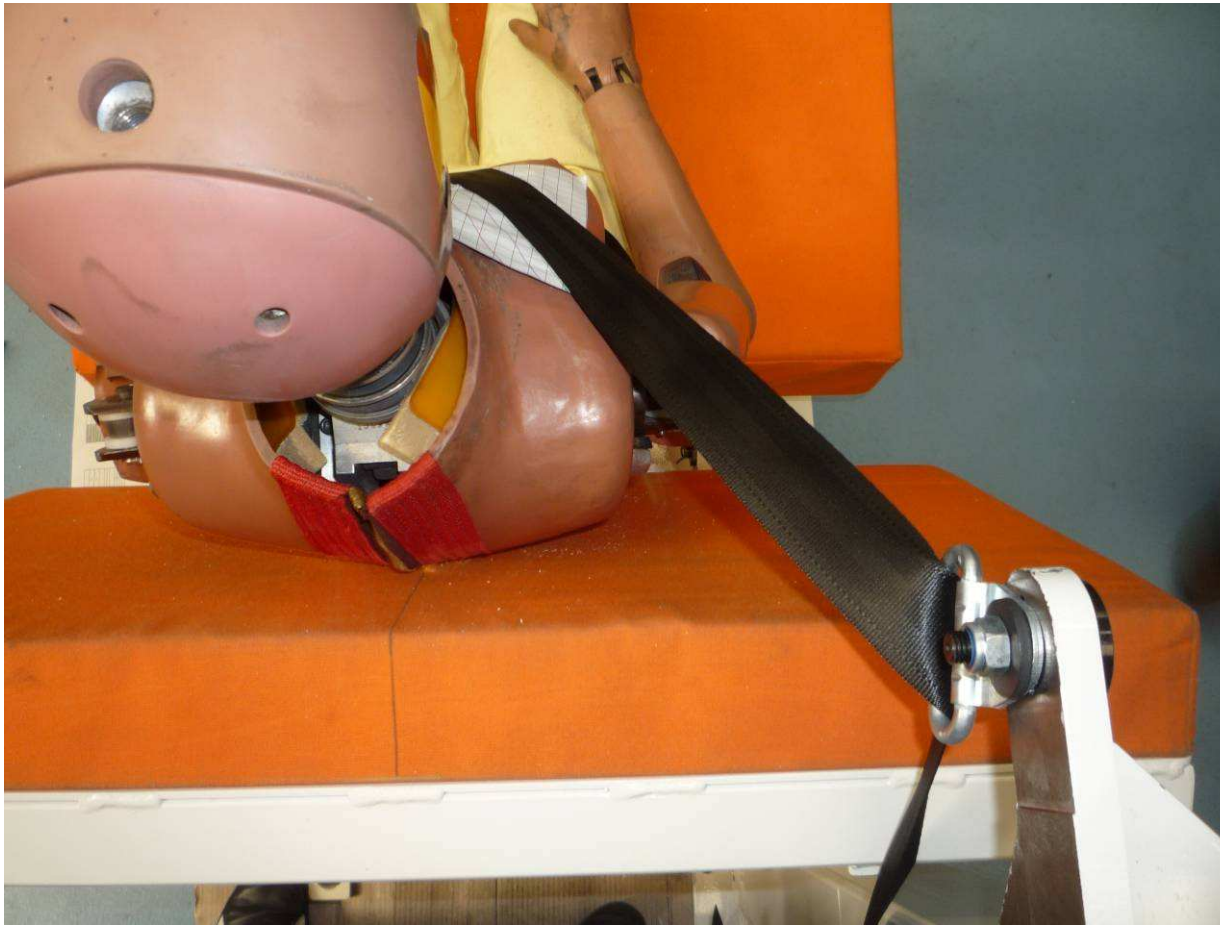
Anchorage	Upper (Mid Position)			Upper (Fwd Position)			Lower inner (buckle)			Lower outer		
	x	y	z	x	y	z	x	y	z	x	y	z
Distance (mm)	-240	-250	-630	-130	-250	-630	-29	200	59	10	-200	14.5



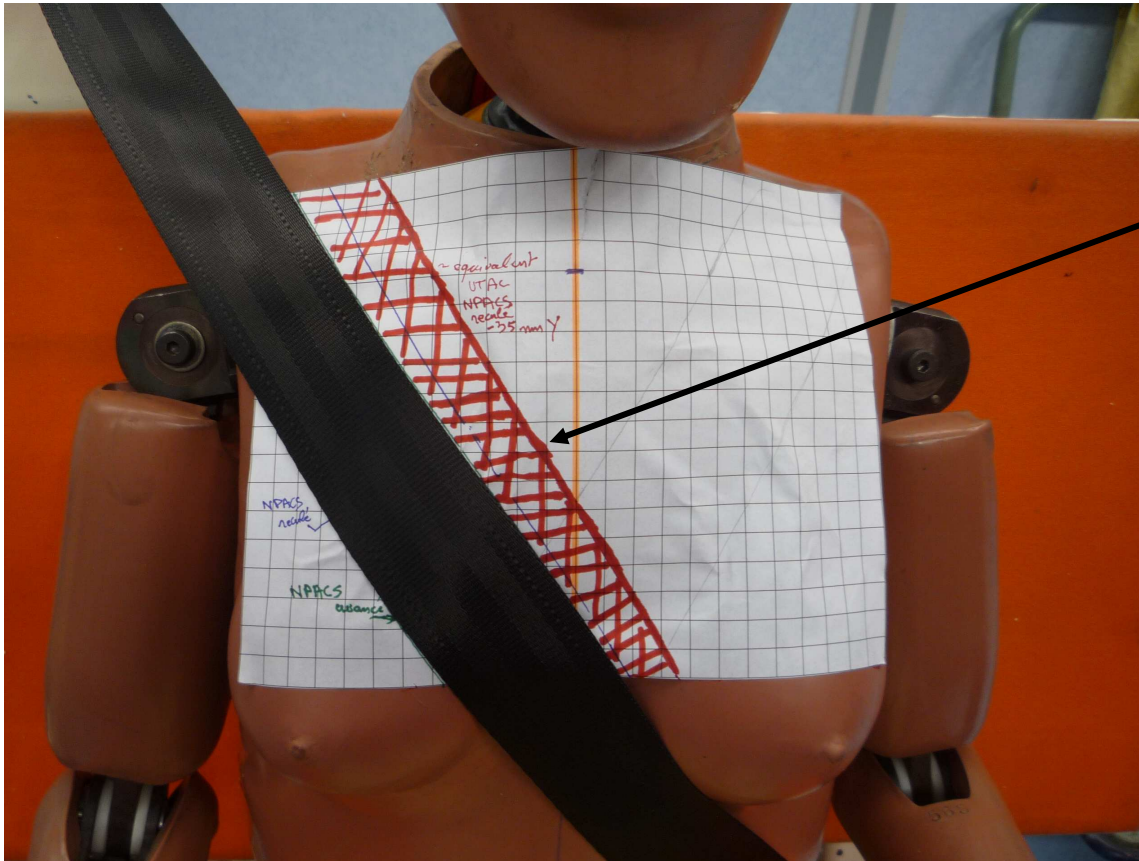
Forward upper point



Forward upper point



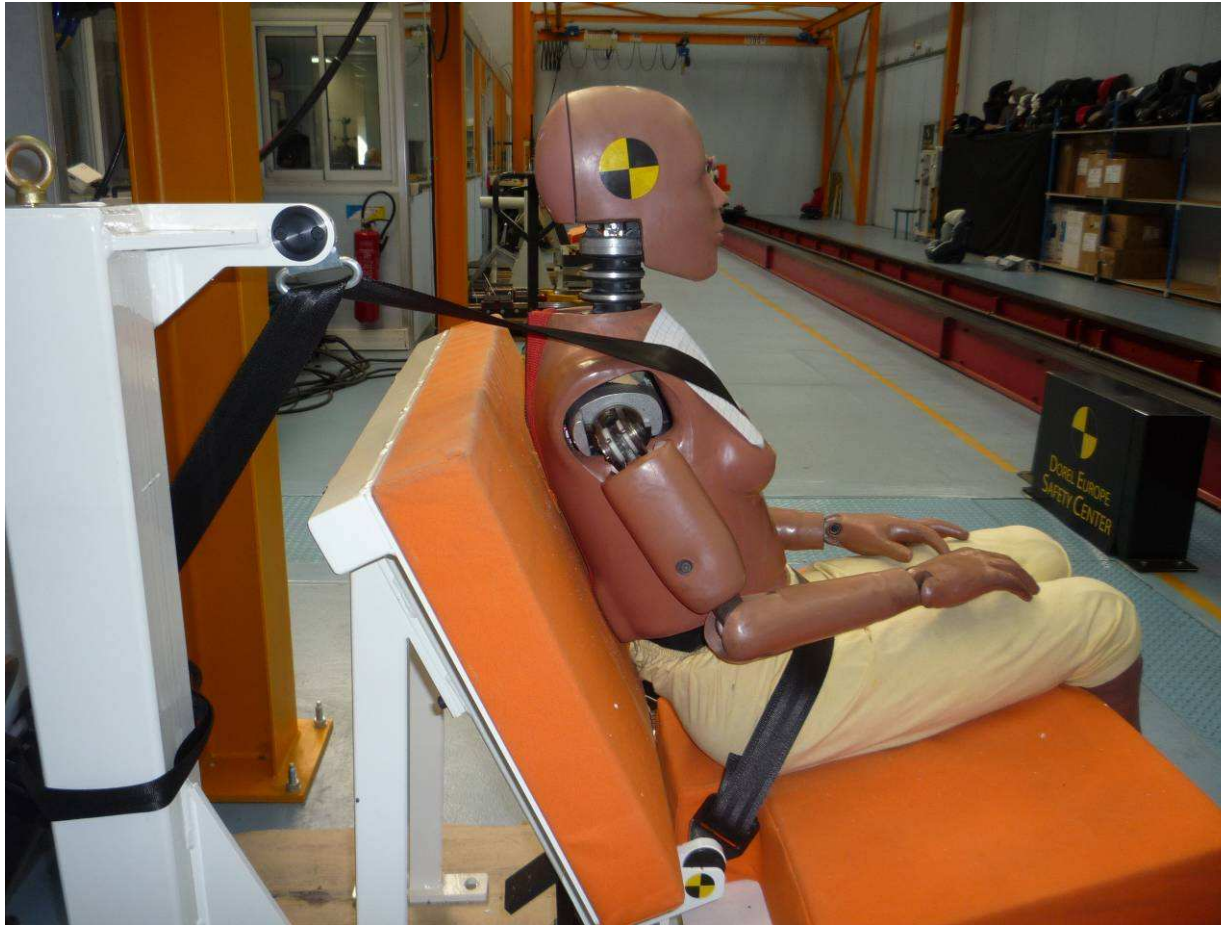
Forward upper point



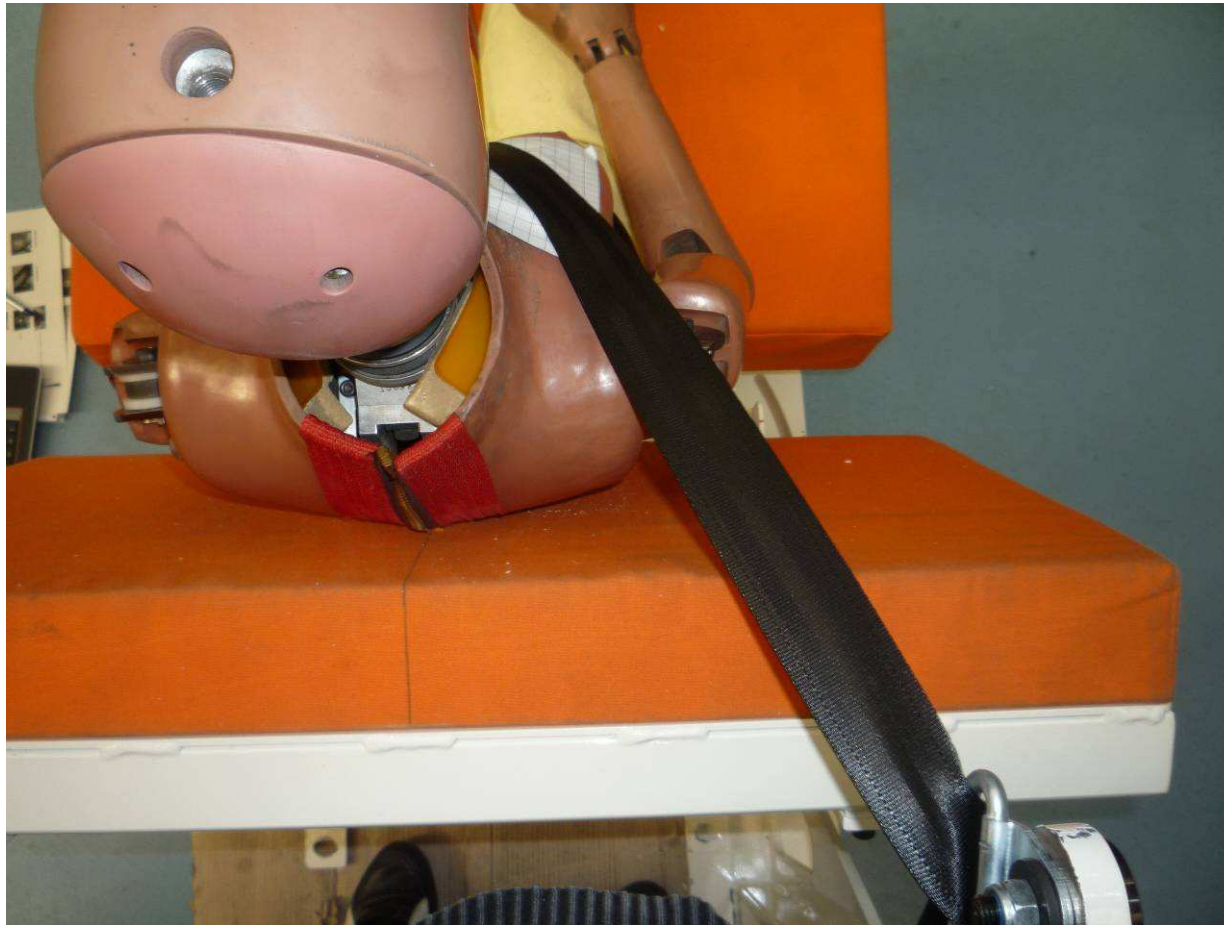
Reference from
UTAC study



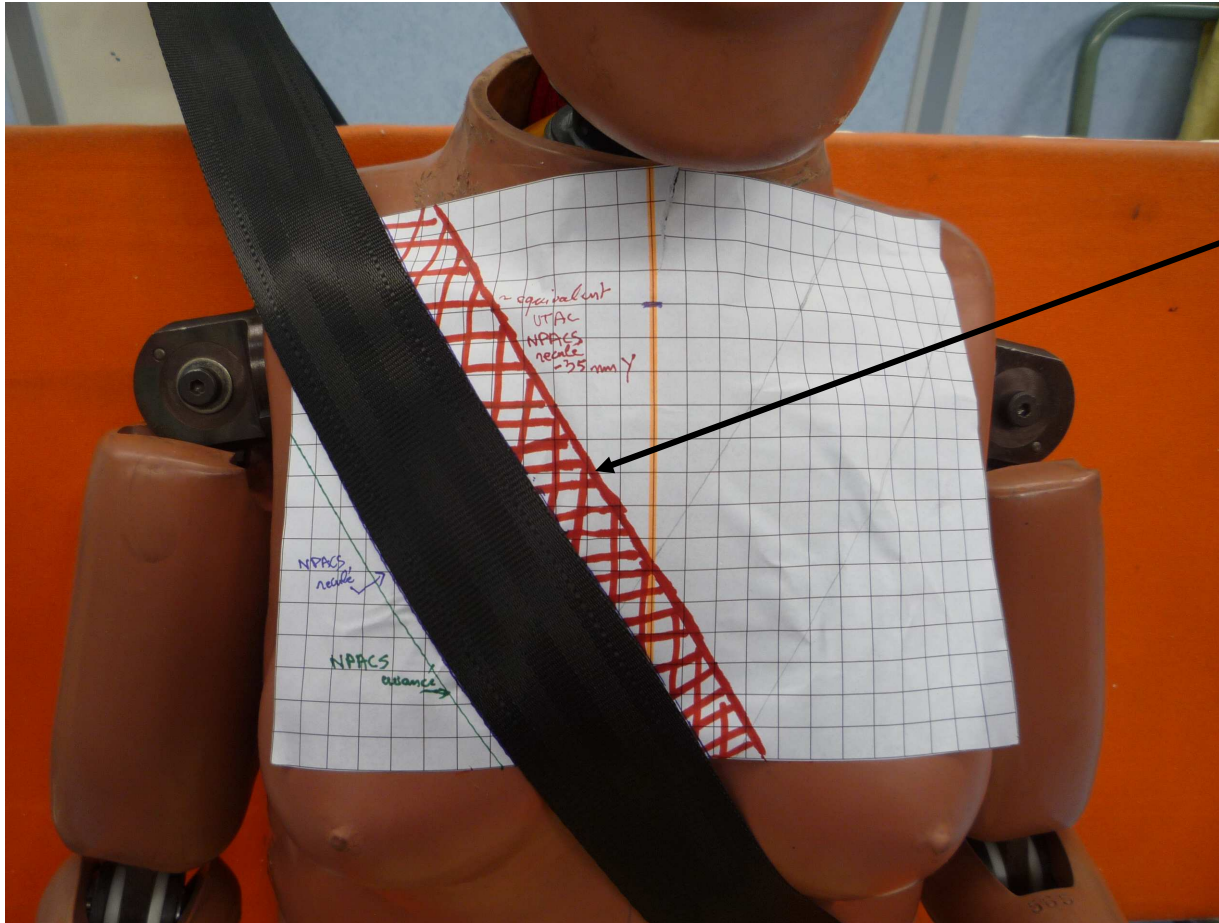
Rearward upper point



Rearward upper point



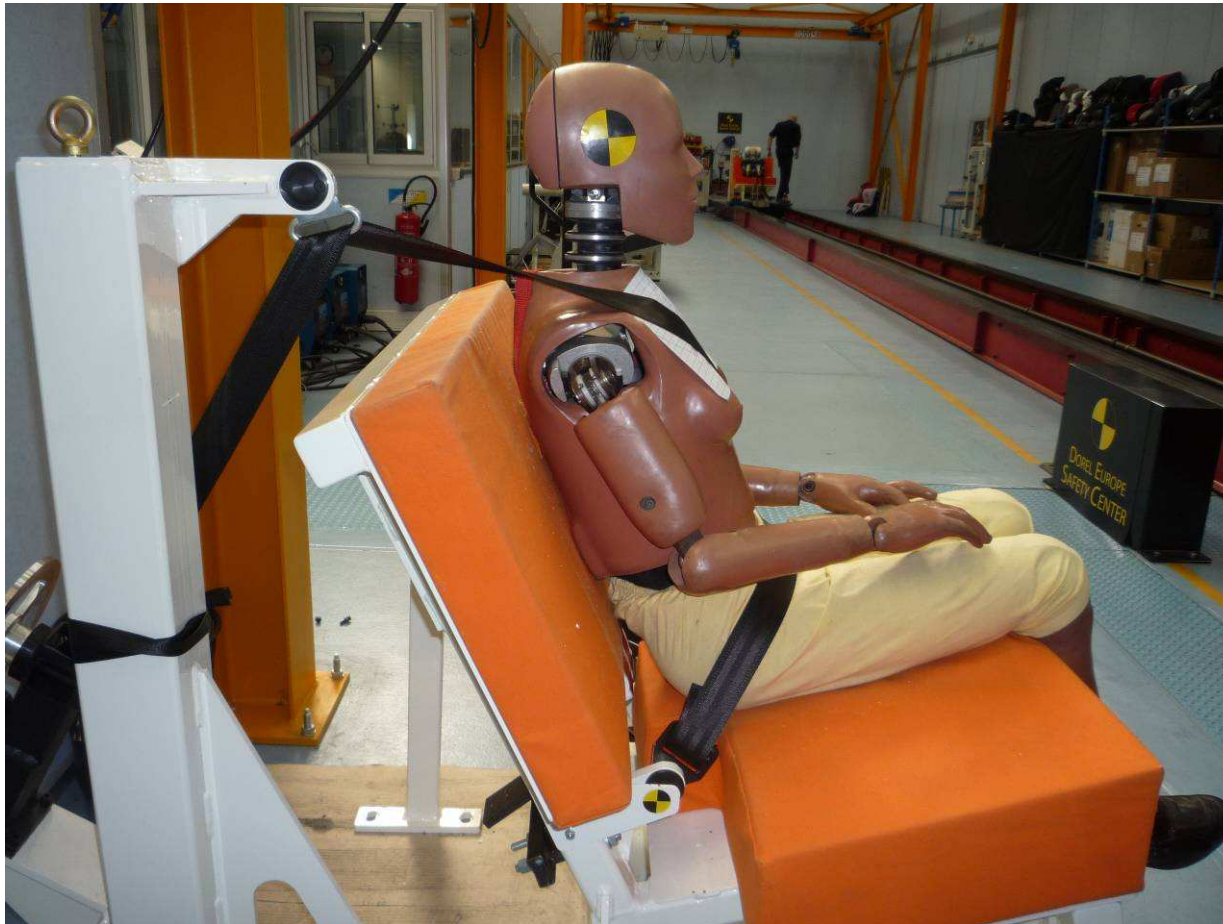
Rearward upper point



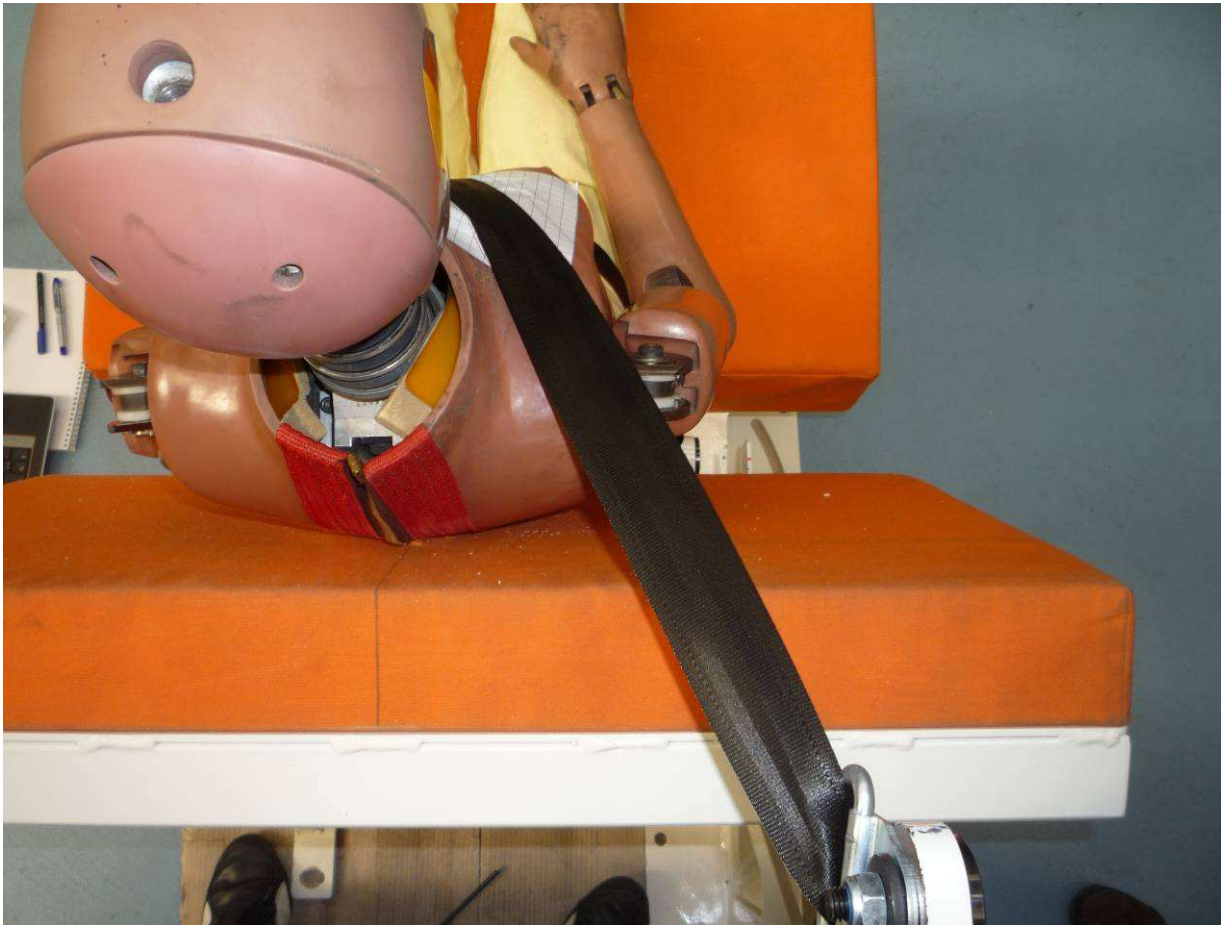
Reference from
UTAC study



Adjusted upper Point



Adjusted upper Point



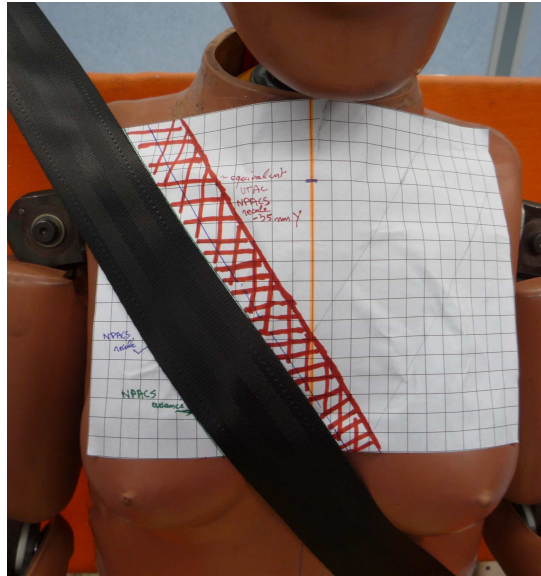
Adjusted upper Point



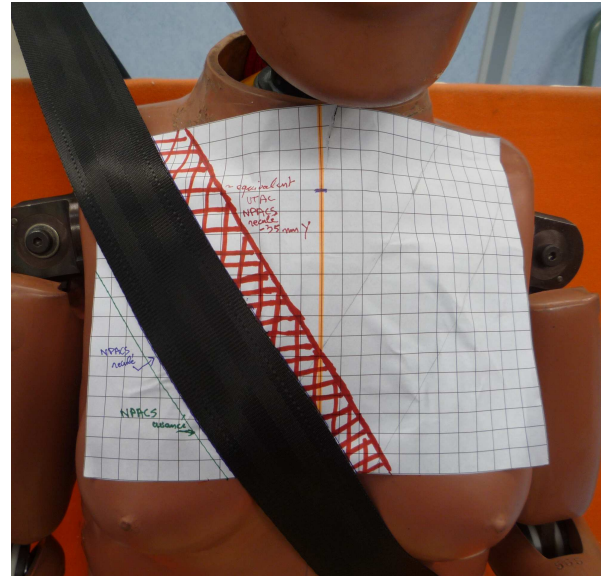
Adjusted upper point =
Rear TRL + 30 mm in Y
X = -240 mm
Y = -220 mm
Z = -630 mm



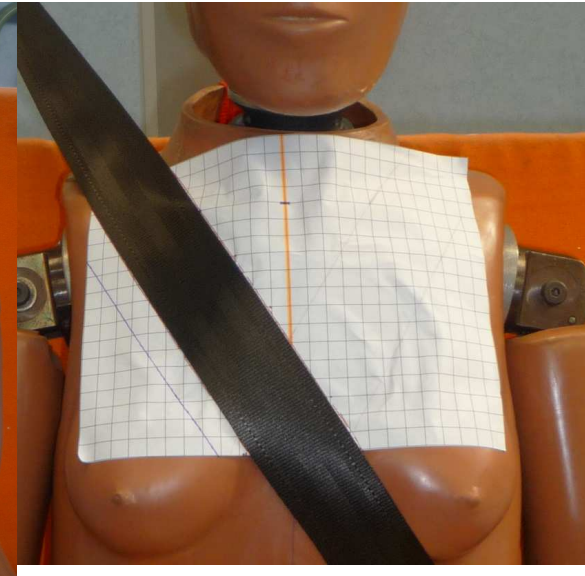
Summary – NPACS bench



Most Forward



Rearward



Adjusted



Comparison with Golf 6 and Astra H



Astra H

Golf 6

Adjusted



Conclusion

- Slight modification (30 mm) on TRL upper anchorage position enables to get equivalent belt routing as the one from UTAC study.
- Comparison with Astra H and Golf 6 in line with proposal

