



**vti**

FINDING A BETTER WAY

## Background

EEVC WG18

Request from GRSP informal group CRS

## Objective

A first aim to identify a potential geometric zone, relative to the present two rigid ISOFIX anchorages, where a third ISOFIX anchorage may be positioned.

3rd ISOFIX anchorage is intended for a connection with a CRS, forward and rearward facing.

## Method

Measurement fixture based on the envelopes R2 (and R3) defined in ISO 13216-3:2006 (ECE R16 Annex 17)

The x and z coordinates were calculated to give the measurements relatively to the centre line for the two rigid ISOFIX anchorages.

## Results

Six vehicles were measured, listed in table 1; small car, mid size car, multipurpose car and a van.

Based on the measurements,  $x$  and  $z$  (vehicle coordinate system) were calculated.

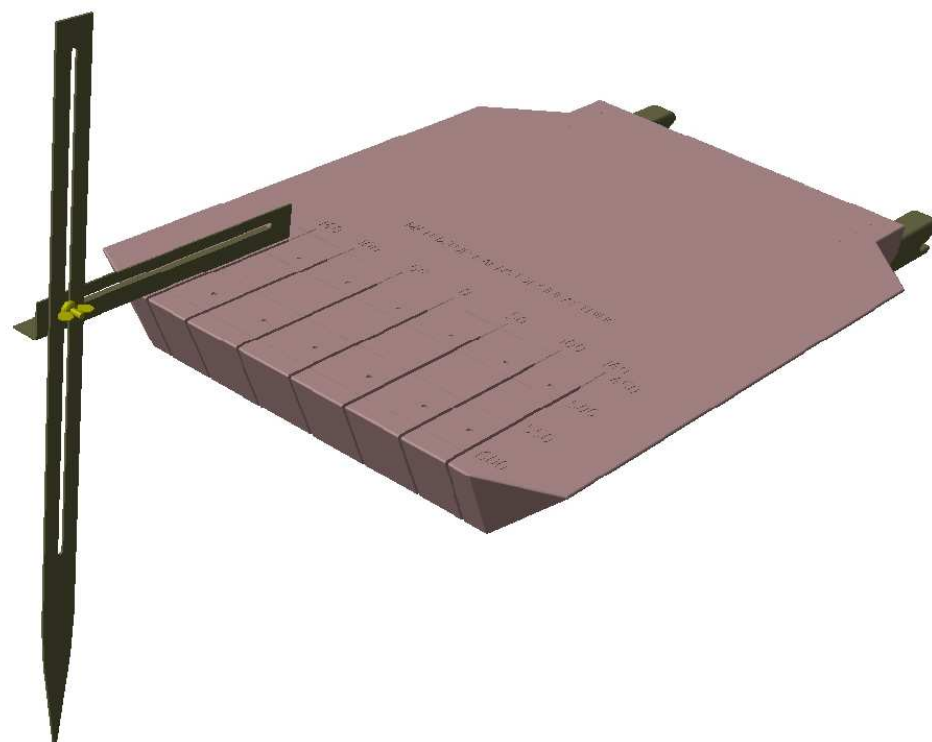
## Three different points in every vehicle measured

Floor, rearmost point

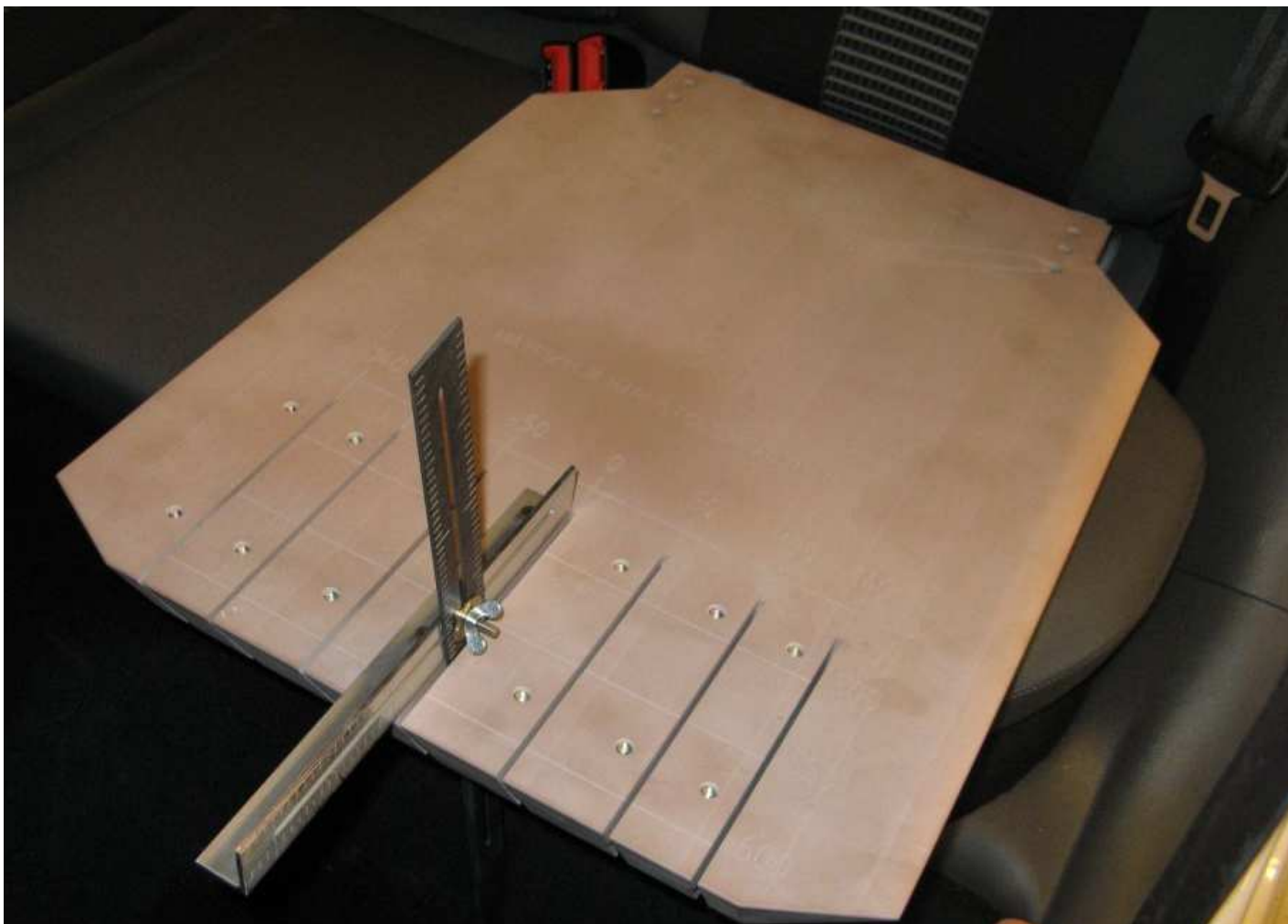
Heel kick, mid height

Heel kick, horizontal plane by seat

## Measurement fixture



## In vehicle

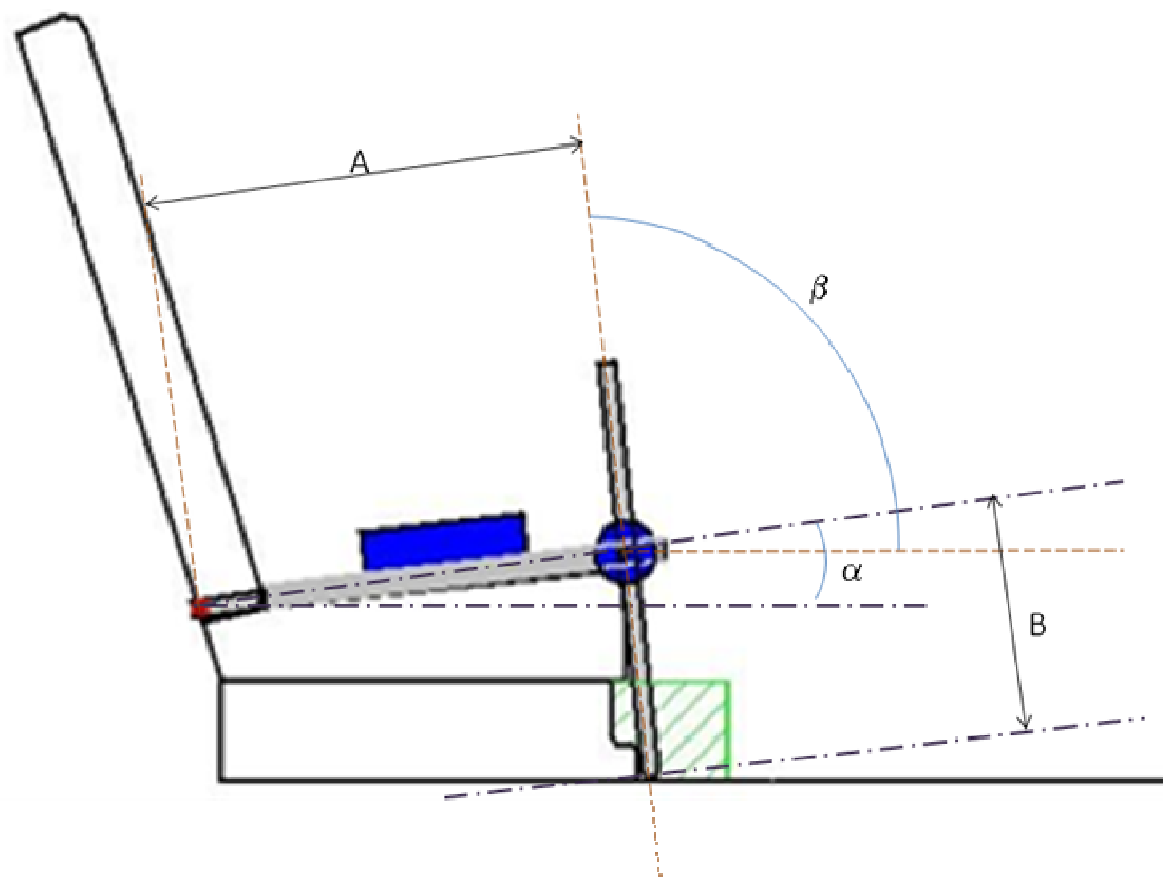




## In vehicle



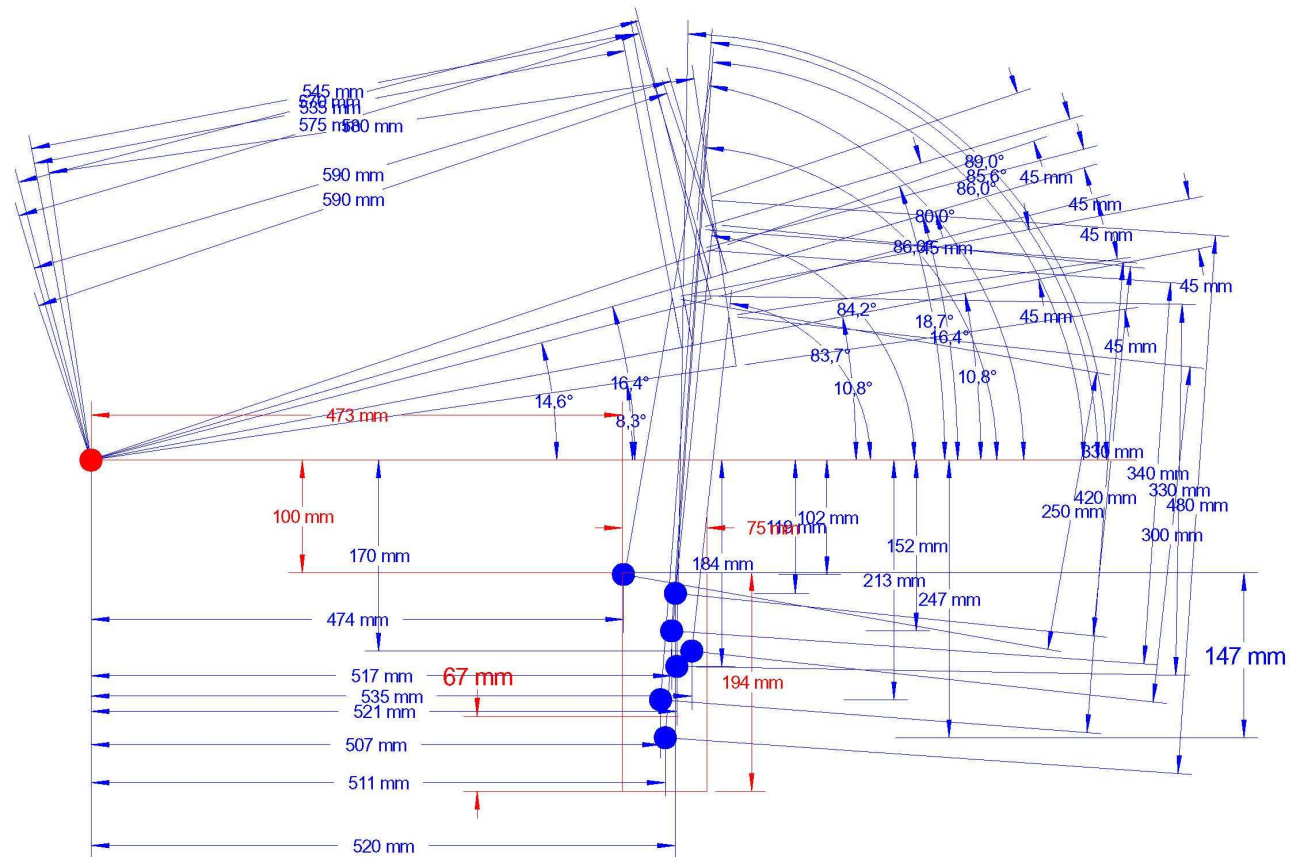
## Overview of measurements



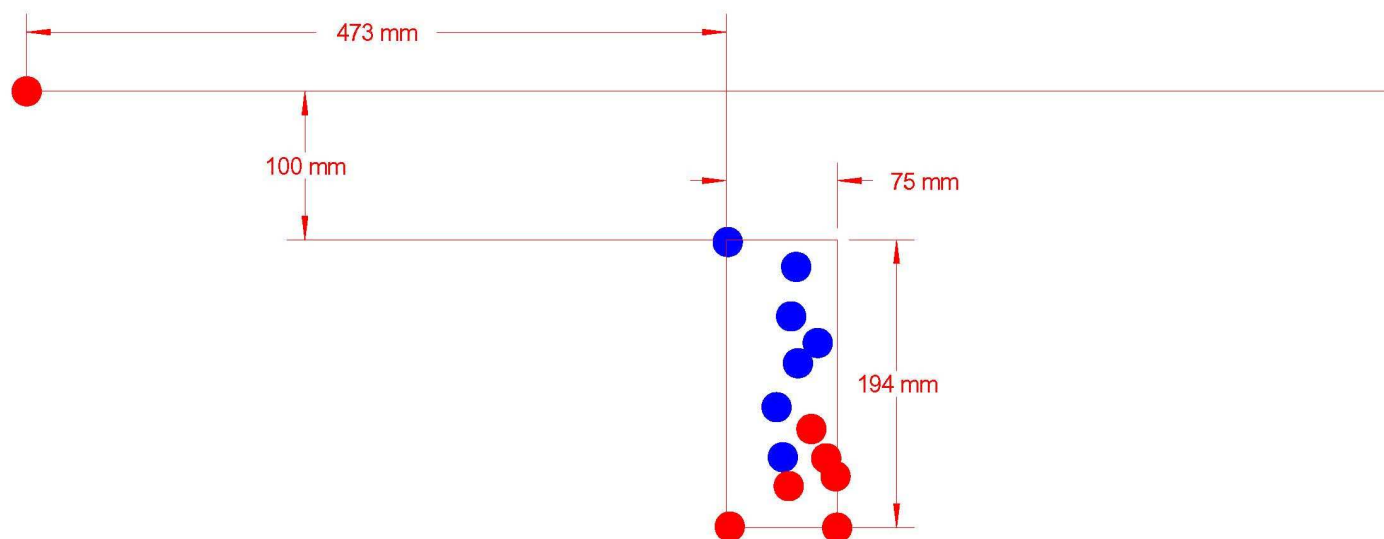




# Heel kick



## Heel kick and floor



**Table 1 Results (measured with the measurement fixture).**

Vehicle make	Vehicle model	Model year	A (mm)	B (mm)	alfa (deg.)	beta (deg.)	Point position	Other	x	z
Hyundai	H-1 kombi	2008	495	440	11.9	90	floor, rearmost point	flat floor (no heel kick)	-475	-294
VW	Golf	2008	565	410	10.8	90	floor, rearmost point		-547	-260
VW	Golf	2008	545	330	10.8	89	heel kick, mid height		-521	-184
VW	Golf	2008	535	250	10.8	80	heel kick, horizontal plane by seat		-474	-102
Land Rover	Freelan der	2008	575	455	18.7	90	floor, rearmost point		-530	-228
Land Rover	Freelan der	2008	590	480	18.7	86	heel kick, mid height		-511	-247
Toyota	Auris	2008	550	465	16.4	90	floor, rearmost point		-515	-267
Toyota	Auris	2008	575	420	16.4	85.6	heel kick, mid height		-507	-213
Toyota	Auris	2008	590	330	16.4	84.2	heel kick, horizontal plane by seat		-520	-119
Volvo	V70	2008	570	435	14.6	90	floor, rearmost point		-540	-248
Volvo	V70	2008	570	340	14.6	86	heel kick, mid height		-517	-152
Infiniti	G35x	2007	560	420	8.3	90	floor, rearmost point		-548	-295
Infiniti	G35x	2007	580	300	8.3	83.7	heel kick, mid height		-535	-170

## More measurements

The aim is to measure most of car models representative in Sweden

For the moment approx 15 more models have been measured, measurements to be continued next week