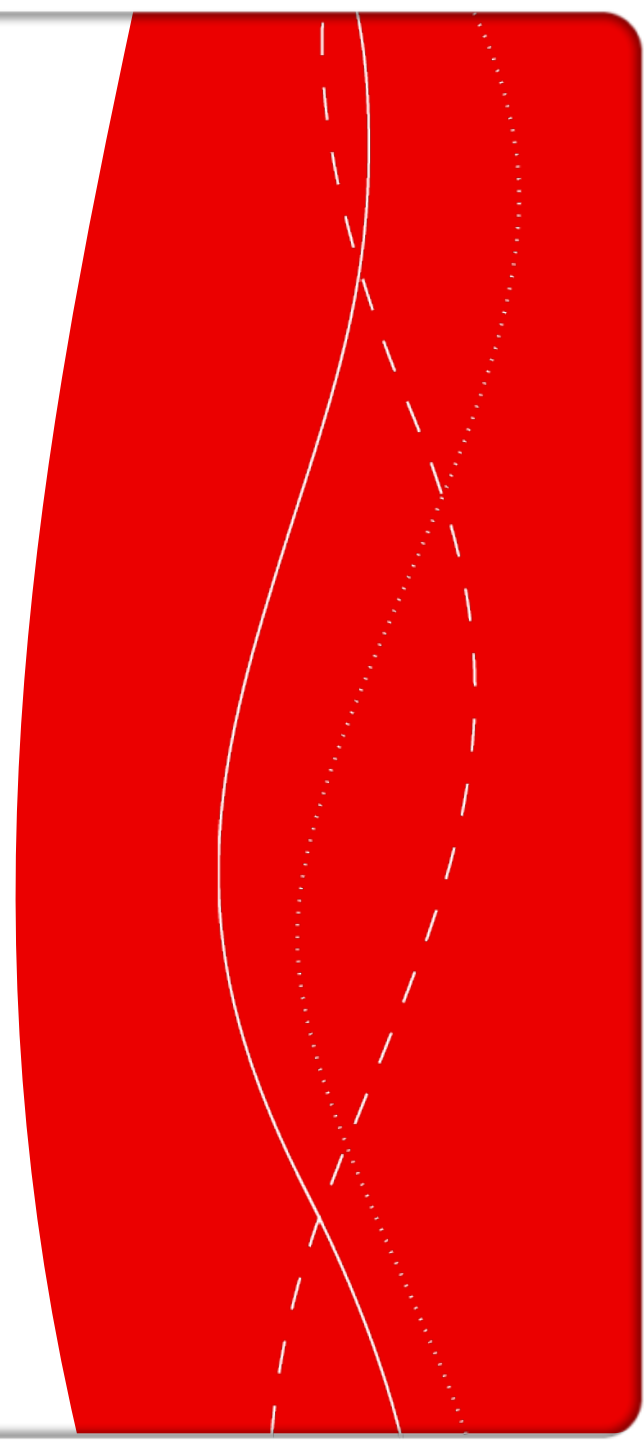


The logo consists of the lowercase letters 'vti' in a bold, red, sans-serif font. The 'v' is a simple, thick shape. The 't' has a vertical stem and a horizontal crossbar. The 'i' has a vertical stem and a solid red dot above it.

**Rearward facing the  
Scandinavian way**

For children with a stature above i-Size



**Rearward facing**

A short historical review

# 2014 - Rearward facing for 50 years



The first rearward facing child seat prototype  
Crash test 1964 in a Volvo PV 444

**In 1975 the T-approval**

# The Swedish Protocol/Regulation for CRS into force

Measurement in the head ( $400 \text{ m/s}^2$ )

Measurement in the chest

Maximum weight of the child: 35 kg

In practice only rearward facing possible

# 1981 ECE R44

- “No” maximum size for rearward facing CRS (36 kg)
- In Scandinavia common to use group II rearward facing
- Minimum height inside the CRS (“sitting height” – 500 mm)

# ISOFIX

- ISOFIX maximum weight of the child 18 kg
- Necessary (Scandinavian way) to switch from ISOFIX to adult seat belt installation when a child exceeds 18 kg.
- Still common with group II rearward facing in Scandinavia

## 2008 -2009 in Scandinavia

- T-approval not allowed (not allowed to have national approvals inside EU)
- Plus Test (a modern T-approval on voluntary basis)
- Plus Test, a must to have ECE R44 approval “as a base”

# 2013 Regulation 129

- i-Size into force
- In practice up to 105 cm
- Still a need for “bigger” rearward facing CRS



## Regulation 129 phase 3

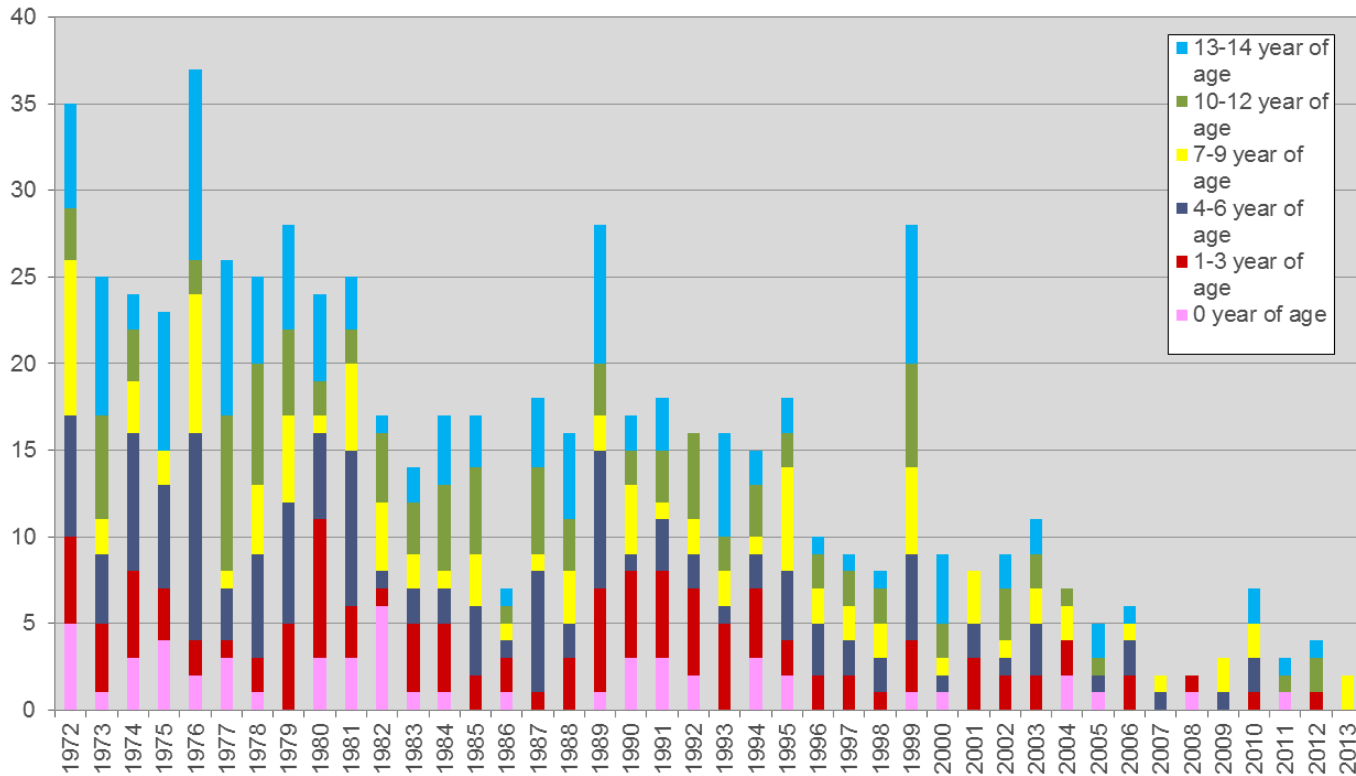
For children with a stature “above i-Size”

# Why a need for “bigger” RF CRS?

- Good experience after almost 50 years of use
- The low risk for fatal injuries
- Increasing request outside Scandinavia
- “In line” with 129, to promote rearward facing

# Good experience / low risk

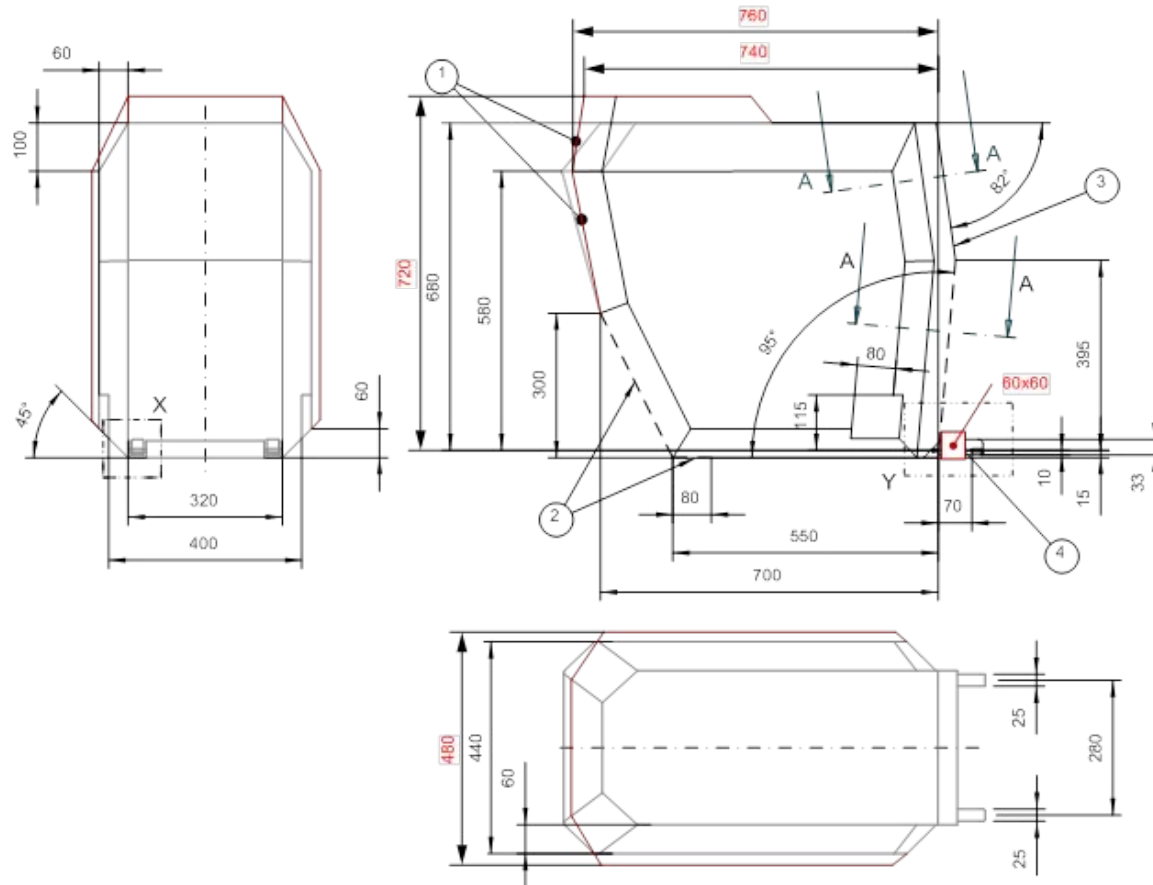
Number of children killed in cars in Sweden 1972-



# Rearward facing Universal

- Up to 125 cm
- Use the Q6 dummy
- A modified ISO-R3 (ISO13216-3/UN R16)
- Insert lower tether points in R129 (R3, R4 and R5 from ECE R44 rig)

# Modified ISO 13216-3/UN R16



# Examples of “Scandinavian” RF CRS

CRS	Width in sholder region	Width in leg region	Height	Adjusted to max height	Depth
Kiss 2	415	425	610	690	650
Klippan Triofix	425	400	610	740	580
Besafe Izi Plus	450	450	590	670	700
Britax Hi-Way	430	455	630	N/A	480
Britax Max-Way	440	460	630	650	560
Britax Multi Tech	490	455	615	675	530
Britax Two-Way	455	455	710	N/A	470
Britax Max-Fix 2	425	450	630	650	630
Axkid Minikid	480	400	630	700	480
Maxi-Cosi Mobi XP	425	490	700	730	700
Maxi-Cosi Pearl XP	430	440	580	670	730

# Modification etc. of the R3

## CRS mounted with adult seat belt

- Expand the width to 480 mm (due to the possibility of some sideways movement, the increased width should be fully compatible with vehicles accommodating the 440 mm ISOFIX envelope).
- Expand the height (in the head area) to 720 mm
- Remove ISOFIX connectors
- Insert a distance piece 60x300x60 mm to position the envelope in a position similar to ISOFIX attachment.
- Keep existing dotted line for the support leg

## Modification etc. of the R3

### CRS mounted with adult safety belt

Dotted line for the “support” to the backrest of the car, the height should be 495 mm (a resolution from the latest ISO meeting). The same height as for the “angle knee” on the existing F2X and for the R2X (under development)



## Modification etc. of the R3

### CRS mounted with adult seat belt

Installation shall be with the centreline of the CRS in apparent centreline of the seating position  $\pm 25$  mm and the CRS parallel to the centreline of the vehicle.  
(in line with R16 and EuroNCAP)

**End**

Thank you