

Future Vehicle Safety in Australasia and the Role of ANCAP

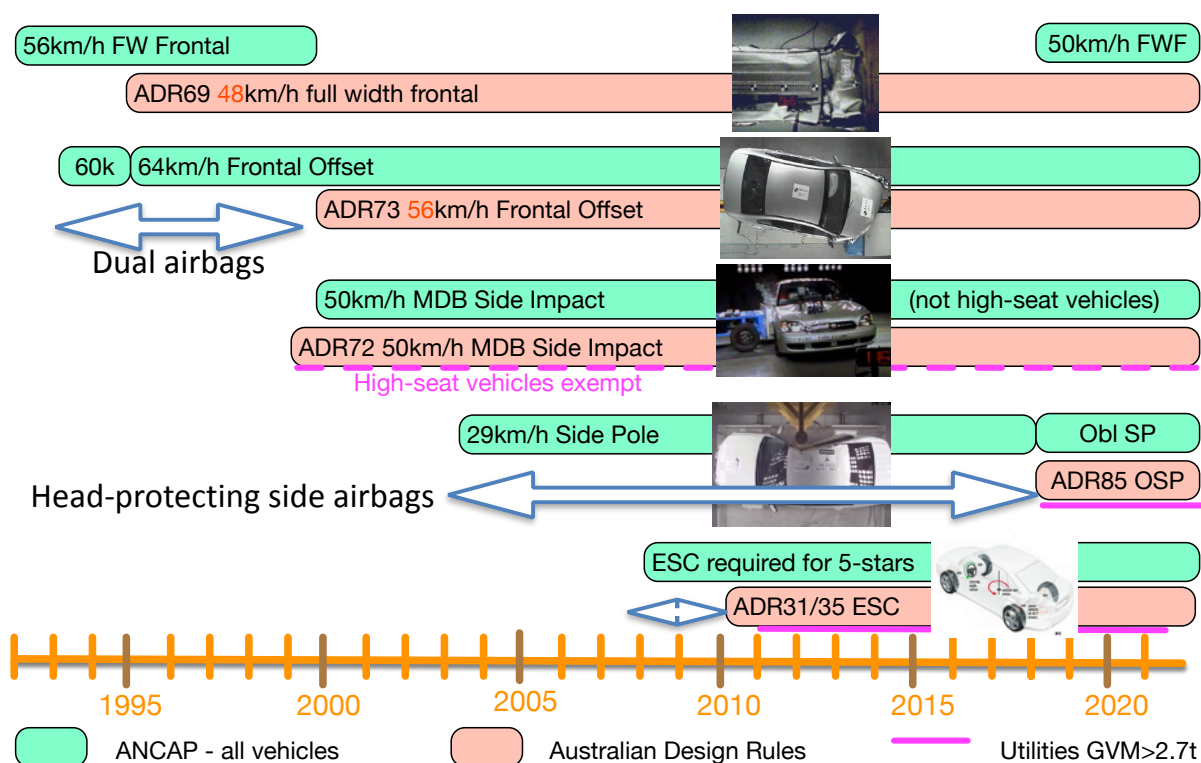
Michael Paine

Australasian Road Safety Conference
September 2016

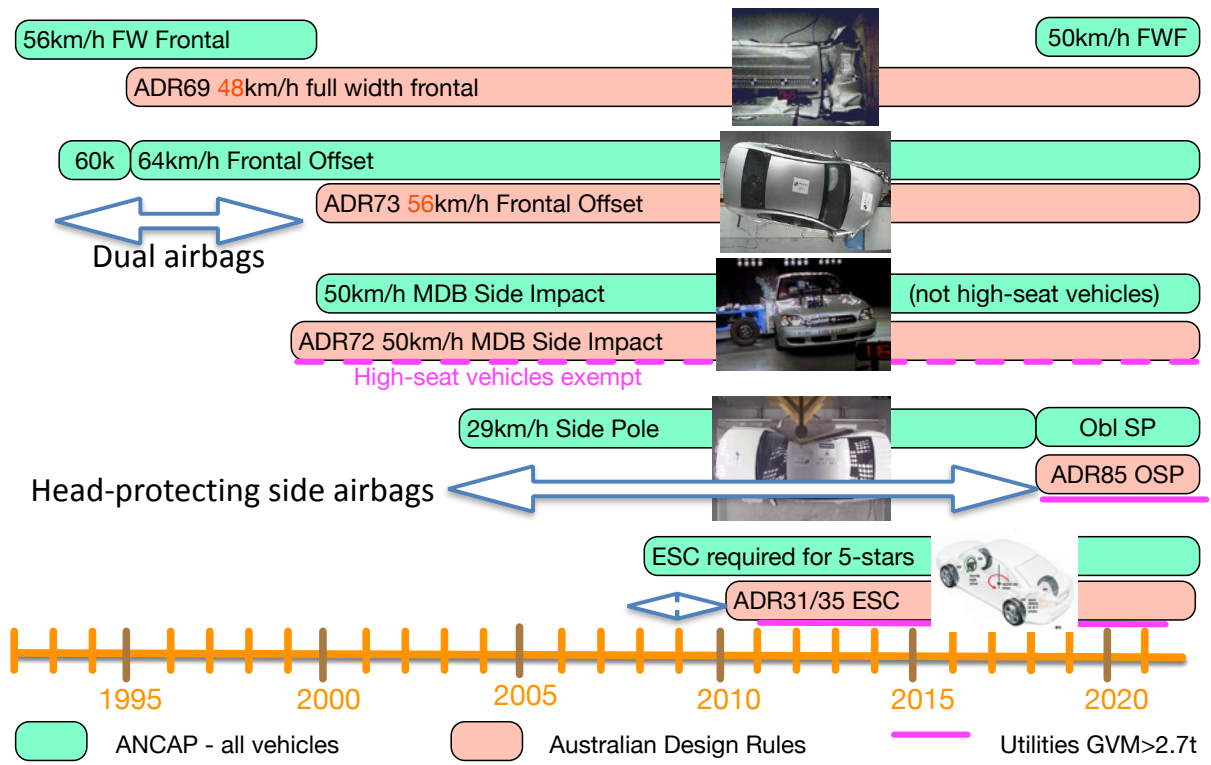
Note: This presentation represents the views of the author and not of any organisation

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TIMELINE FOR NCAP & REGULATIONS

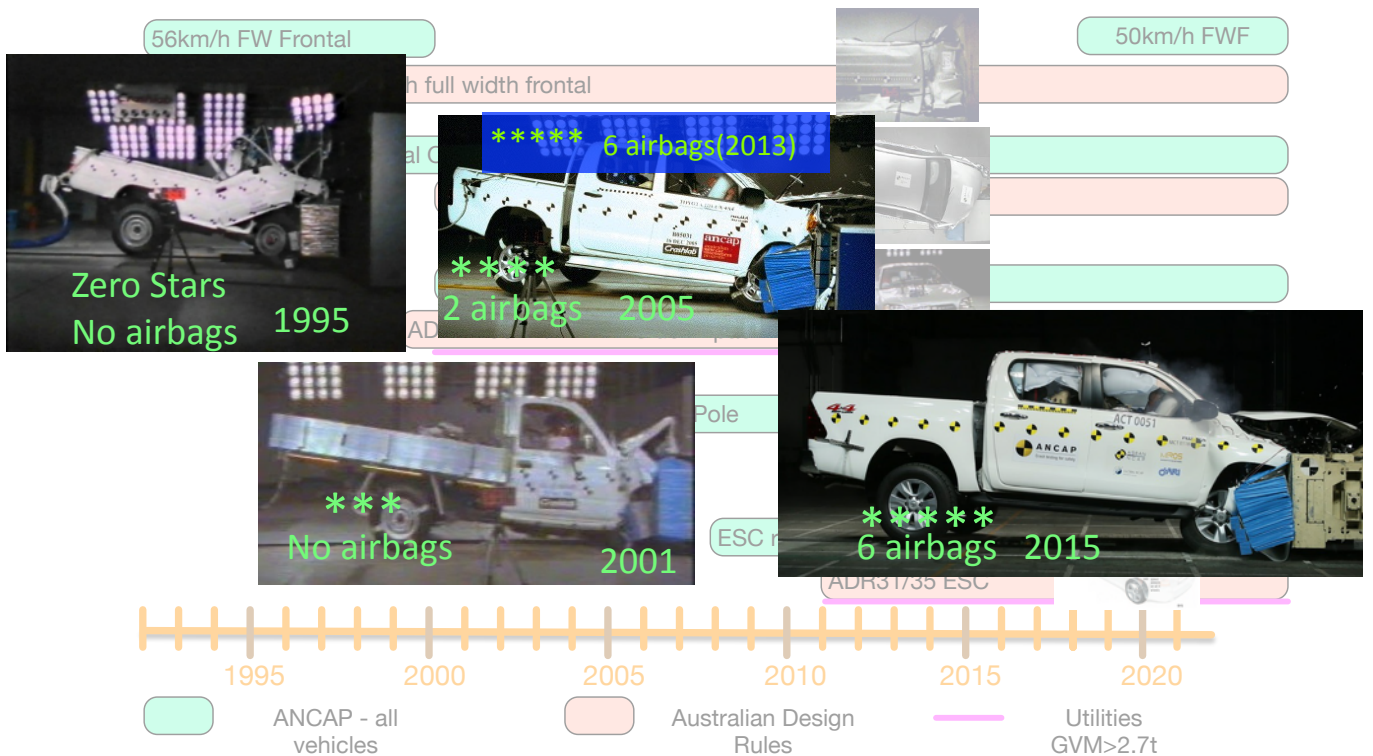


TIMELINE FOR NCAP & REGULATIONS



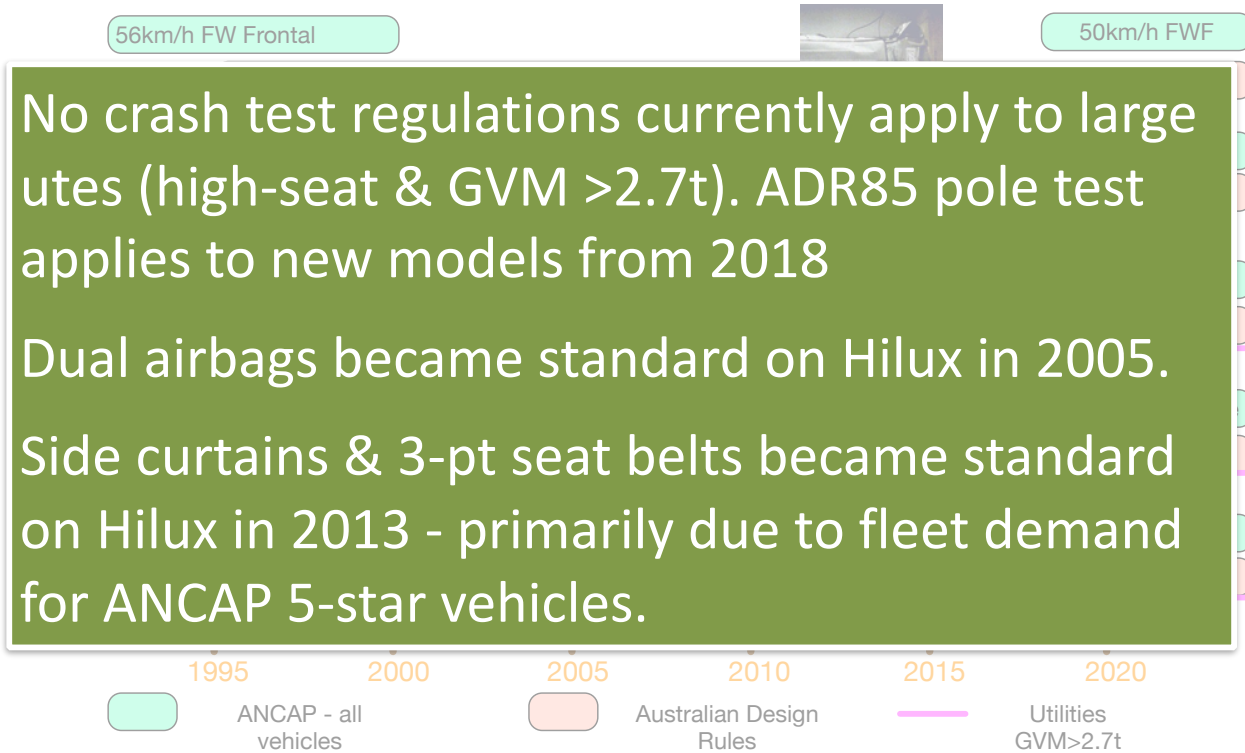
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TIMELINE FOR NCAP & REGULATIONS TOYOTA HILUX UTE EXAMPLE



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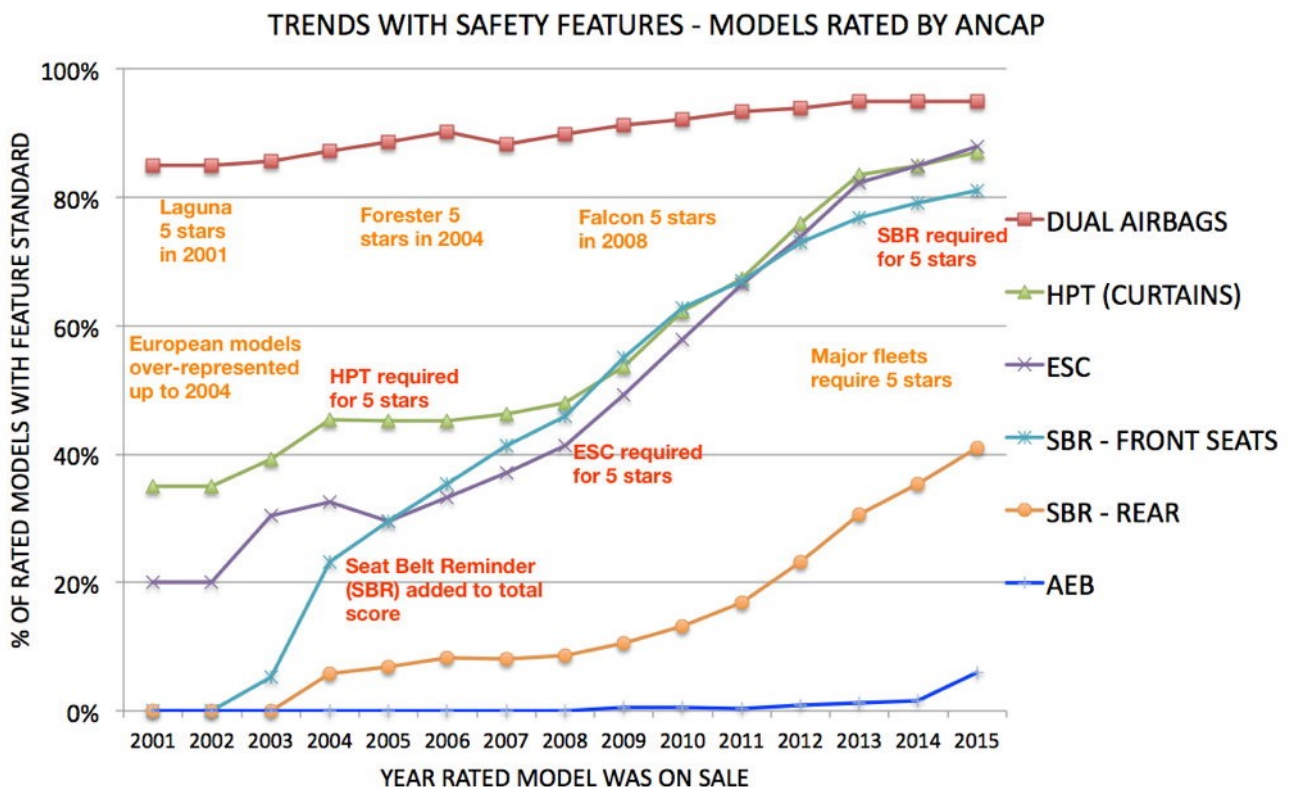
TIMELINE FOR NCAP & REGULATIONS TOYOTA HILUX UTE EXAMPLE



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SAFETY FEATURES - ALL LIGHT VEHICLES

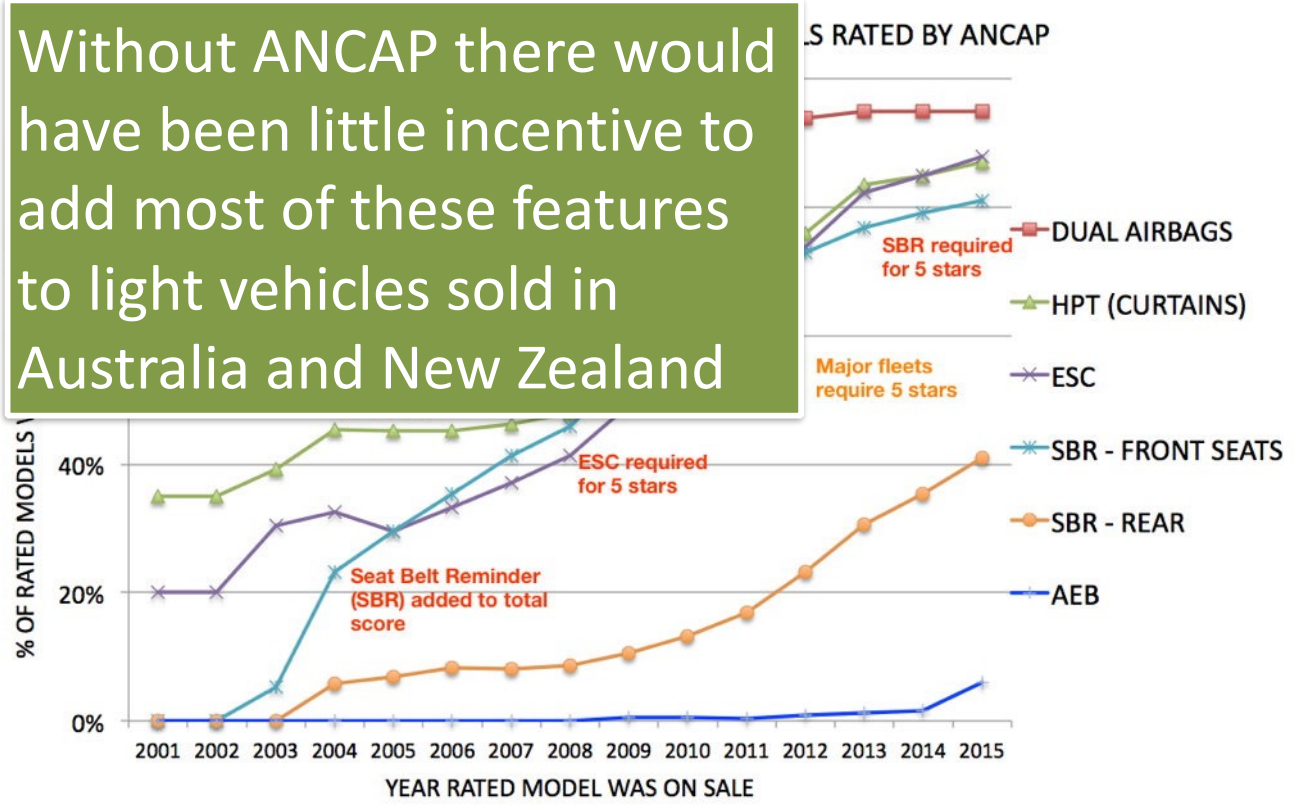


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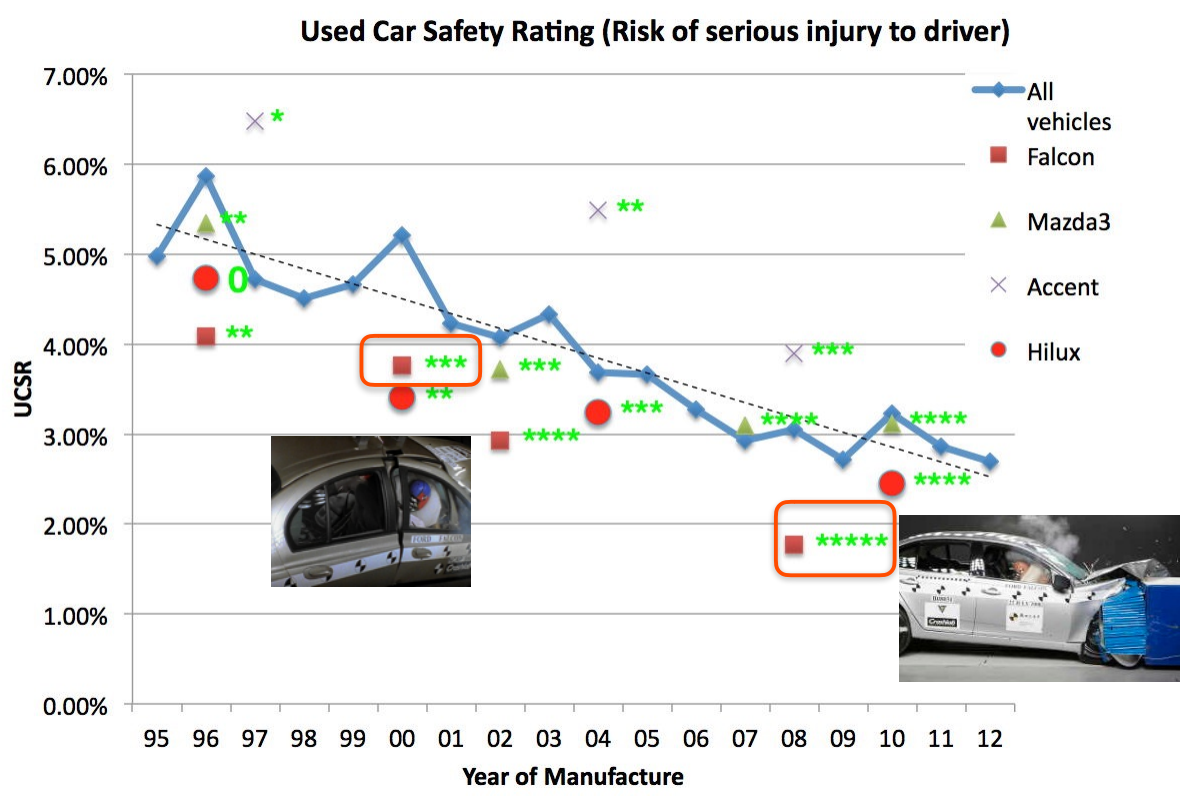
SAFETY FEATURES - ALL LIGHT VEHICLES

Without ANCAP there would have been little incentive to add most of these features to light vehicles sold in Australia and New Zealand



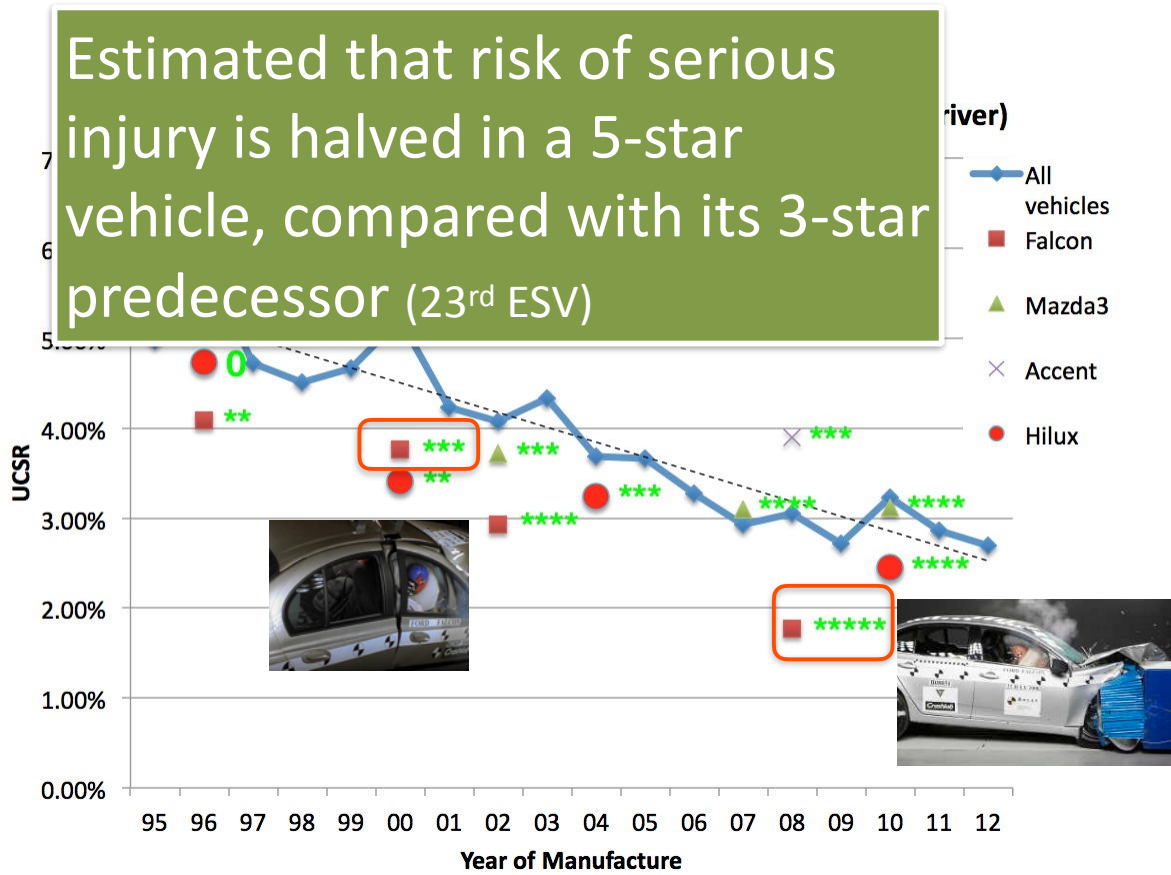
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CRASHWORTHINESS IMPROVEMENTS



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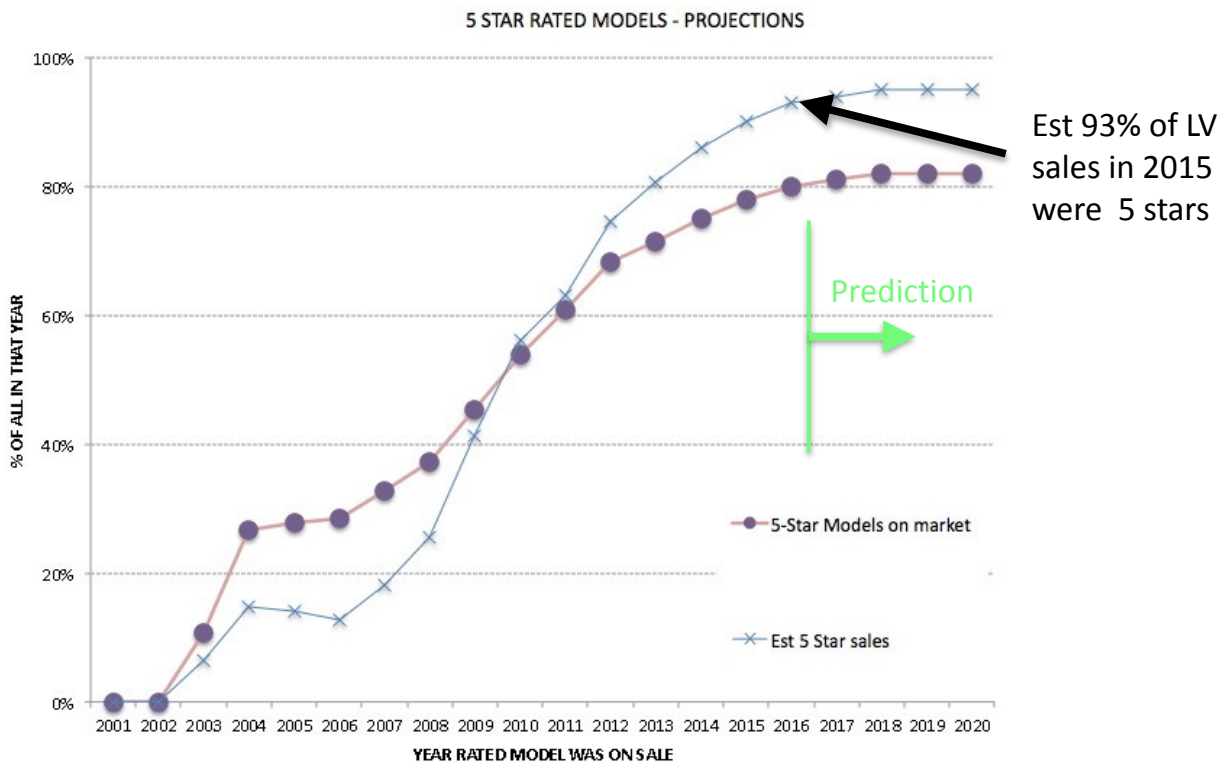
CRASHWORTHINESS IMPROVEMENTS



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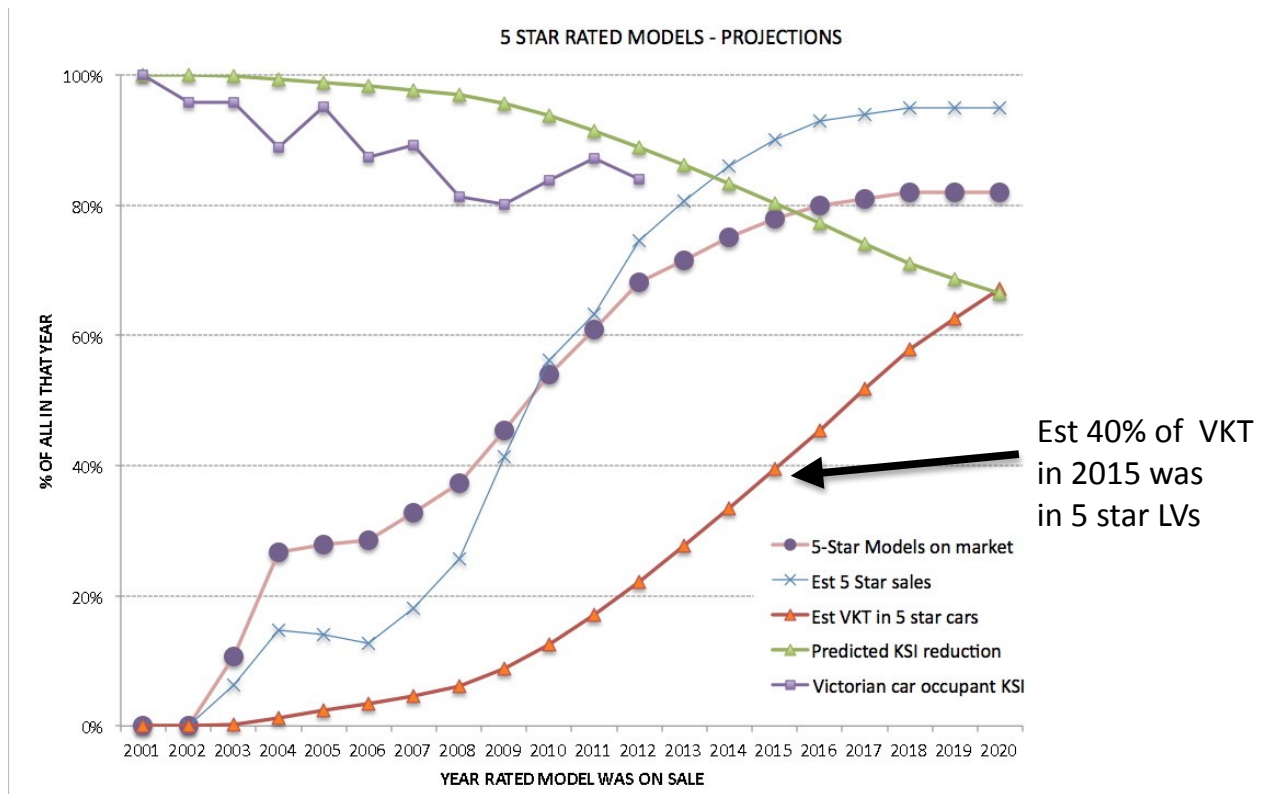
UPTAKE OF ANCAP 5-STAR MODELS (ALL LIGHT VEHICLES)



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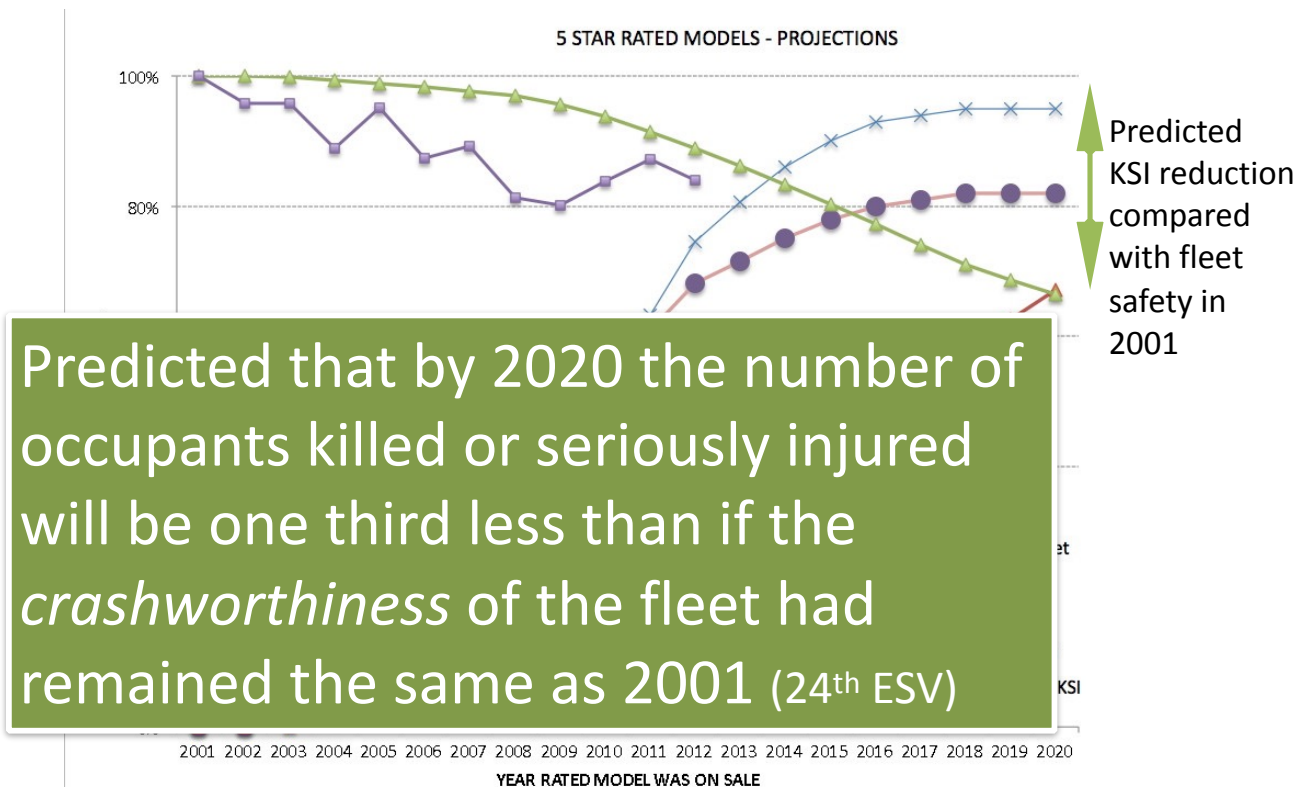
ESTIMATED VEHICLE KM TRAVELLED (VKT) & SAVINGS IN KILLED & SERIOUSLY INJURED (KSI)



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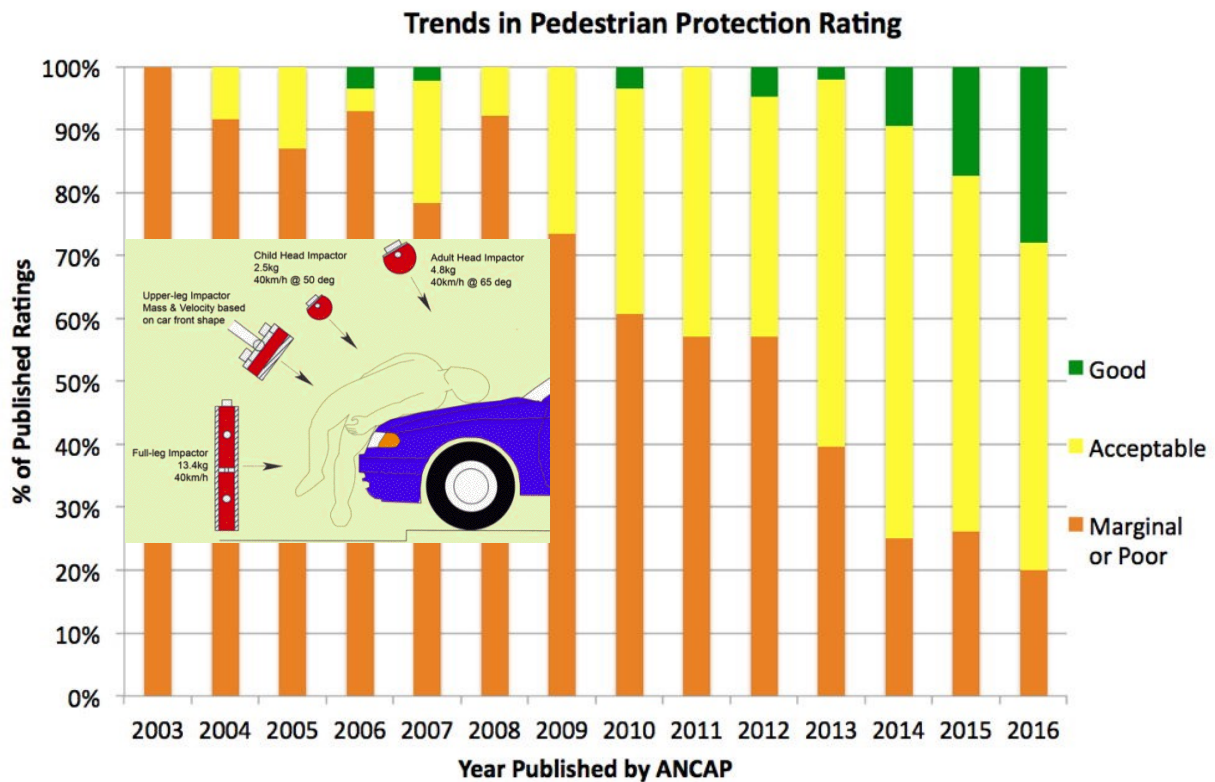
ESTIMATED VEHICLE KM TRAVELLED (VKT) & SAVINGS IN KILLED & SERIOUSLY INJURED (KSI)



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PEDESTRIAN PROTECTION IMPROVEMENTS



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PEDESTRIAN PROTECTION IMPROVEMENTS

Trends in Pedestrian Protection Rating

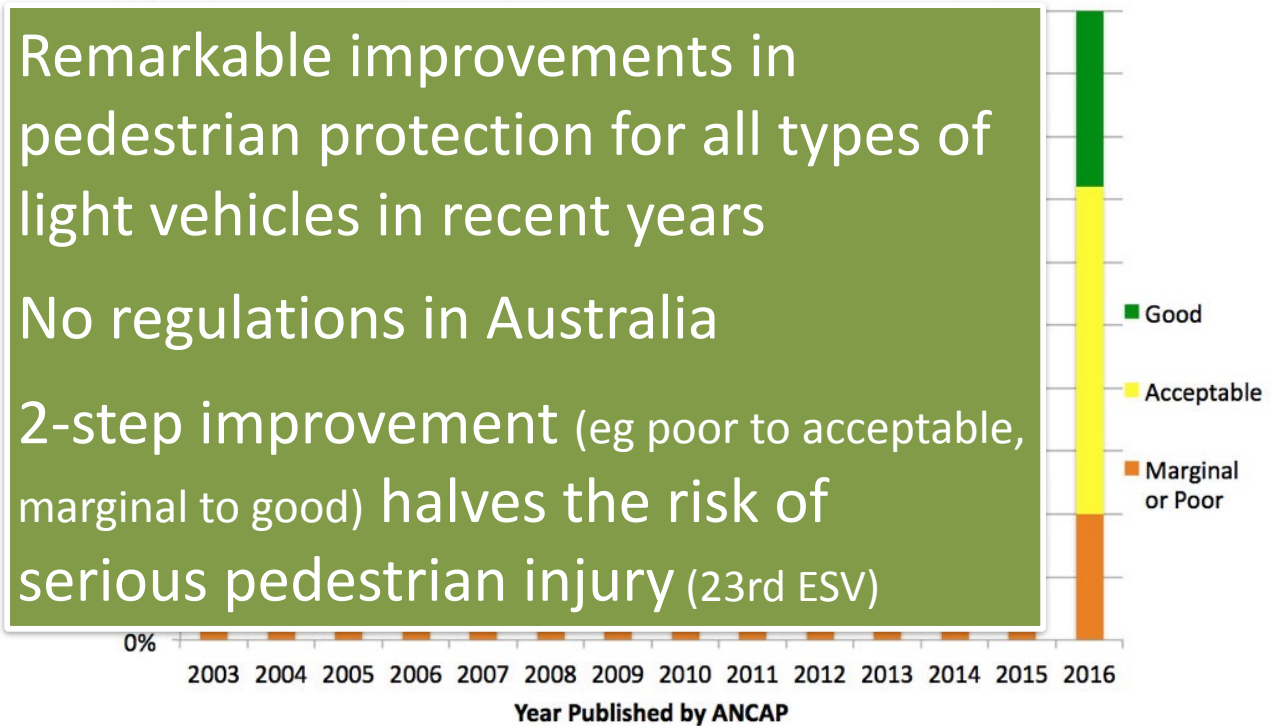


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PEDESTRIAN PROTECTION IMPROVEMENTS

Trends in Pedestrian Protection Rating



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2018 Test & Assessment Protocols

From 2018:

- Same test and assessment protocols as Euro NCAP except for some regional differences
- Includes alignment of technical policies & procedures.
- This means:
 - new & updated tests
 - new test equipment
 - new assessment methods
 - new scoring methodology

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2018 Test & Assessment Protocols

ANCAP Safety Assist assessment will include:

- **Speed assistance systems (SAS)**
- **Advanced seat belt reminders (SBR),**
- **Autonomous Emergency Braking (AEB): car-to-car, pedestrian & cyclists and**
- **Lane support systems (LSS)**



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2018 Test & Assessment Protocol REAR SEAT IMPROVEMENTS

- **50km/h full width frontal crash test using a small adult female dummies for the driver and **rear passenger****
- **Q6 & Q10 (older child) dummies **in rear seat** for frontal offset test**
- **Rear seats are neglected in regulation**



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UPTAKE OF SAFETY FEATURES

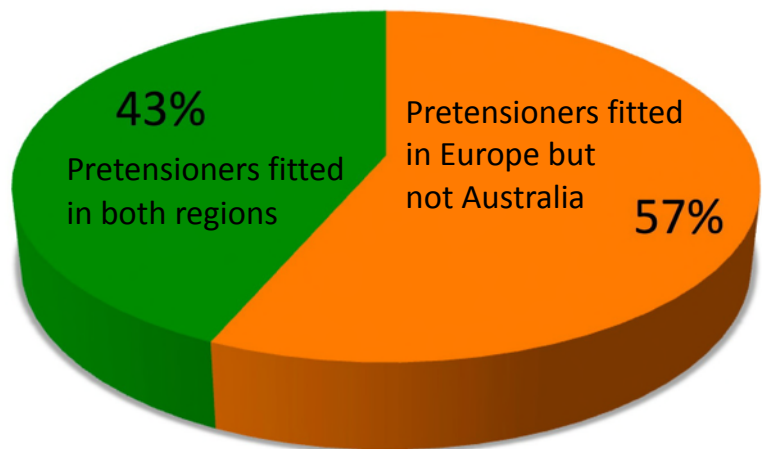
REAR SEAT IMPROVEMENTS

In Europe OEMs are now fitting seat belt pretensioners and load-limiters to outboard rear seat belts

Nearly all models rated by Euro NCAP in 2015 had these features

But only 10 of the 23 models with Australian counterparts had them

Pretensioners for outboard rear seats
Euro NCAP ratings in 2015

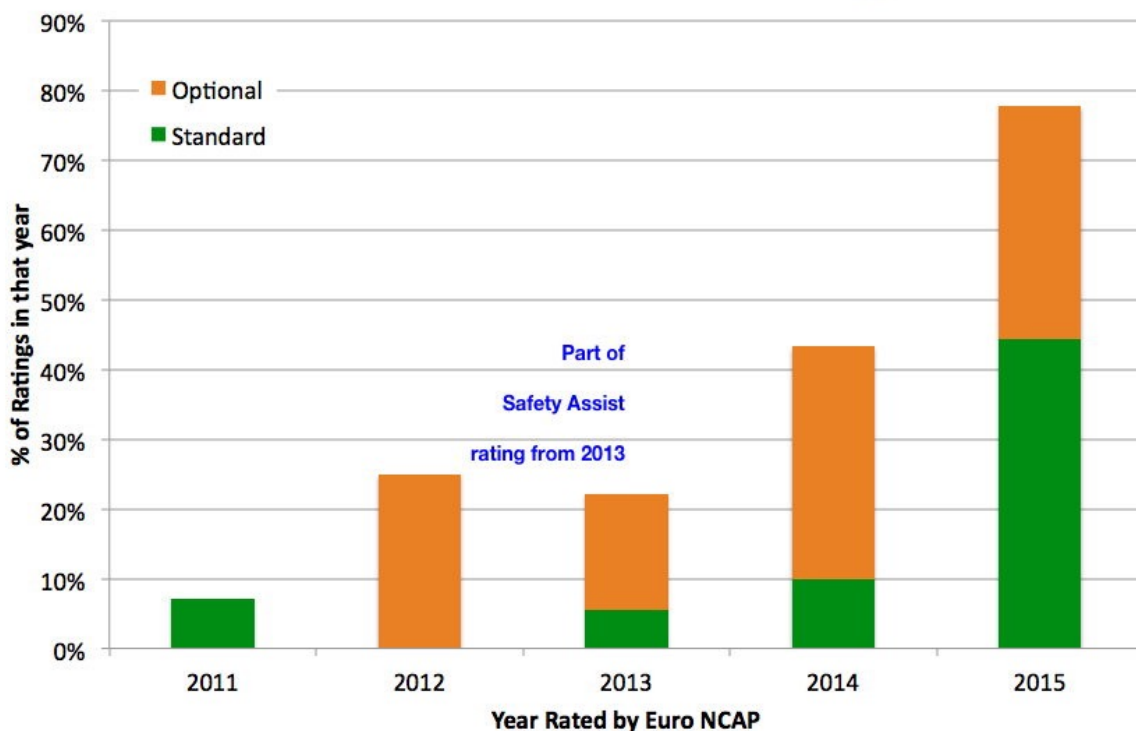


Pretensioners fitted in Europe **but not Australia**: Mazda2, Hyundai Tuscon, Honda HRV, Audi A4, Kia Optima, Honda Jazz, Kia Sportage, Mazda CX3, Mitsubishi Triton/L200, Nissan Navara, Suzuki Vitara, Suzuki Baleno, Holden Spark/Karl

UPTAKE OF SAFETY FEATURES

AEB - INTERURBAN

AEB Interurban for Euro NCAP Ratings



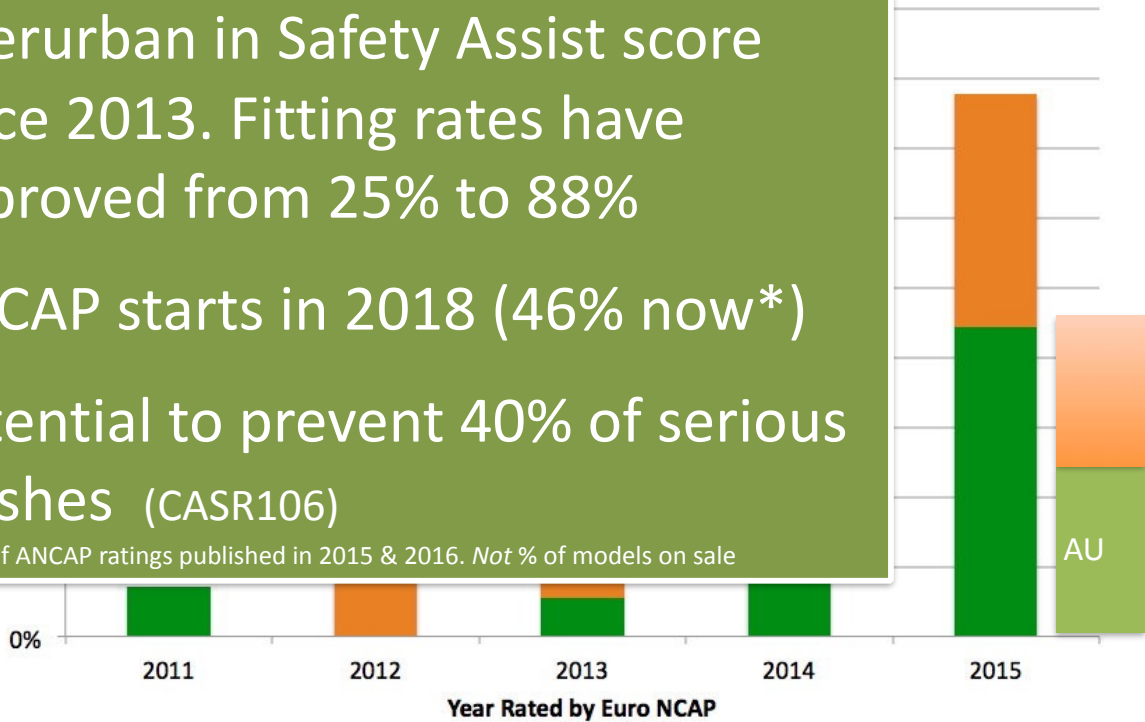
UPTAKE OF SAFETY FEATURES AEB - INTERURBAN

Euro NCAP has included AEB-interurban in Safety Assist score since 2013. Fitting rates have improved from 25% to 88%

ANCAP starts in 2018 (46% now*)

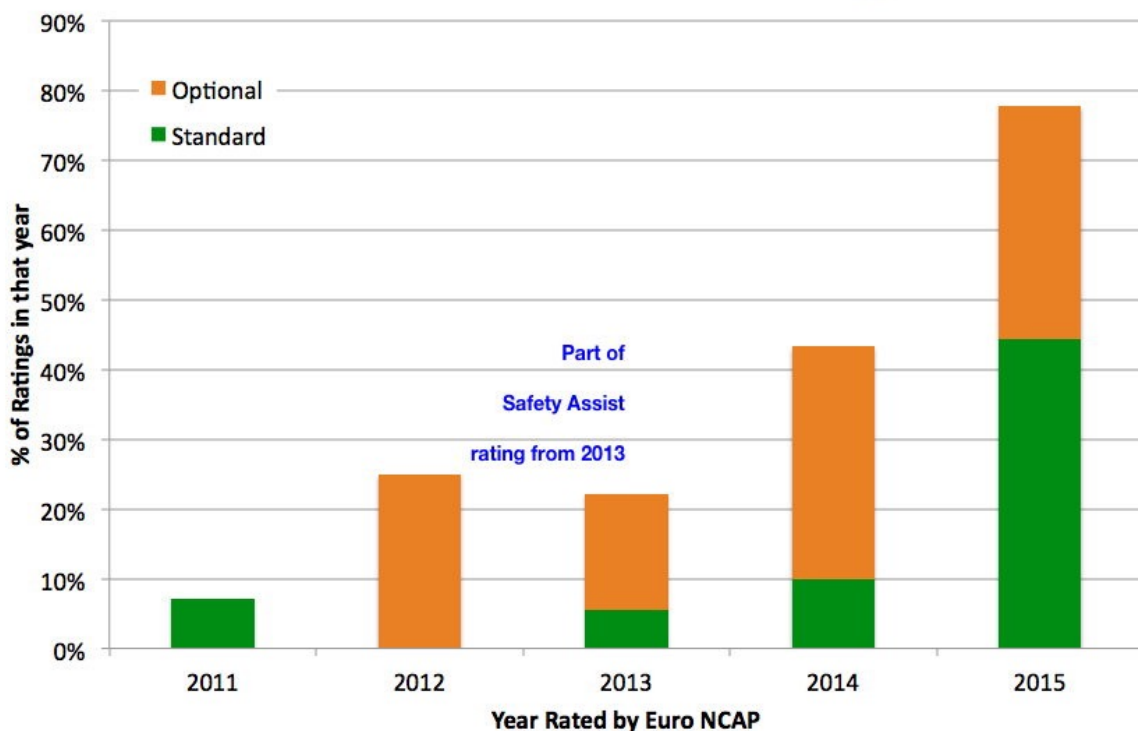
Potential to prevent 40% of serious crashes (CASR106)

* 46% of ANCAP ratings published in 2015 & 2016. *Not % of models on sale*



UPTAKE OF SAFETY FEATURES AEB - INTERURBAN

AEB Interurban for Euro NCAP Ratings



UPTAKE OF SAFETY FEATURES

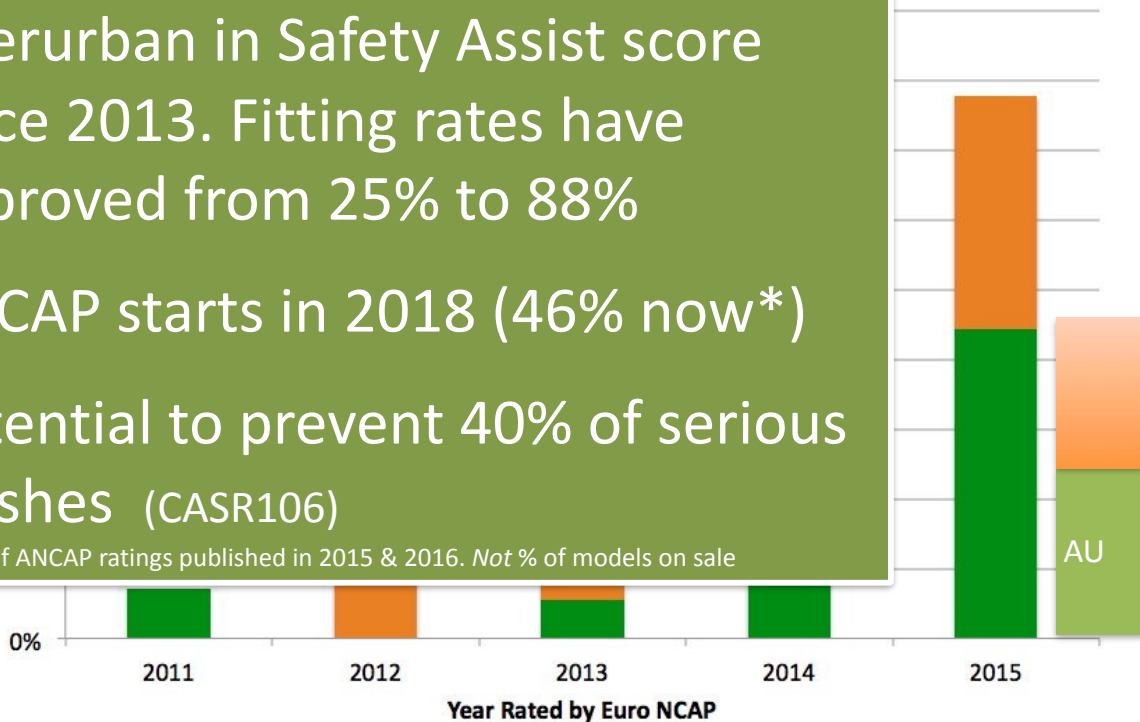
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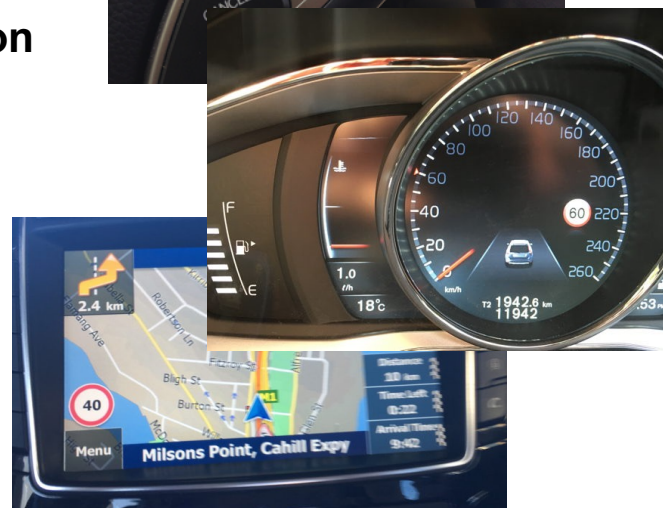
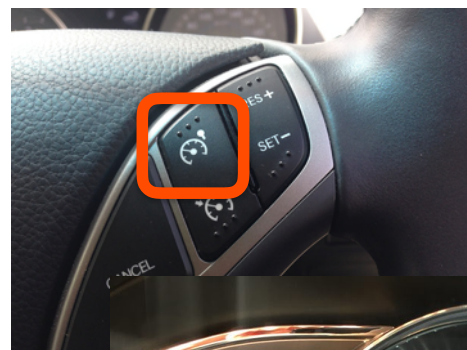
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UPTAKE OF SAFETY FEATURES

SPEED ASSIST SYSTEMS

- Manual Speed Assistance (MSA) - driver selects a speed for speed limiting
- Many vehicles use the same buttons as the cruise control system
- Speed Limit Information Function (SLIF) - displays current posted speed limit to driver
- Speed sign recognition and/or a digital map of speed limits, often part of a sat-nav system
- Intelligent Speed Assist (ISA) combines MSA & SLIF



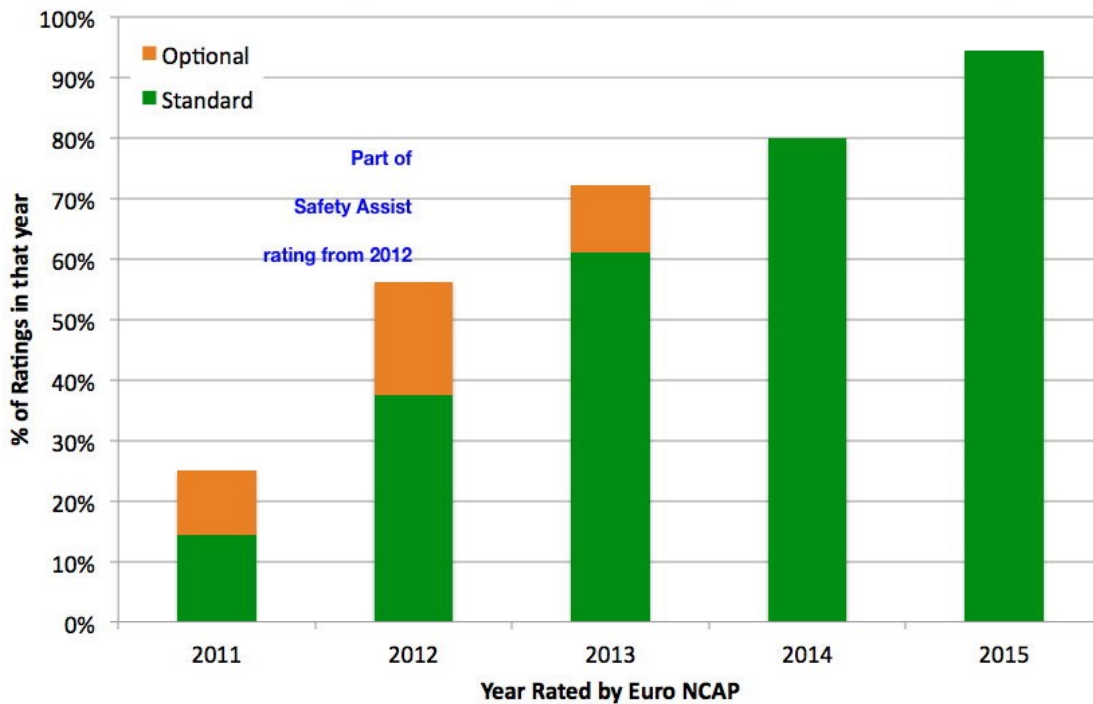
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SPEED ASSIST SYSTEMS MANUAL SPEED LIMITER



Manual Speed Assistance (speed limiter) for Euro NCAP Ratings



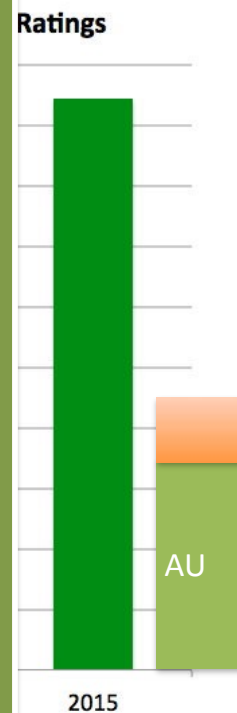
SPEED ASSIST SYSTEMS MANUAL SPEED LIMITER



Euro NCAP has included SAS in Safety Assist score since 2012. Fitting rates for a **manual speed limiter** have improved from 25% to 95%

ANCAP starts in 2018 (36% now)

Travelling at 5km/h over the speed limit doubles the risk of a serious crash (CASR093)



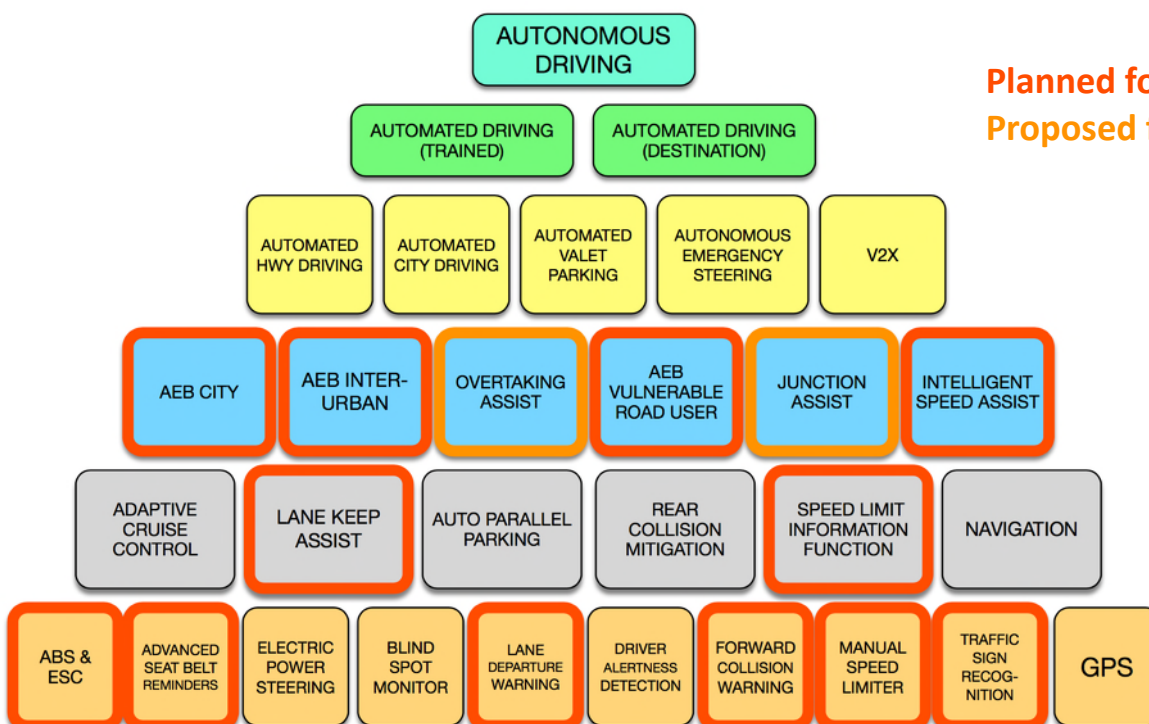
SAFETY ASSIST AND AUTONOMOUS CARS



The active safety systems that will soon be assessed by ANCAP are essential components of an autonomous car

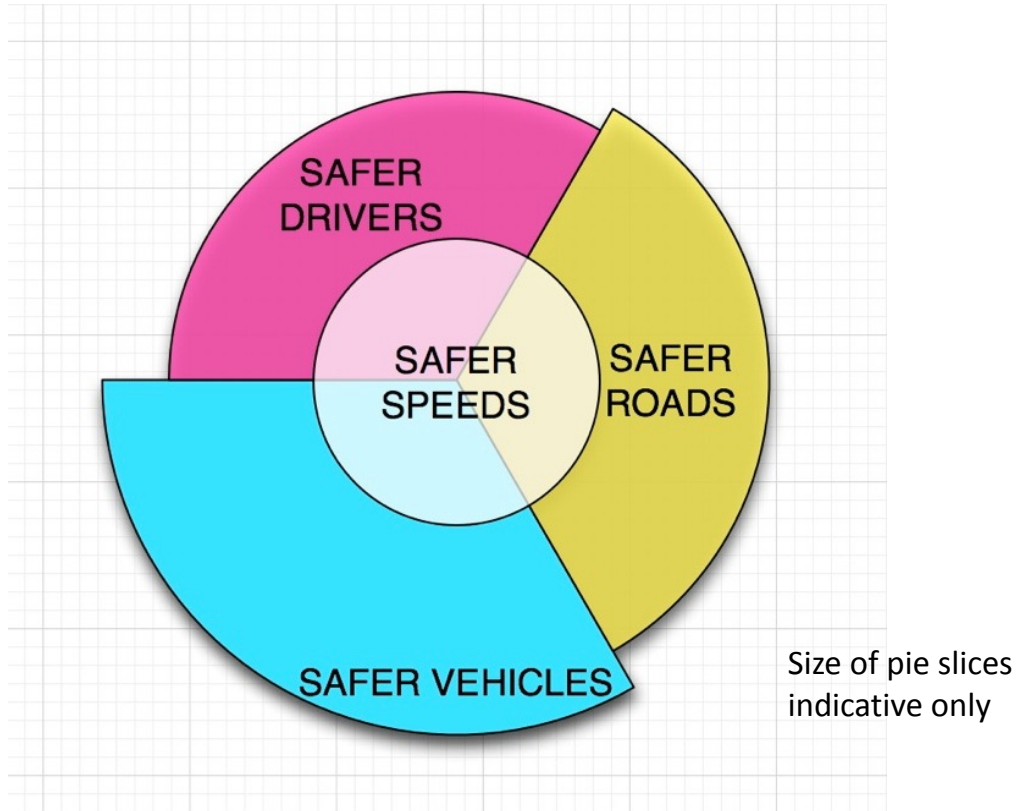


Building blocks to automated driving (and testing)



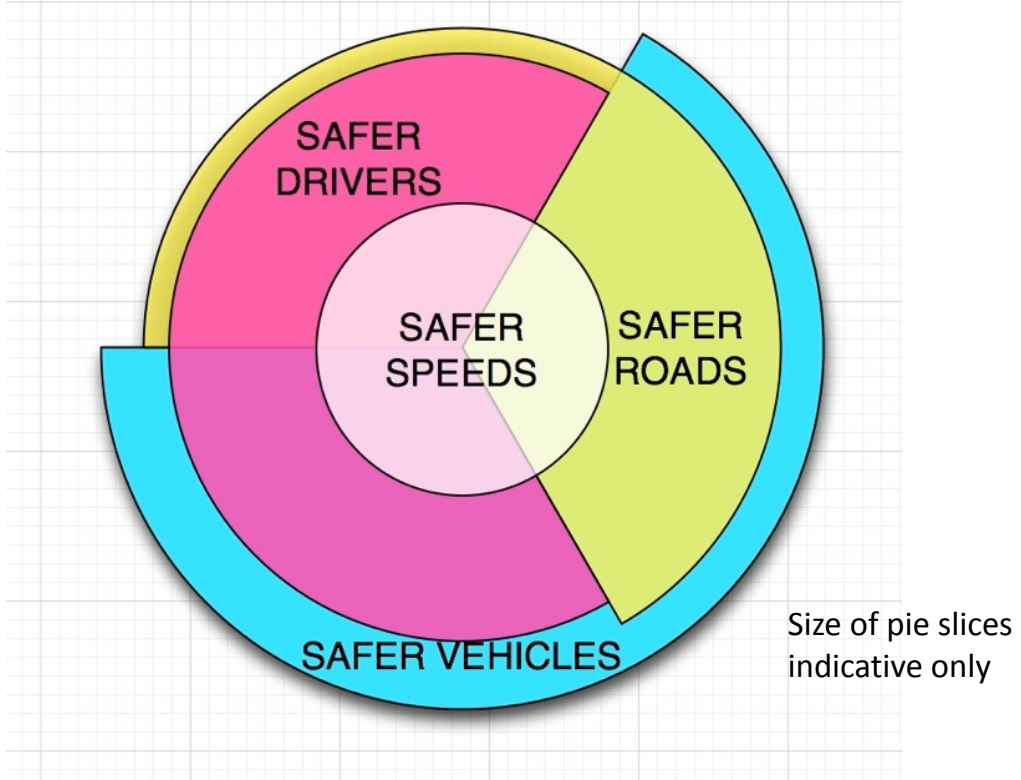
Planned for 2018
Proposed for 2020

SAFE SYSTEMS



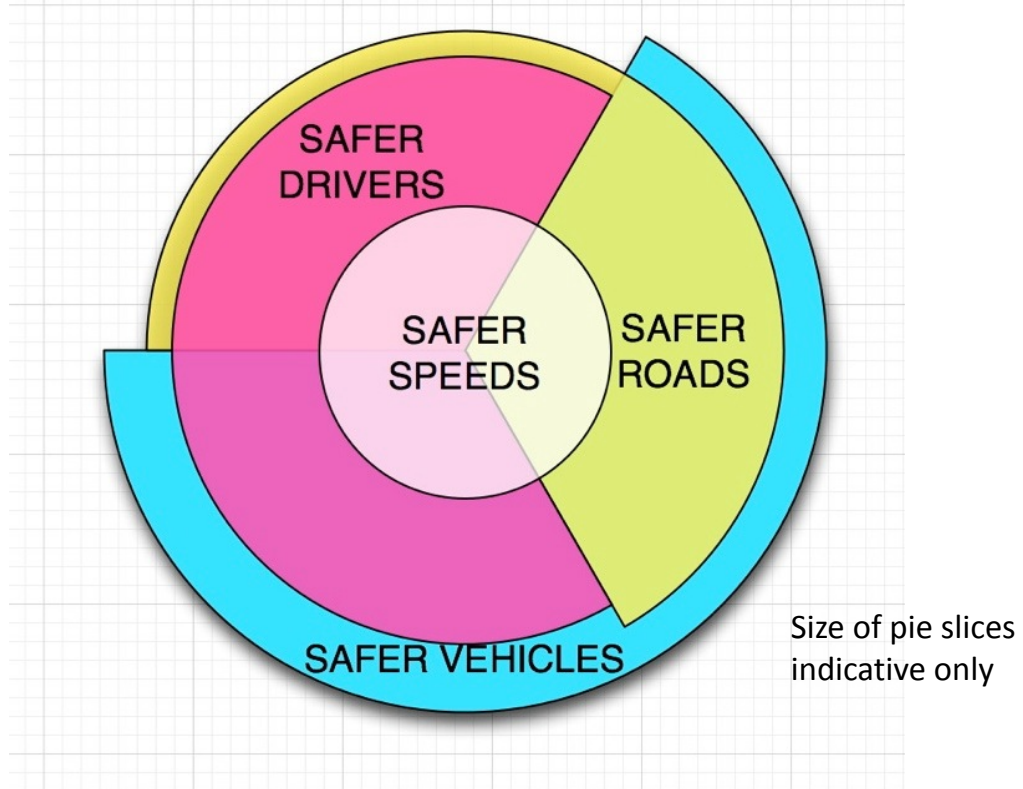
SAFE SYSTEMS

COUNTERMEASURES OVERLAP



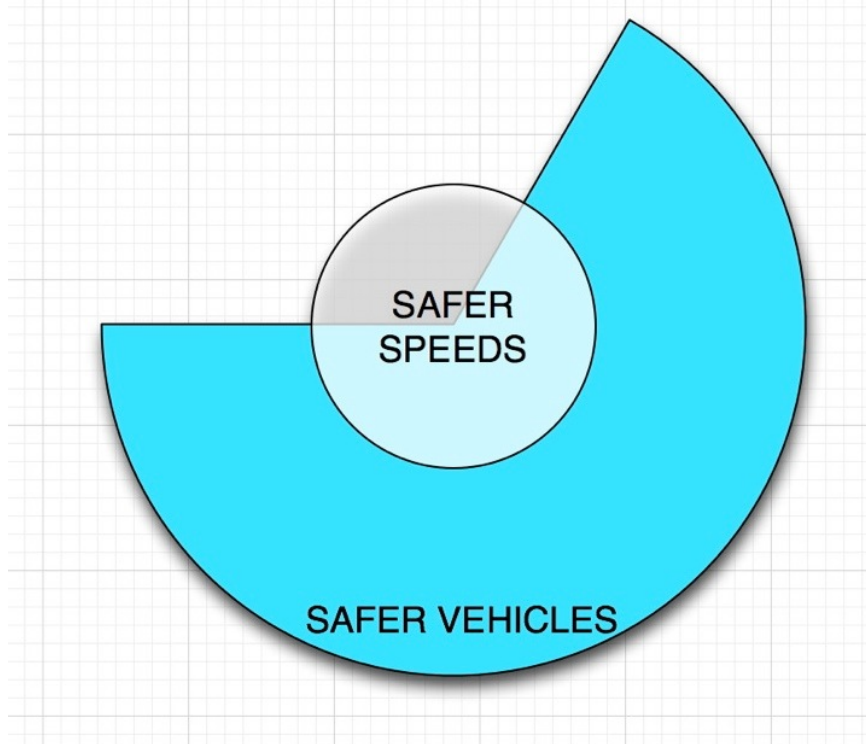
SAFE SYSTEMS

COUNTERMEASURES OVERLAP



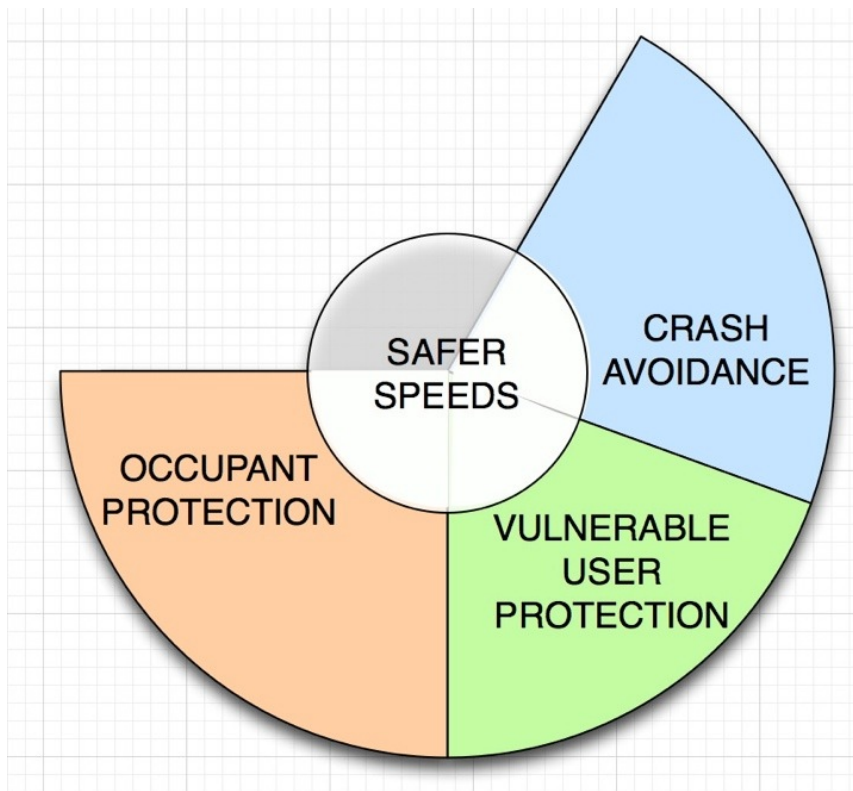
SAFE SYSTEMS

SAFER VEHICLES COULD POTENTIALLY ADDRESS ABOUT 2/3^{RDS} OF SERIOUS CRASHES



SAFE SYSTEMS

VEHICLE COUNTERMEASURES - ANCAP

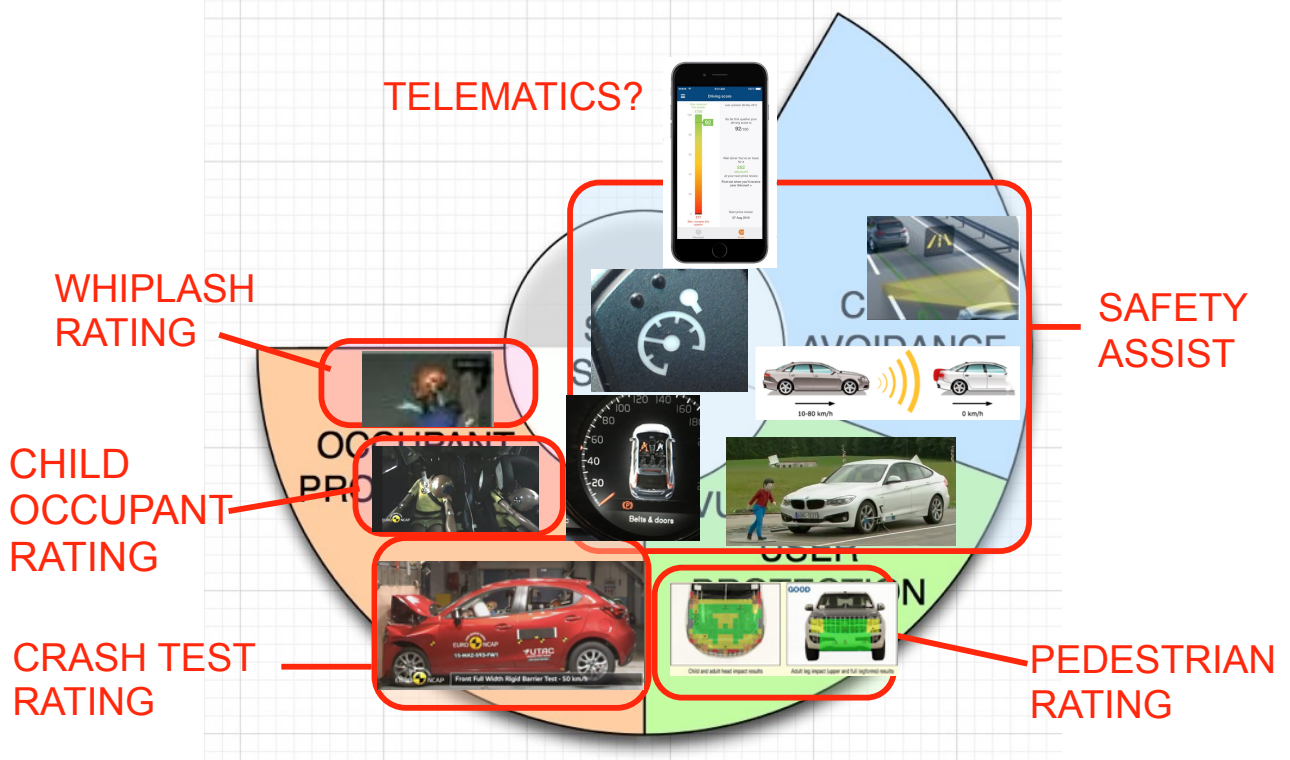


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SAFE SYSTEMS

VEHICLE COUNTERMEASURES - ANCAP

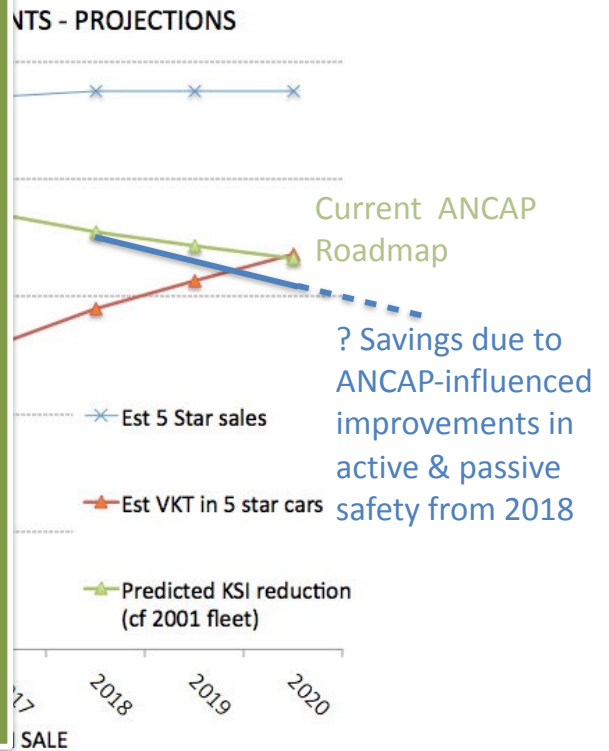


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FUTURE VEHICLE SAFETY 2018+

- ANCAP from 2018...
- Tougher crash tests
 - Small occupants
 - Rear seat occupants
 - Smart restraint systems
 - Speed assist systems
 - AEB - city, interurban, pedestrians & cyclists
 - Lane support systems
 - Other safety assist



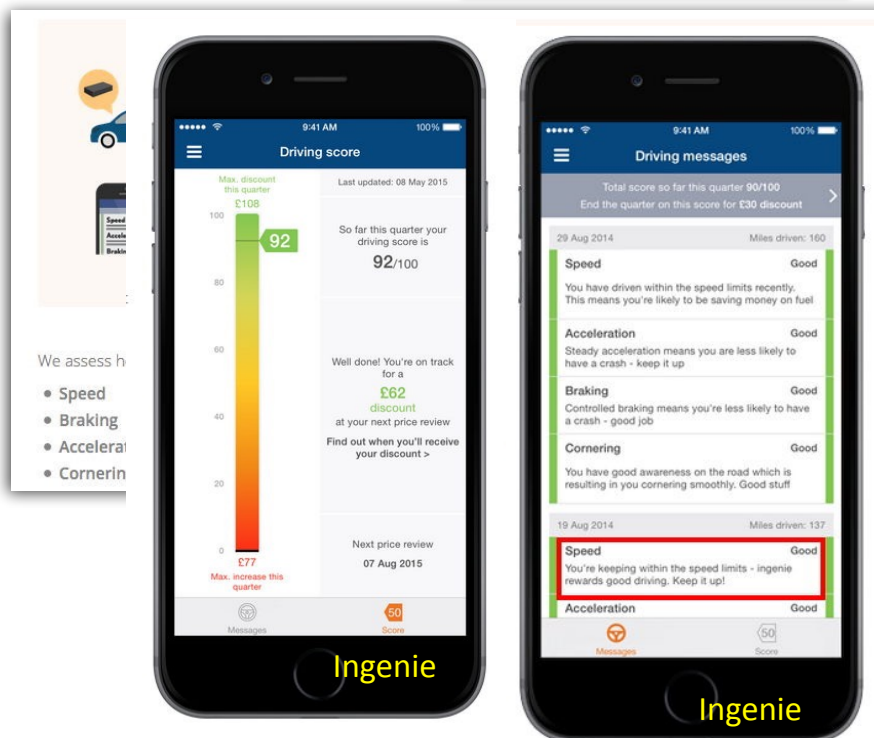
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BEYOND NCAP - TELEMATICS? PAY-HOW-YOU-DRIVE INSURANCE

Note: Presenter's opinion
Not ANCAP policy

- Some UK insurers now offer substantial premium discounts for drivers who install a "black box" to show they are driving safely
- One fleet reports 47% reduction in crashes (ETSC 2016)
- Could be particularly effective for young drivers (Greaves 2011, Stigson 2013)



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