



ANCAP: INFLUENCING VEHICLE SAFETY

NATIONAL PUBLIC SECTOR FLEET MANAGERS CONFERENCE
GLENELG, SA

MARK TERRELL
CHIEF TECHNICAL OFFICER
11 OCTOBER 2019



VISION

Safe vehicles for all.

MISSION

Work with members and partners to eliminate road trauma through independent assessment, market influence and consumer advocacy.

WHAT IS ANCAP?

ANCAP is an **independent, non-regulatory, consumer information** organisation:

- undertake crash testing & safety assessments and easily comparable vehicle safety ratings for consumers.
- encourage vehicle brands to include a higher level of safety in their vehicles.

Vehicles are tested & awarded an ANCAP safety rating between 0 to 5 stars.

The Australian Government's Australian Design Rules (ADRs) specify minimum **regulatory** requirements. ANCAP requirements are **higher** than ADRs.

ANCAP is complementary to regulation.

Since foundation, ANCAP has leveraged its success from its strong and dedicated membership. ANCAP's ability to effect market change and communicate its messages to a wide base of stakeholders is a direct result of its solid member backing and their continued support.

Supported by

twenty three

member organisations across
Australia & New Zealand.



Australian
Automobile
Association



New Zealand



For the better



Tasmanian
Government



Northern
Territory
Government



Queensland
Government



NZ TRANSPORT AGENCY
WAKA KOTAHĪ



Department of
Transport



Australian Government



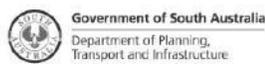
ACT
Government
Justice and Community Safety



ROAD SAFETY
COMMISSION



NSW
GOVERNMENT
Transport
for NSW

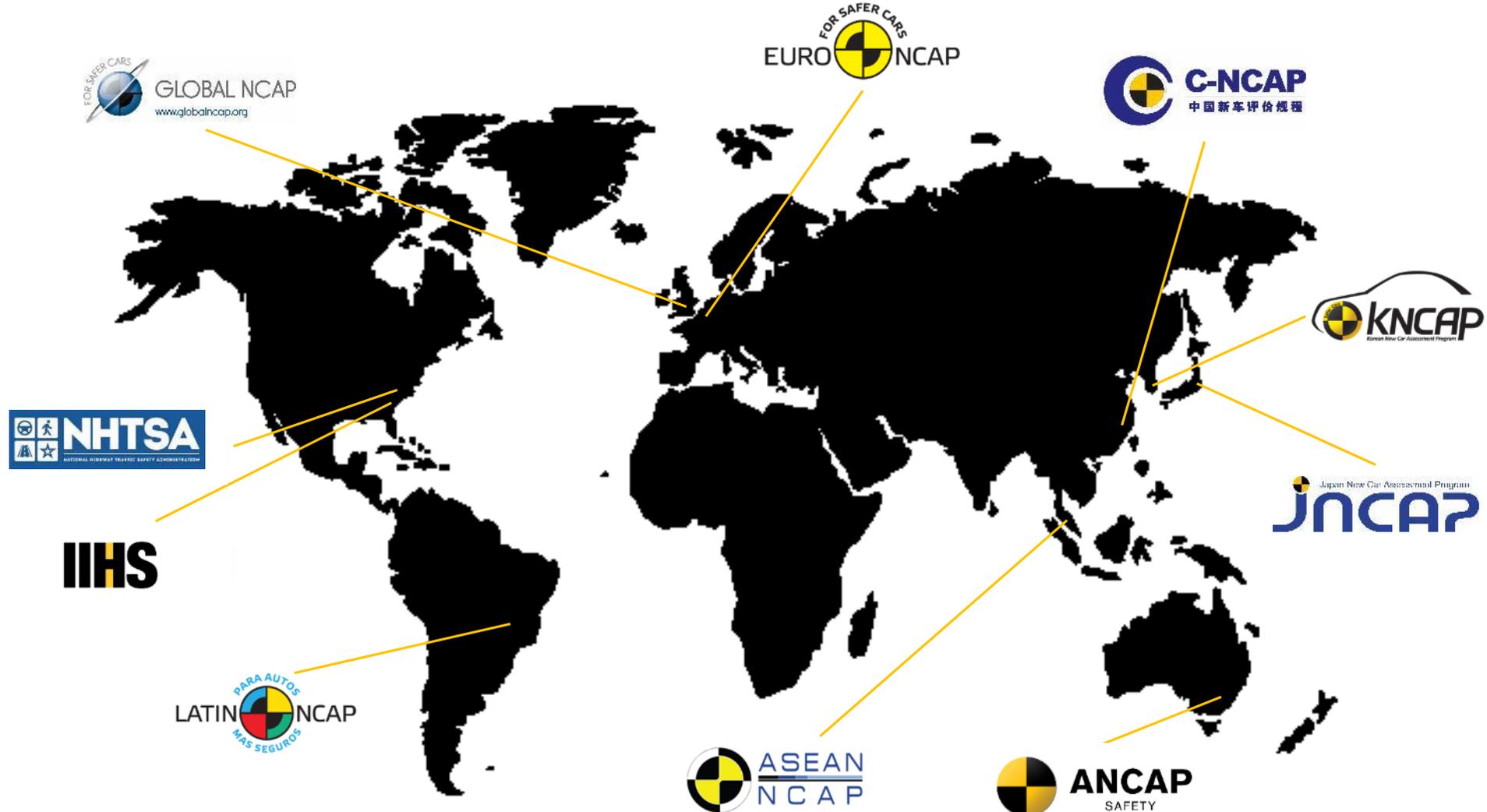


Government of South Australia
Department of Planning,
Transport and Infrastructure



vicroads

NCAPs AROUND THE WORLD



VEHICLE SAFETY IMPROVEMENTS



1990s
AUS: >10 deaths per 100,000
NZ: 21 deaths per 100,000





TODAY

AUS: 5 deaths per 100,000
NZ: 8 deaths per 100,000



“The employer has a duty to take all reasonably practicable steps to protect the health and safety at work of the employer’s employees.

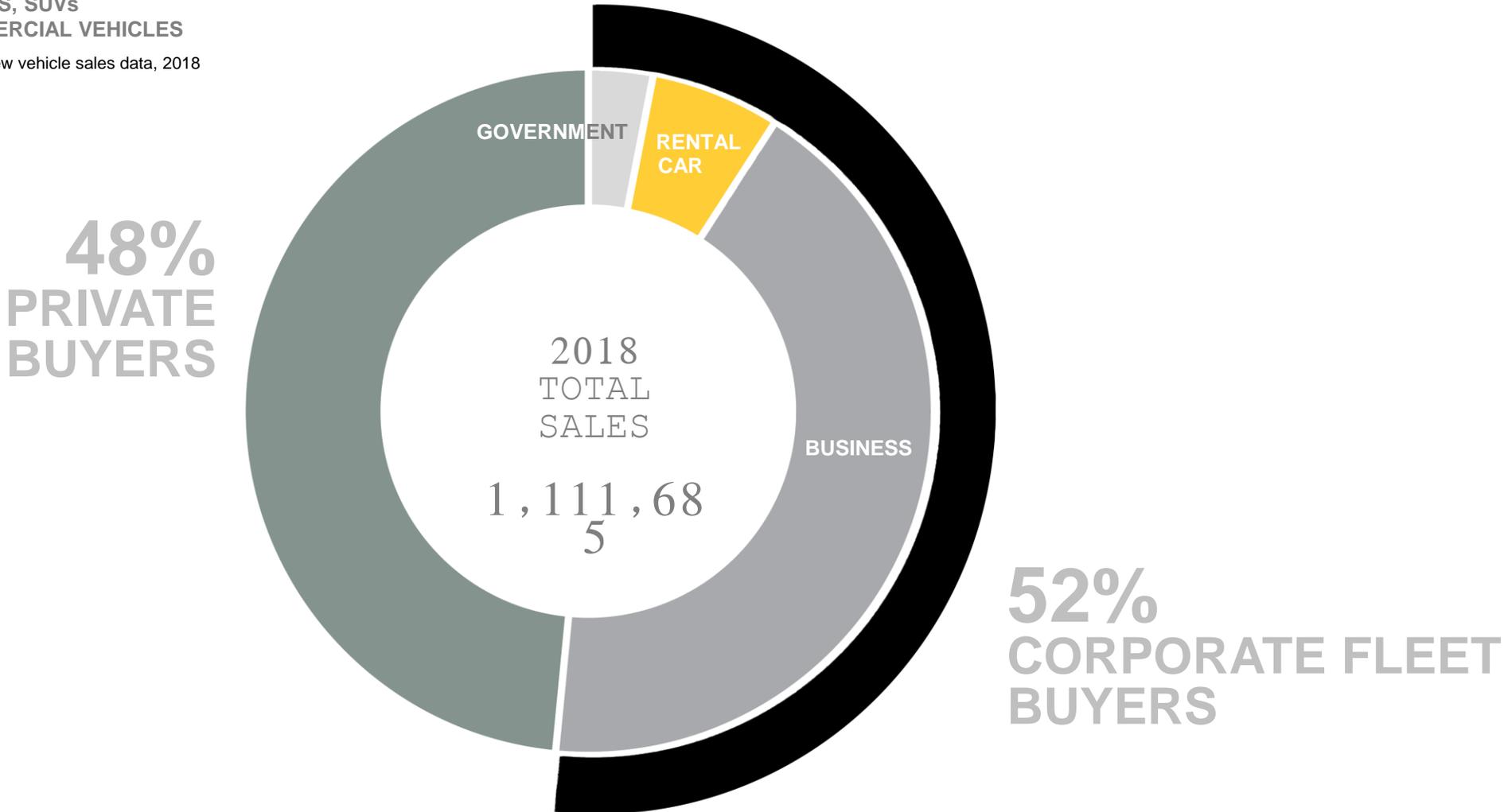
*This extends to protecting the health and safety of employees driving work vehicles for work purposes.
The vehicle is a workplace.”*

FLEET INFLUENCE

A CRITICAL MARKET TO INFLUENCE

PASSENGER CARS, SUVs
and LIGHT COMMERCIAL VEHICLES

ANCAP and VFACTS new vehicle sales data, 2018



5 STAR PURCHASING / USE POLICIES



5 STAR POLICIES



MARKET CHANGE & INCREASED SAFETY

AFFECTING CHANGE

2012

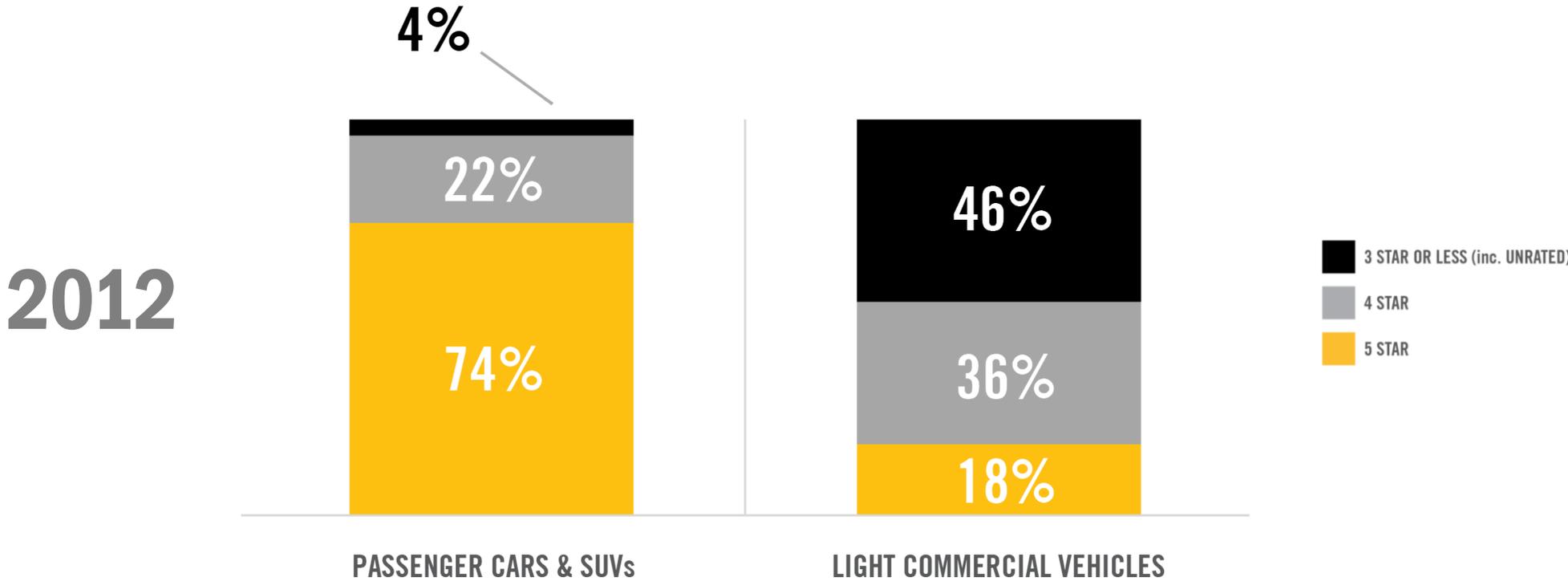
5.8 deaths
per 100,000 population



2018

4.6 deaths
per 100,000 population

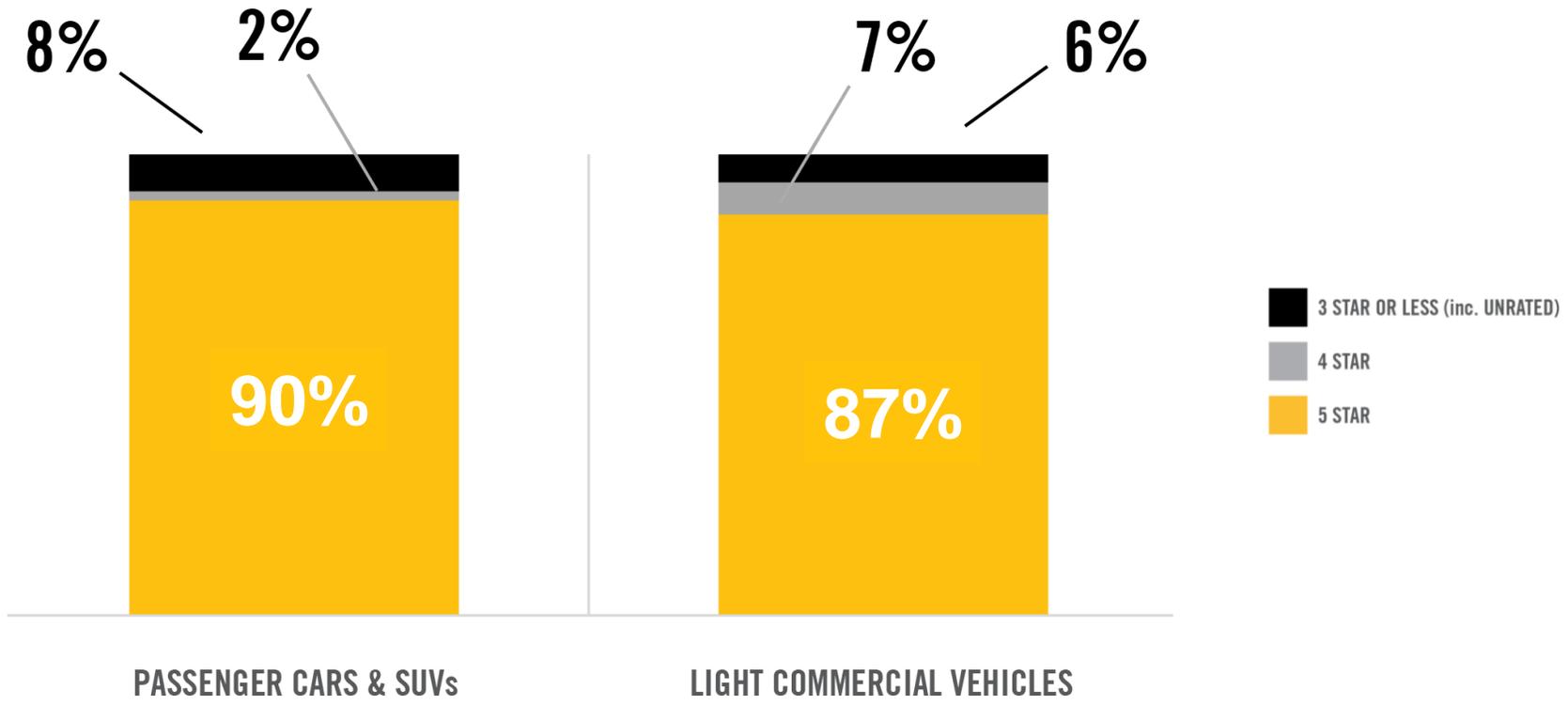
AFFECTING CHANGE: Light Commercials



Source: ANCAP and VFACTS new vehicle sales data, 2012

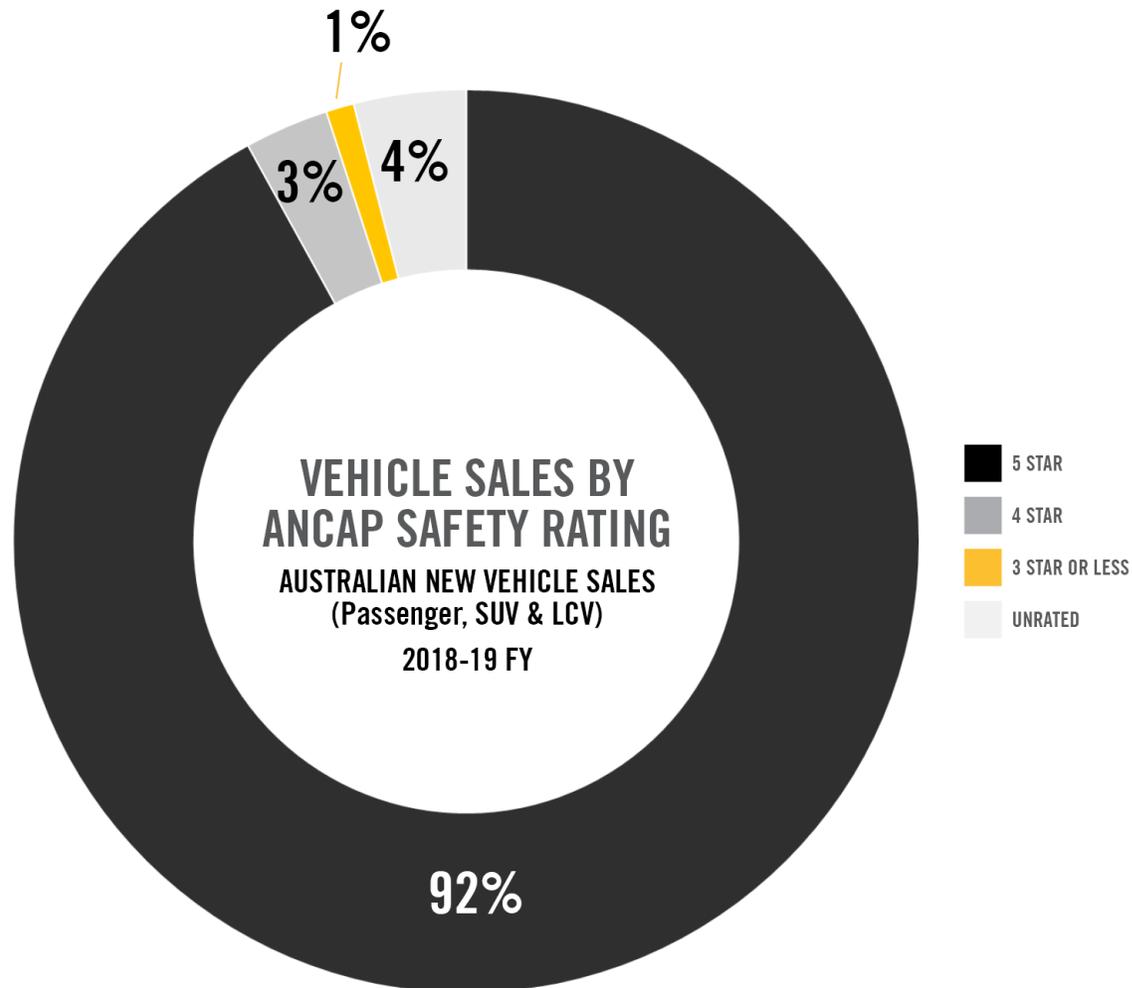
AFFECTING CHANGE: Light Commercial

2018



Source: ANCAP and VFACTS new vehicle sales data, 2018

MARKET COVERAGE



Source: ANCAP and VFACTS new vehicle sales data, 2018

COMMUNITY EXPECTATIONS

COMMUNITY EXPECTATION



ANCAP biennial consumer awareness & brand tracking survey, October 2018

5
star safety
IS THE
expected
standard

COMMUNITY SENTIMENT



ANCAP biennial consumer awareness & brand tracking survey, October 2018

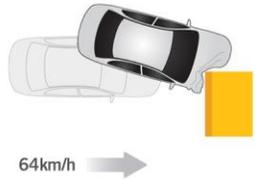
80%
of consumers consider
ALL NEW CARS
to be **SAFE**

OUR CURRENT TEST REGIME

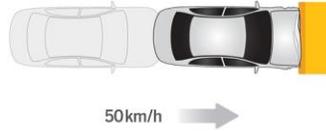
2018-2019 TEST REGIME



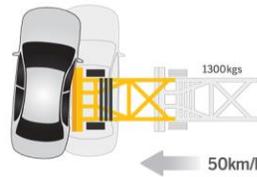
PHYSICAL CRASH TESTS



FRONTAL OFFSET TEST



FULL WIDTH FRONTAL TEST



SIDE IMPACT TEST



OBLIQUE POLE TEST



PEDESTRIAN TEST



WHIPLASH TEST

SAFETY ASSIST TESTS



AUTONOMOUS EMERGENCY BRAKING



LANE SUPPORT SYSTEMS



SPEED ASSISTANCE SYSTEMS

**LEVEL 2
AUTOMATION**

64
KM/H



FRONTAL OFFSET TEST

50
KM/H

MAZDA CX-5
21 MARCH 2018



18-MAZ-5002-FW2

FULL WIDTH FRONTAL TEST

SIDE IMPACT TEST



Crashlab
THE SAFE SOLUTION

B18007

MAZDA CX-5

ANCAP
SAFETY

18-MAZ-5002-MD1
06 MAR 2018

50
KM/H

32
KM/H



OBLIQUE POLE TEST

PEDESTRIAN PROTECTION

ANCAP
SAFETY
18-TOY-5005-2P

40
KM/H

16
KM/H



ANCAP

Crash testing for safety

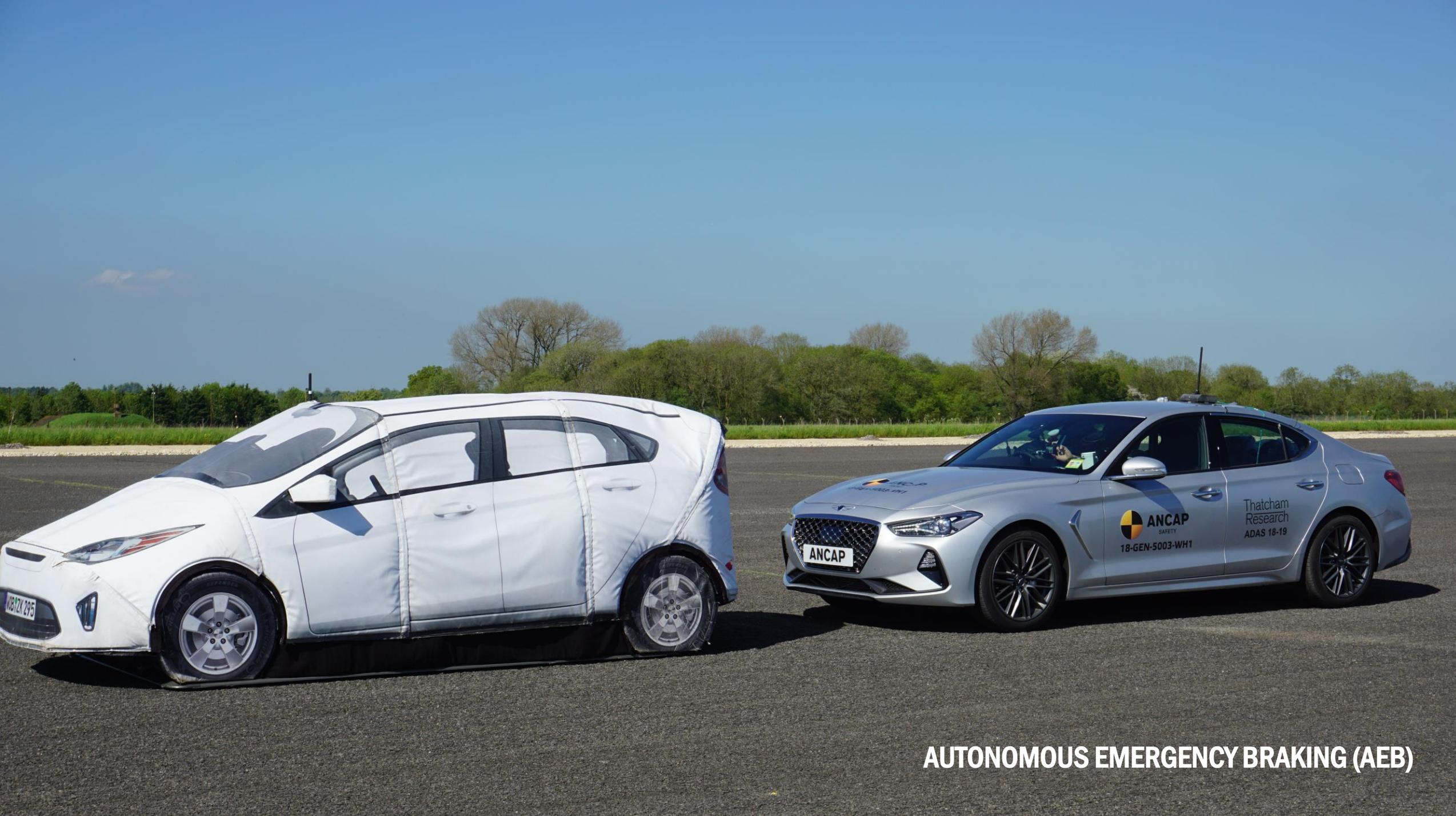


Insurance Institute for
Highway Safety

2015 Mazda
MX-5
SER16017



WHIPLASH TEST



AUTONOMOUS EMERGENCY BRAKING (AEB)



LANE SUPPORT SYSTEMS (LSS)



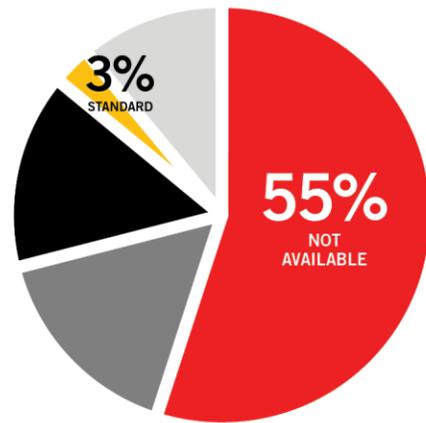
SPEED ASSISTANCE SYSTEMS (SAS)



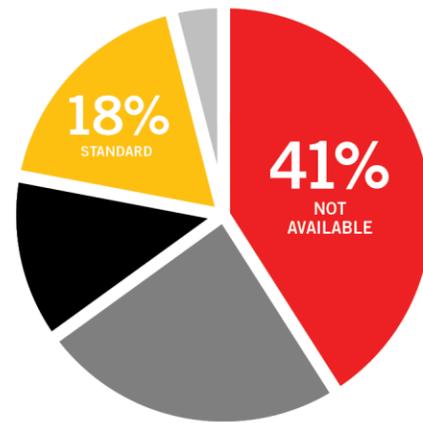
ANCAP
SAFETY



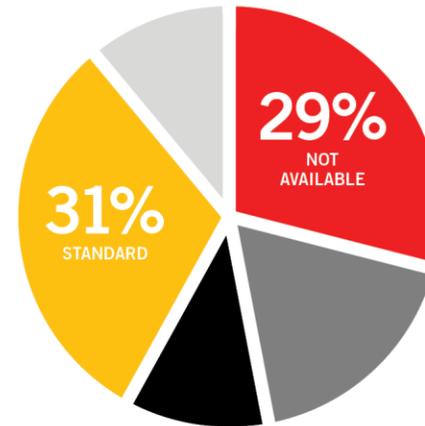
FITMENT OF AUTONOMOUS EMERGENCY BRAKING



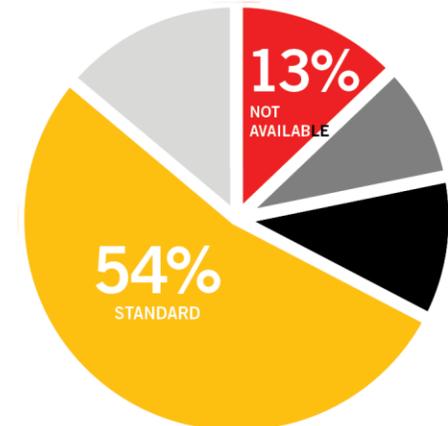
DECEMBER 2015



JUNE 2017



MARCH 2018



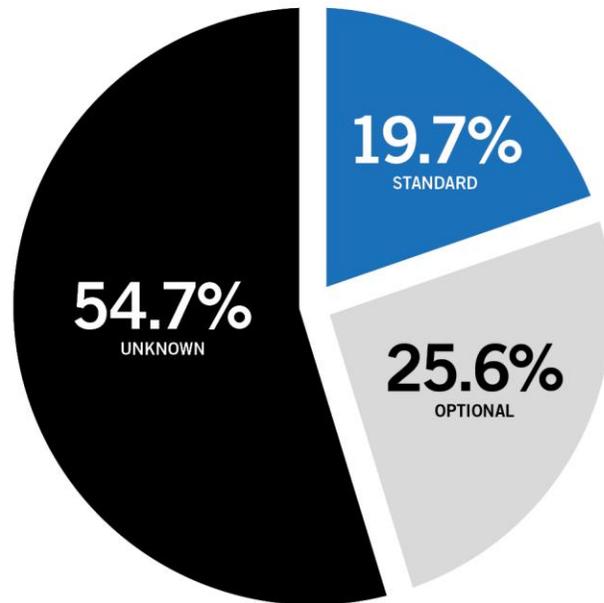
JULY 2019

■ STANDARD
 ■ NOT AVAILABLE
 ■ AVAILABLE ON HIGHER VARIANTS
 ■ OPTIONAL
 ■ UNKNOWN

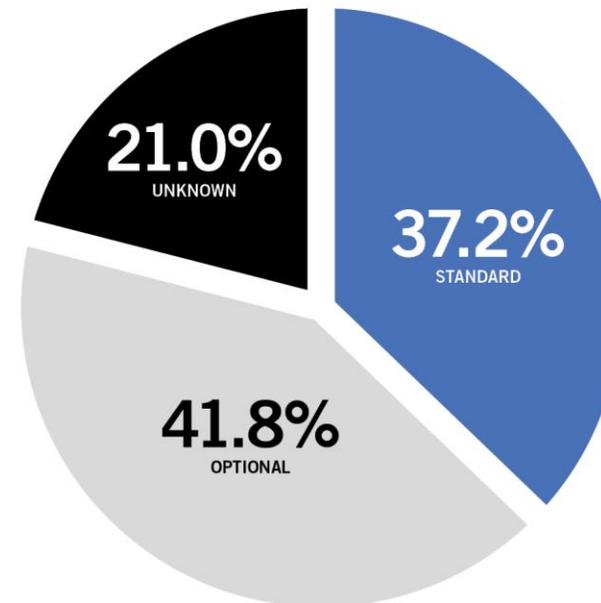
EFFECTIVENESS OF AEB

- **55% reduction in police-reported crashes.**
Insurance Institute for Highway Safety (IIHS) & Highway Loss Data Institute (HLDI), USA, 2018
- **38% reduction in real world rear end crashes.**
ANCAP, Euro NCAP, DoIRD research by B. Fildes, 2015
- **27% reduction in fatal crashes.**
Euro NCAP, 2012
- Reduces the risk of real world rear end crashes in metro areas by **54-57%**, and in all areas by **35-41%**.
ICROBI study by M. Rizzi, A.Kullgren, C. Tingvall, 2014

FITMENT OF AUTONOMOUS EMERGENCY BRAKING



LIGHT GOODS VEHICLES
(3.5T - 8T GVM)



MEDIUM GOODS VEHICLES
(>8T GVM, <39T GCM)

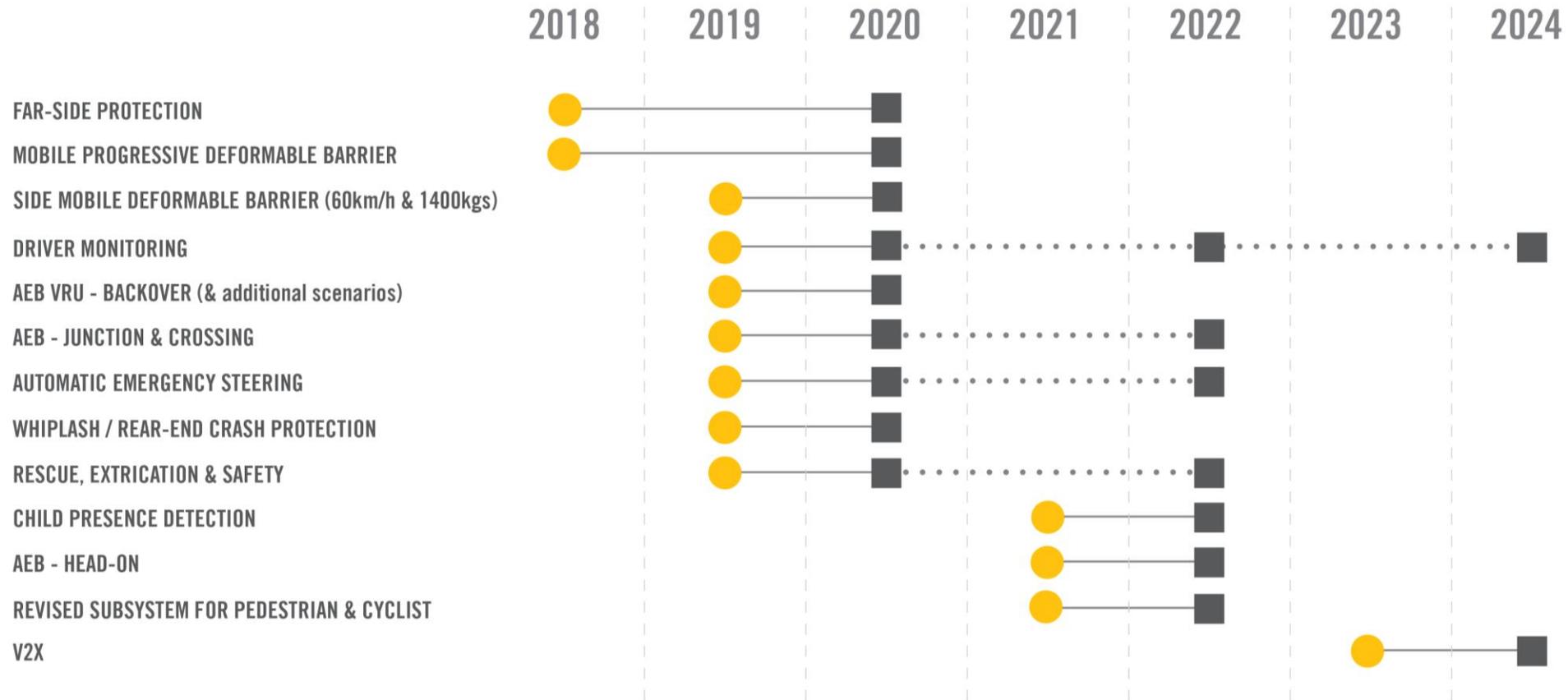
EFFECTIVENESS OF LSS

- **Lane support systems** target severe crash types such as **head-on** and **run-off road** crashes.
- Penetration is relatively low at present, however some early research has shown positive real world benefits.
- Preliminary research has estimated that LDW / LKA systems reduce **head-on** and **single vehicle** crashes by **30%**.

Sternlund, Strandroth et al, 2017

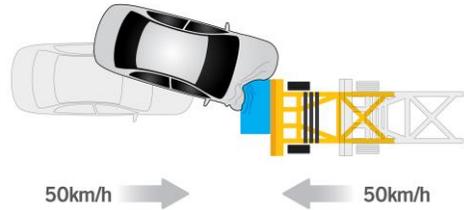
A LOOK AHEAD TO 2020

WHAT IS COMING?

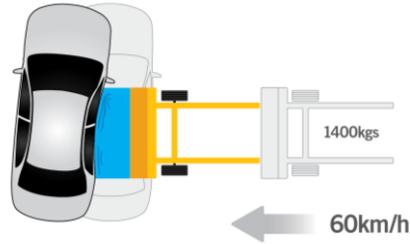


WHAT IS COMING IN 2020?

PHYSICAL CRASH TESTS



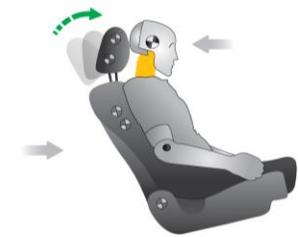
Mobile Progressive Deformable Barrier (MPDB)



Mobile Deformable Barrier (MDB)

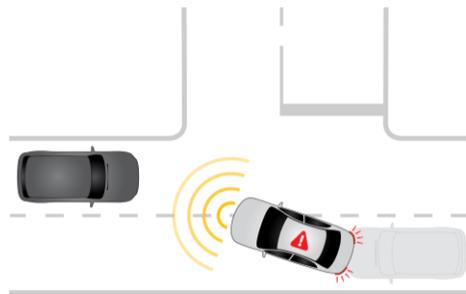


Far-Side Occupant Protection

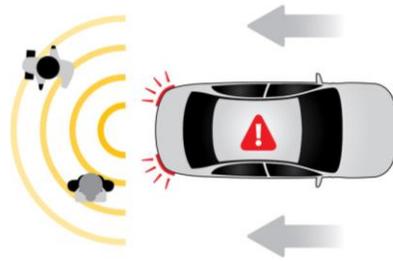


Whiplash / Rear-End Protection

SAFETY ASSIST / OTHER



AEB Junction



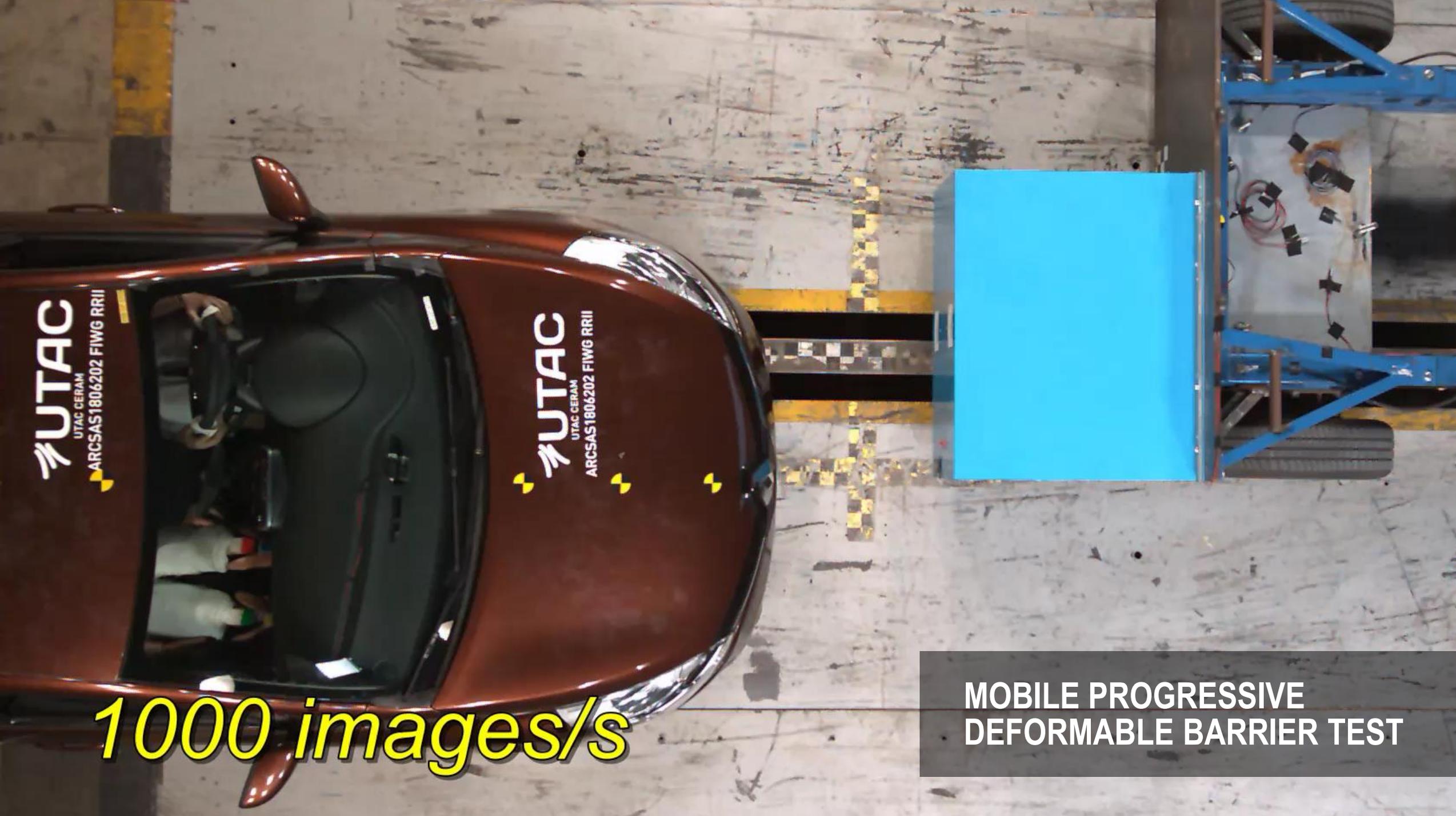
AEB Backover



Driver Monitoring (Fatigue / Impairment)



Rescue, Extrication & Safety



UTAC
UTAC CERAM
ARCSAS1806202 FIWG RRII

UTAC
UTAC CERAM
ARCSAS1806202 FIWG RRII

1000 images/s

**MOBILE PROGRESSIVE
DEFORMABLE BARRIER TEST**

-0.020

50
KM/H



UTAC
UTAC CERAM
ARCSAS1806202 FIWG RRII

1000 images/s

60
KM/H

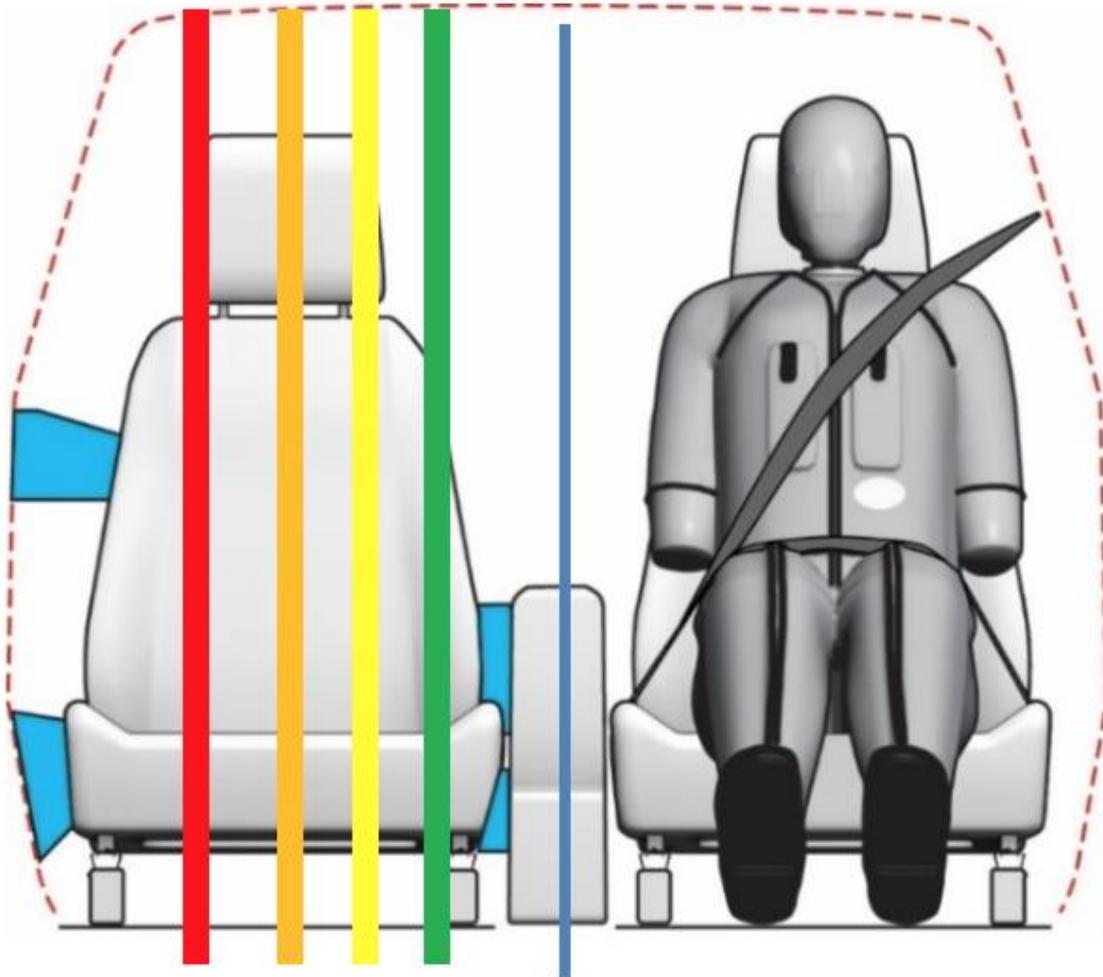


APV-T
TECH CENTRE

APV-T
TECH CENTRE

ANCAP
18 MAZ-3592-4052
MAZDA CX-5
28 JUNE 2019

FAR SIDE IMPACT



- **75° sled test**
- **Pole & side impact load cases**
- **Conducted by manufacturer**
- **Measures occupant-to-occupant interaction**
- **Countermeasure (centre airbag)**
- **2 x WorldSID dummies**



FAR SIDE IMPACT TEST

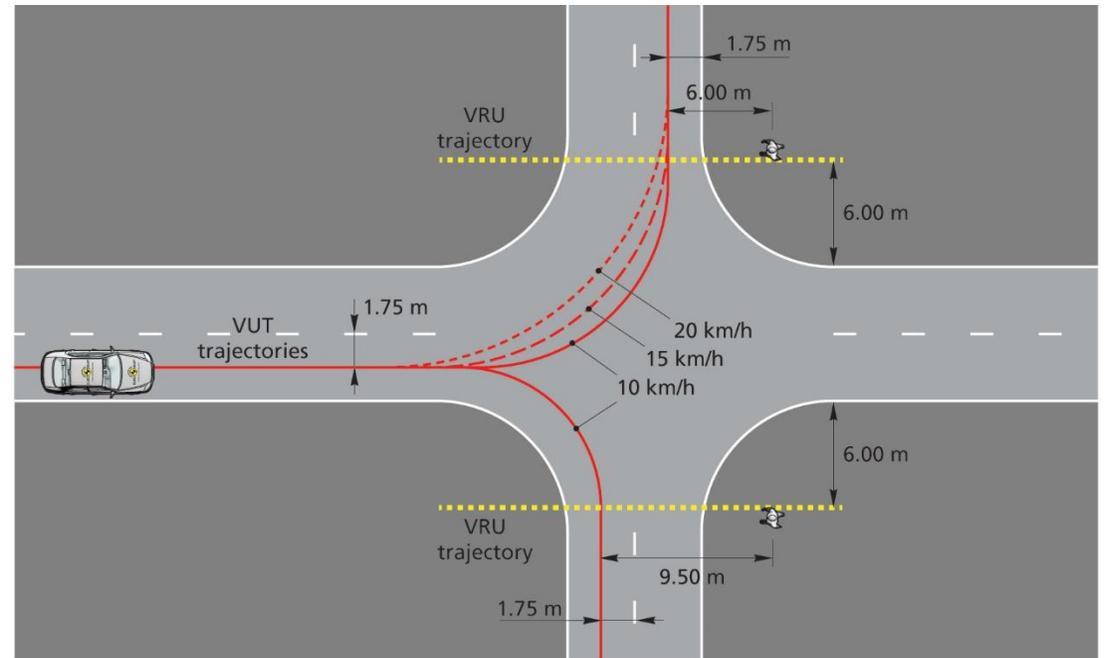
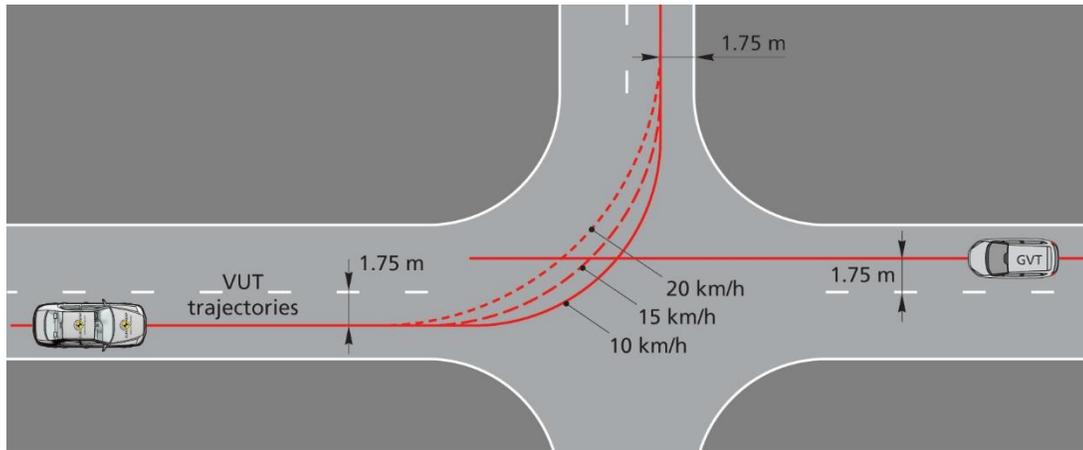
S17120107

32-50
KM/H



0.000

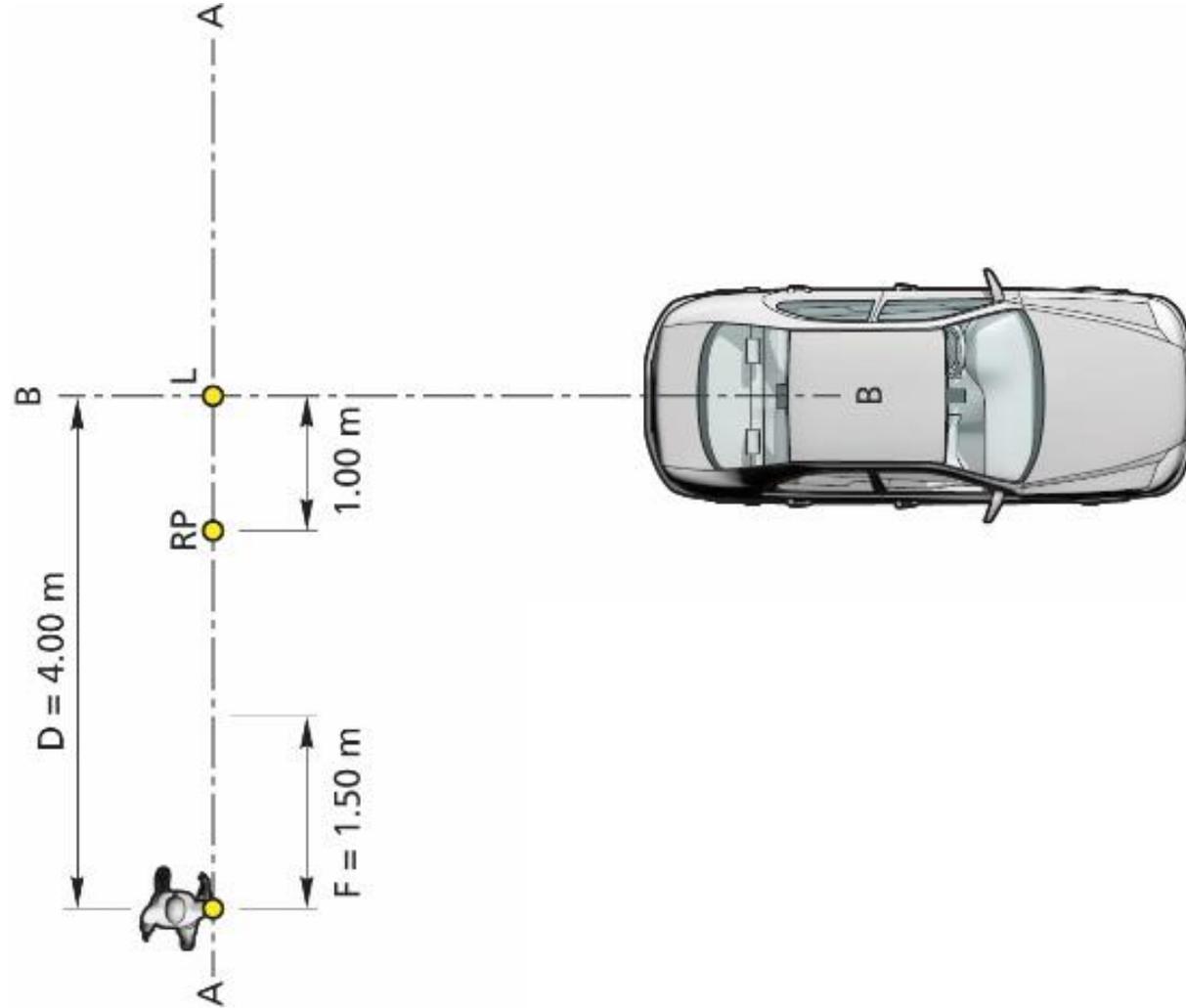
AEB JUNCTION





AEB JUNCTION

AEB BACKOVER



DRIVER MONITORING

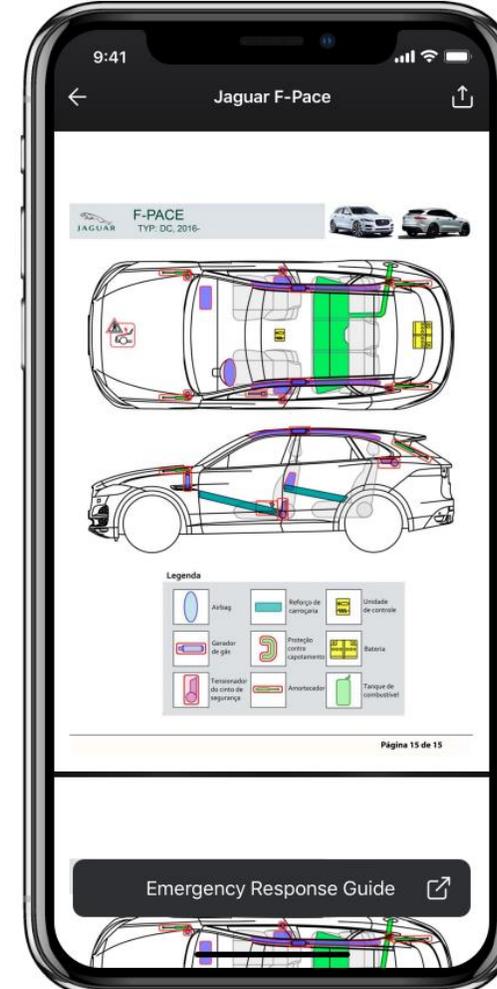
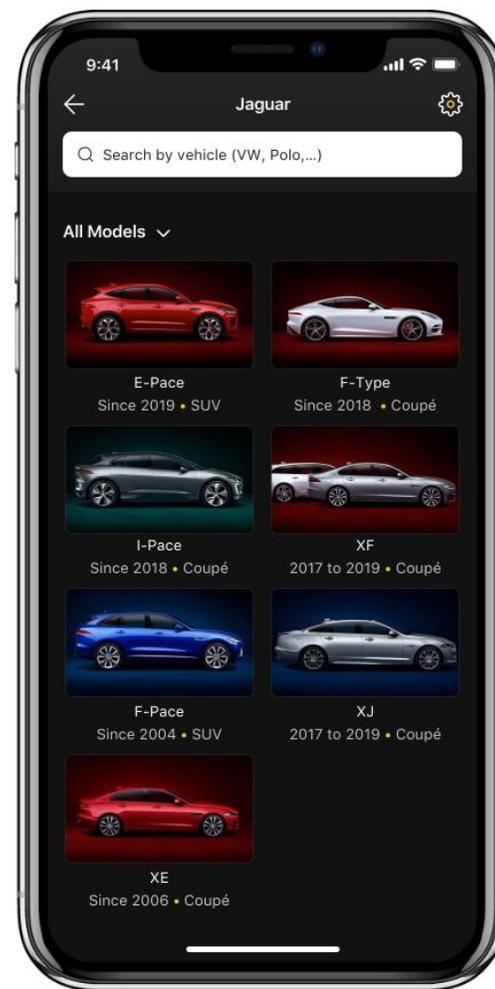
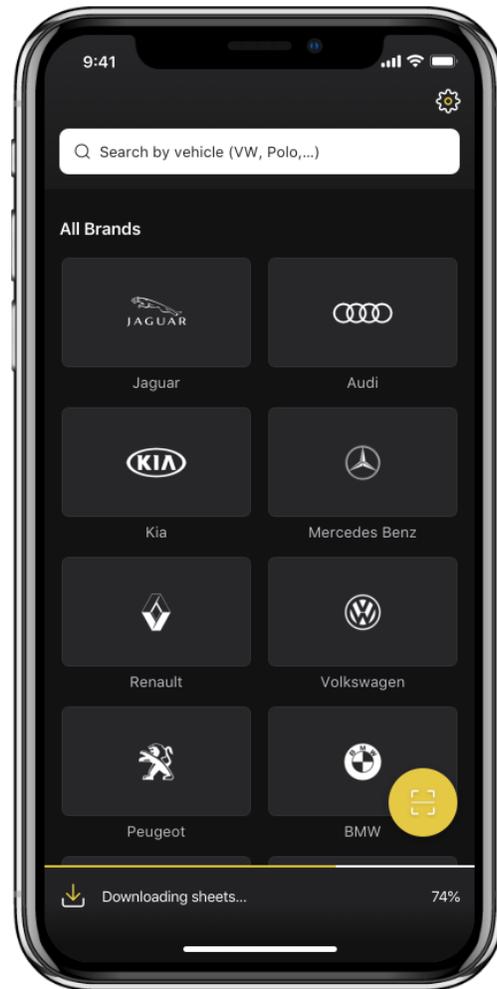
Driver Attentive

Eye openness: **95%**
Blinks per minute: **16**
Gaze vector: **10°**, **3°**

Roll: **3°**

Roll: **-3°**

RESCUE, EXTRICATION & SAFETY



- Rescue cards
- Door opening
- Multi-collision brake

A TECHNICAL PROCESS DISTILLED

PILLARS OF ASSESSMENT



ADULT OCCUPANT PROTECTION

	2018	2019	2020
Offset frontal impact	8	8	8
Full-width frontal impact	8	8	8
Side impact (MDB)	8	8	6
Side impact (pole)	8	8	6
Far side impact	-	-	4
Whiplash (front)	1.5	1.5	3
Whiplash (rear)	0.5	0.5	1
AEB City	4	4	-
Rescue & extrication	-	-	2
MAXIMUM SCORE	38	38	38

MINIMUM %	2018	2019	2020
★★★★★	80%	80%	80%
★★★★☆	70%	70%	70%
★★★☆☆	60%	60%	60%
★★☆☆☆	50%	50%	50%
★☆☆☆☆	40%	40%	40%



CHILD OCCUPANT PROTECTION

	2018	2019	2020
Dynamic tests (frontal & side)	24	24	24
CRS installation	12	12	12
Vehicle-based assessment	13	13	13
MAXIMUM SCORE	49	49	49

MINIMUM %	2018	2019	2020
★★★★★	80%	80%	80%
★★★★☆	70%	70%	70%
★★★☆☆	60%	60%	60%
★★☆☆☆	50%	50%	50%
★☆☆☆☆	40%	40%	40%



VULNERABLE ROAD USER PROTECTION

	2018	2019	2020
Head impact	24	24	24
Upper leg impact	6	6	6
Lower leg impact	6	6	6
AEB VRU (pedestrian)	6	6	7
AEB VRU (cyclist)	6	6	9
AEB VRU (backover)	-	-	2
MAXIMUM SCORE	48	48	54

MINIMUM %	2018	2019	2020
★★★★★	60%	60%	60%
★★★★☆	50%	50%	50%
★★★☆☆	40%	40%	40%
★★☆☆☆	30%	30%	30%
★☆☆☆☆	20%	20%	20%



SAFETY ASSIST

	2018	2019	2020
Seat belt reminder	3	3	2
Occupant status	-	-	1
Speed assistance system	3	3	3
AEB Interurban / AES (C2C)	3	3	4
LDW / LKA / LSS	4	4	4
AEB Junction Assist	-	-	2
MAXIMUM SCORE	13	13	16

MINIMUM %	2018	2019	2020
★★★★★	70%	70%	70%
★★★★☆	60%	60%	60%
★★★☆☆	50%	50%	50%
★★☆☆☆	40%	40%	40%
★☆☆☆☆	30%	30%	30%

THE OVERALL STAR RATING OF A VEHICLE IS LIMITED BY ITS LOWEST PERFORMING AREA OF ASSESSMENT.

Vehicle brands acknowledge the 'value' and competitive advantage of a 5 star car.

With increasingly stringent criteria, 5 stars is not only possible, but expected.

**BRANDS ARE
KEEPING PACE**

WHAT SHOULD FLEETS LOOK FOR?

DATESTAMP IS KEY



PURCHASING RECOMMENDATION

IF PURCHASING IN 2019



IF PURCHASING IN 2020



PURCHASING RECOMMENDATION



ANCAP recommends fleets / commercial operators choose:

- 5 star rated vehicles
- with a 'datestamp' no more than three years old

Benefits:

- Provides a rolling purchasing range, taking advantage of broadening safety criteria.
- Ensures safety currency.
- Gives purchasing policies continued future relevance as new safety technologies are developed and offered in new vehicle models.
- 5 star policies help keep pressure on vehicle brands to maintain 5 star standards.

CORPORATE SOCIAL RESPONSIBILITY



5 star vehicle use / purchasing policies can play an instrumental role in:

- Improving road safety – reducing fatalities & serious injuries
- Reducing the age of the fleet
- Injecting vehicles with high safety specification into the market
- Offering affordable, near-new vehicles to the community
(on-sold to general consumers through used vehicle market at ‘end of life’)

**5 star vehicle use requirements are now
extending to GREY FLEETS
(i.e. those using a private vehicle for work purposes)**

ACCESSORIES & MODIFICATIONS

ACCESSORIES & MODIFICATIONS

- **ANCAP does not test vehicles with bullbars fitted.**
- **Fleet managers should continue to purchase 5 star rated vehicles.**
- **The fitting of bullbars and other accessories should be considered, together with operational requirements, in the context of safety. Ensure they do not affect the safety performance of the vehicle:**
 - structure / occupant protection
 - airbag deployment
 - rollover propensity
 - collision avoidance systems (AEB and lane support systems / sensors)
 - pedestrian & cyclist protection



ANCAP
SAFETY