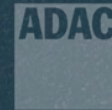
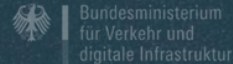


FOR SAFER CARS

EURO NCAP





Euro NCAP – the roadmap to 2020

Quick refresh

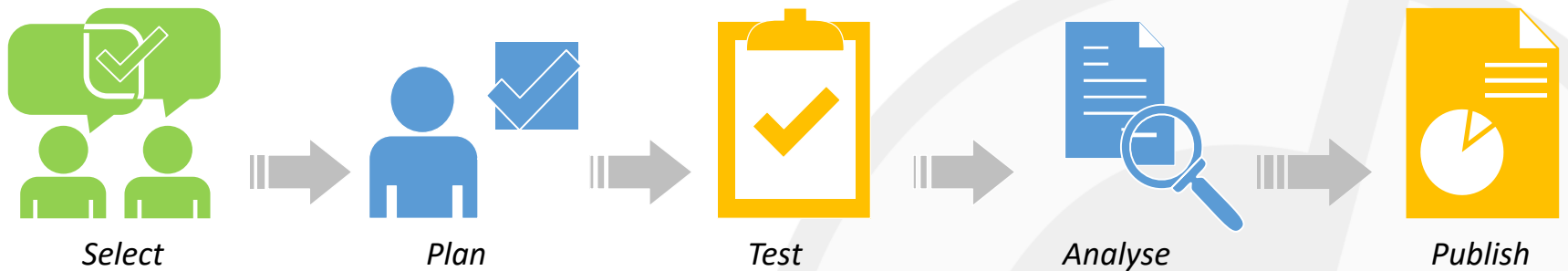
- Launched in 1997
- Involves 12 member organisations and 8 test laboratories accross Europe
- Publishes star rating to promote excellence and innovation in vehicle safety



Validating Car Safety

- Euro NCAP safety tests cover passenger cars of all categories, as well as family vans

The same workflow is followed for each model



- Sponsorship
- Specification
- Car sourcing

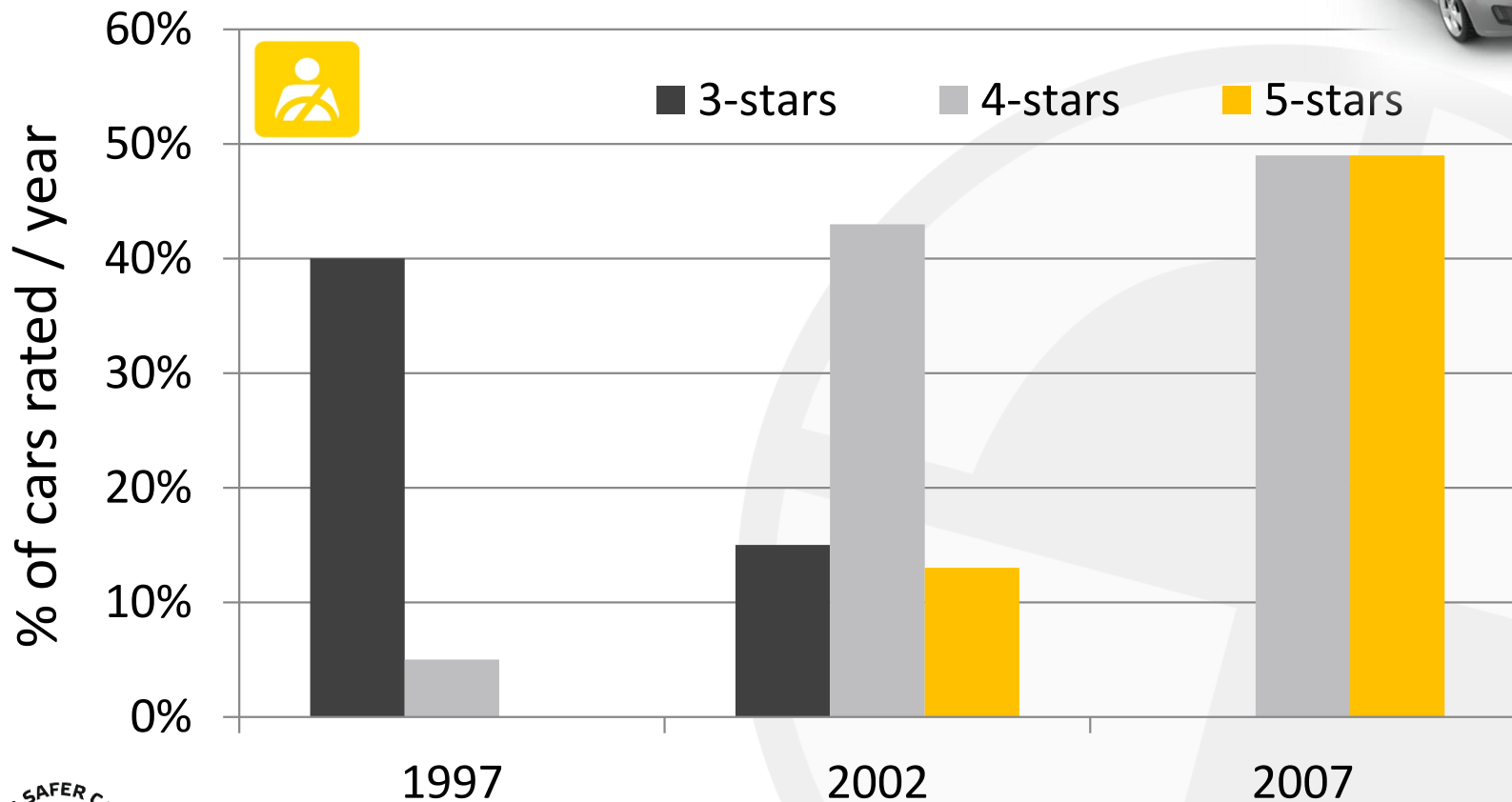
- Laboratory selection
- Testing to protocol
- Post-crash inspection

- Reporting
- Auditing
- OEM meeting

- Publication
- Data pack
- Social media
























Improving crash protection

- The evolution in crash ratings illustrates major improvements in structures and restraints



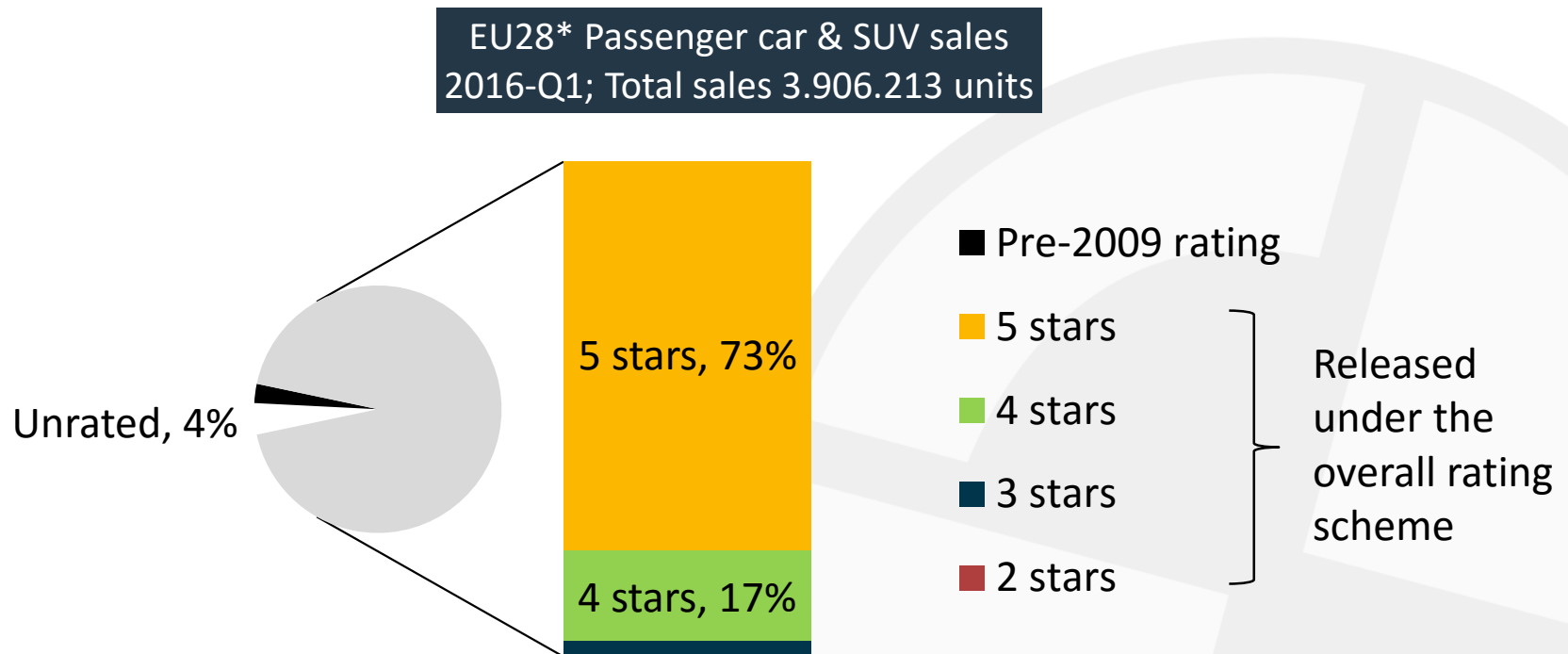
Embracing avoidance technology

- The overall safety rating (from 2009) combines crash protection, crash avoidance and driver assistance

+	Safe driving	Manoeuvring	Crash Avoidance	Crash Mitigation				
			 AEB City	 Whiplash	 Offset-Deformable Barrier	 Full Width Rigid Barrier	 Side Mobile Barrier	 Side Pole
				 CRS Installation Check	 CRS Performance	 Vehicle Provisions		
				 Head Impact	 Upper Leg Impact	 Lower Leg Impact		
	 Speed Assistance	 Lane Support	 AEB Interurban	 ESC	 Seatbelt Reminders			

New car sales by rating

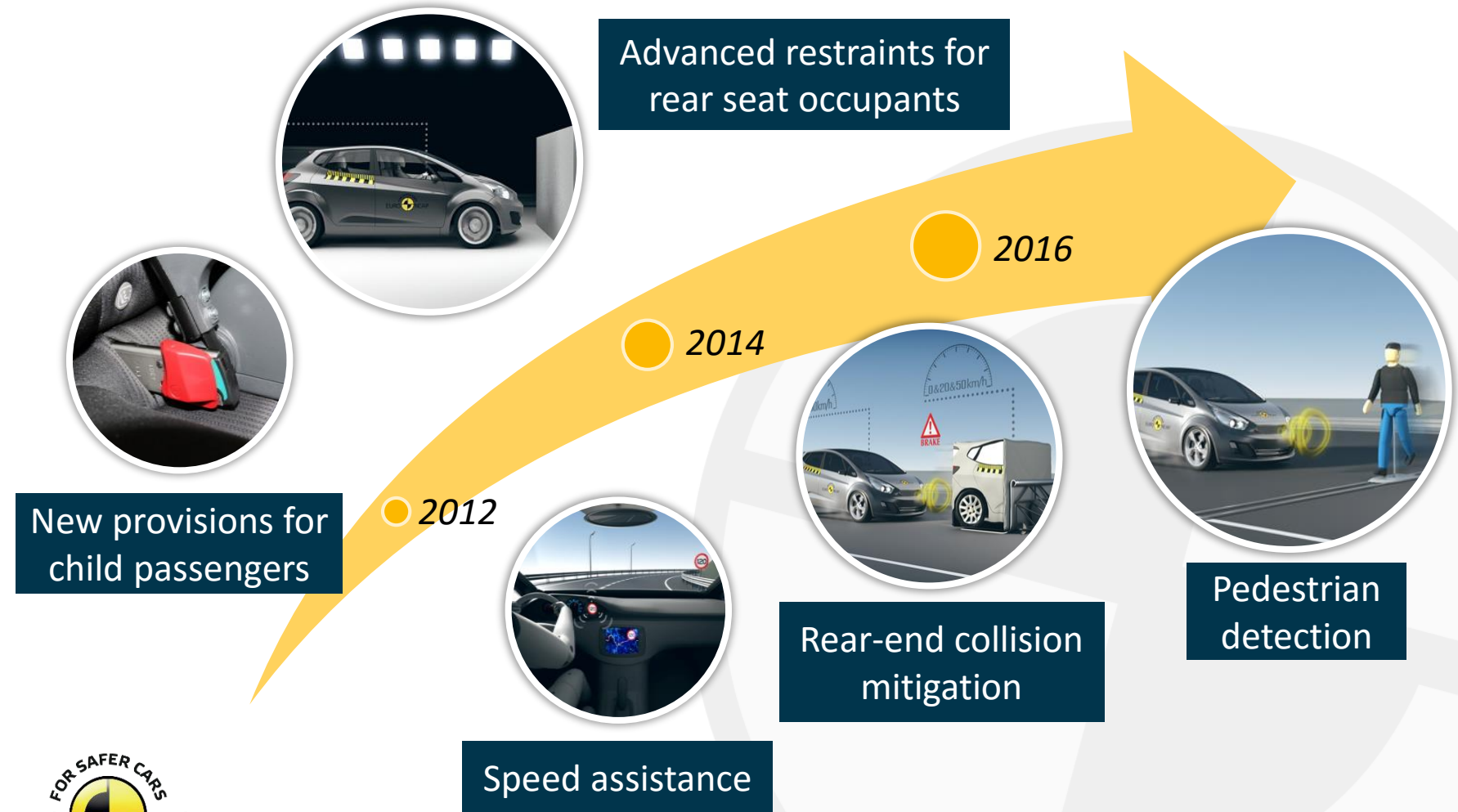
- Euro NCAP has become a *de facto* industry standard
The lion's share of models sold as new has been rated by Euro NCAP



*EU28: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland.

Technologies that save lives

Recent milestones in crash protection & avoidance



What does this mean? An example

■ Toyota Prius (MY 2009)



Standard equipment

- Front driver and passenger head airbags
- Knee airbag
- Side head and chest airbag
- ISOfix standard for child restraints
- Seat belt reminders on all positions

■ Toyota Prius (MY 2016)



Standard equipment

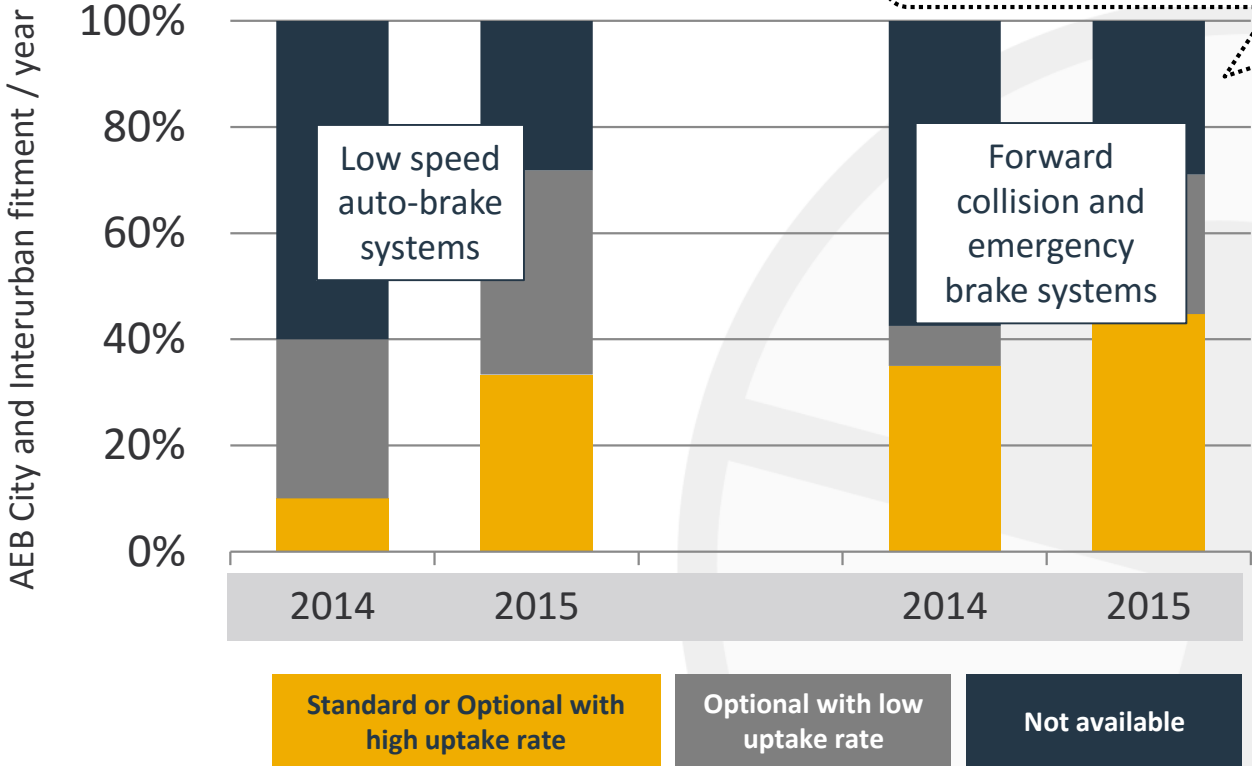
- + Rear seat belt load limiters and belt pretensioners
- + i-Size standard for child restraints
- + Auto-Brake for pedestrians
- + Intelligent speed assistance system
- + Autonomous emergency braking systems for low and high speed
- + Lane departure alert with steering control

Effects on the vehicle fleet

■ Increased availability of important new safety systems

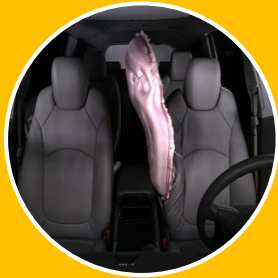
For example Autonomous Emergency Braking

AEB technology is available on over 70% of new cars rated in 2015



Outlook 2020

- Upcoming revisions of the rating scheme are clustered into four domains



Domain 1

- Front occupant protection and vehicle compatibility
- Far side occupant protection



Domain 2

- AEB Car to car
- AEB Cyclists
- AEB in obscure lighting conditions



Domain 3

- Lane keeping
- Road departure and evasive steering



Domain 4

- Speed assistance
- Driver monitoring
- Semi-automated driving, V2X demo

Guidelines for Information, Warning & Intervention

Ratings – Rewards – Tests Campaigns

Supporting robust levels of automation

- New test scenarios to verify reliable system operation and improve real world effectiveness

Cyclist crashes

- Longitudinal
- Crossing and turning



Complex driving scenarios

- Rear-end with overlap
- Lane change
- Run-off road
- Crossing and turning



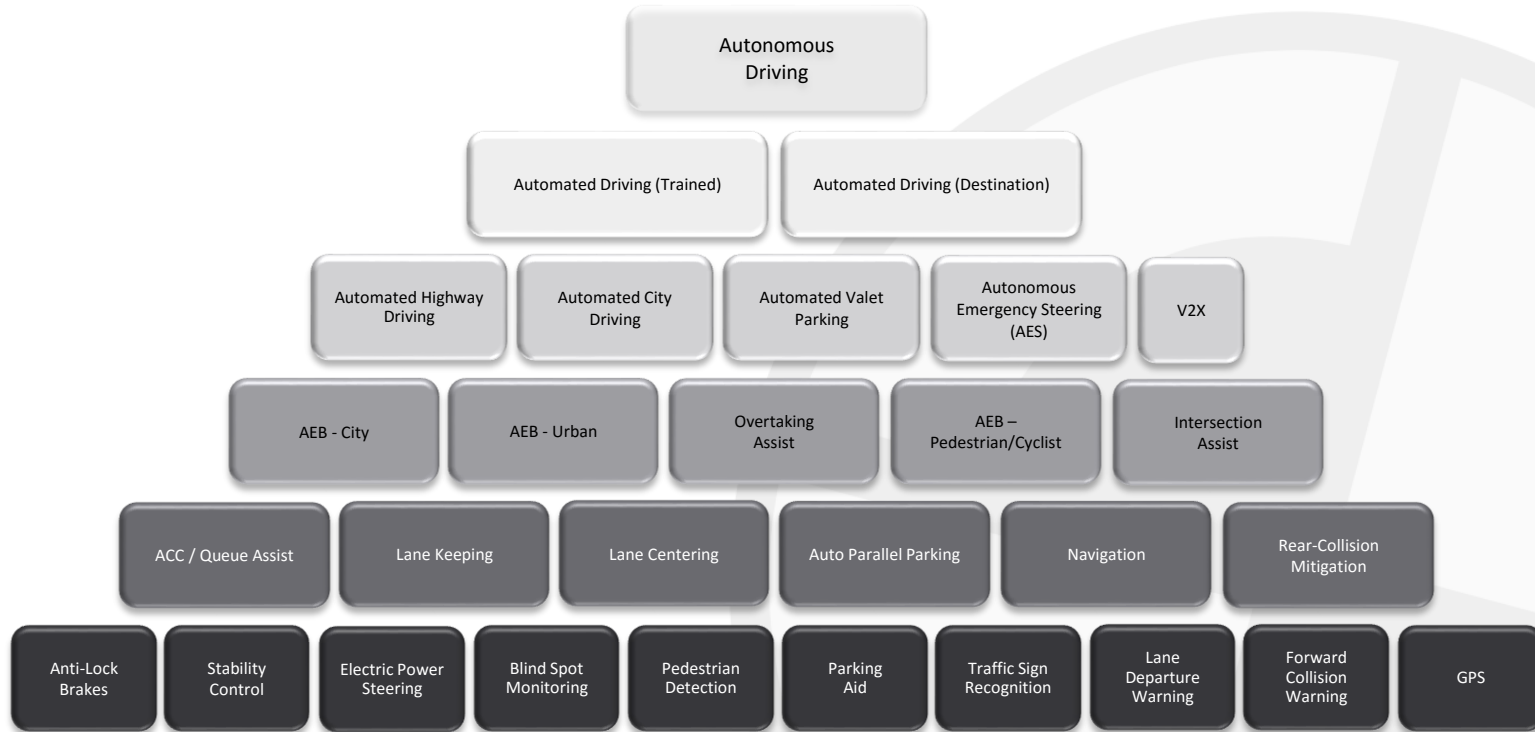
Night-time light conditions

- Street lighting, etc.
- Pedestrian longitudinal and crossing



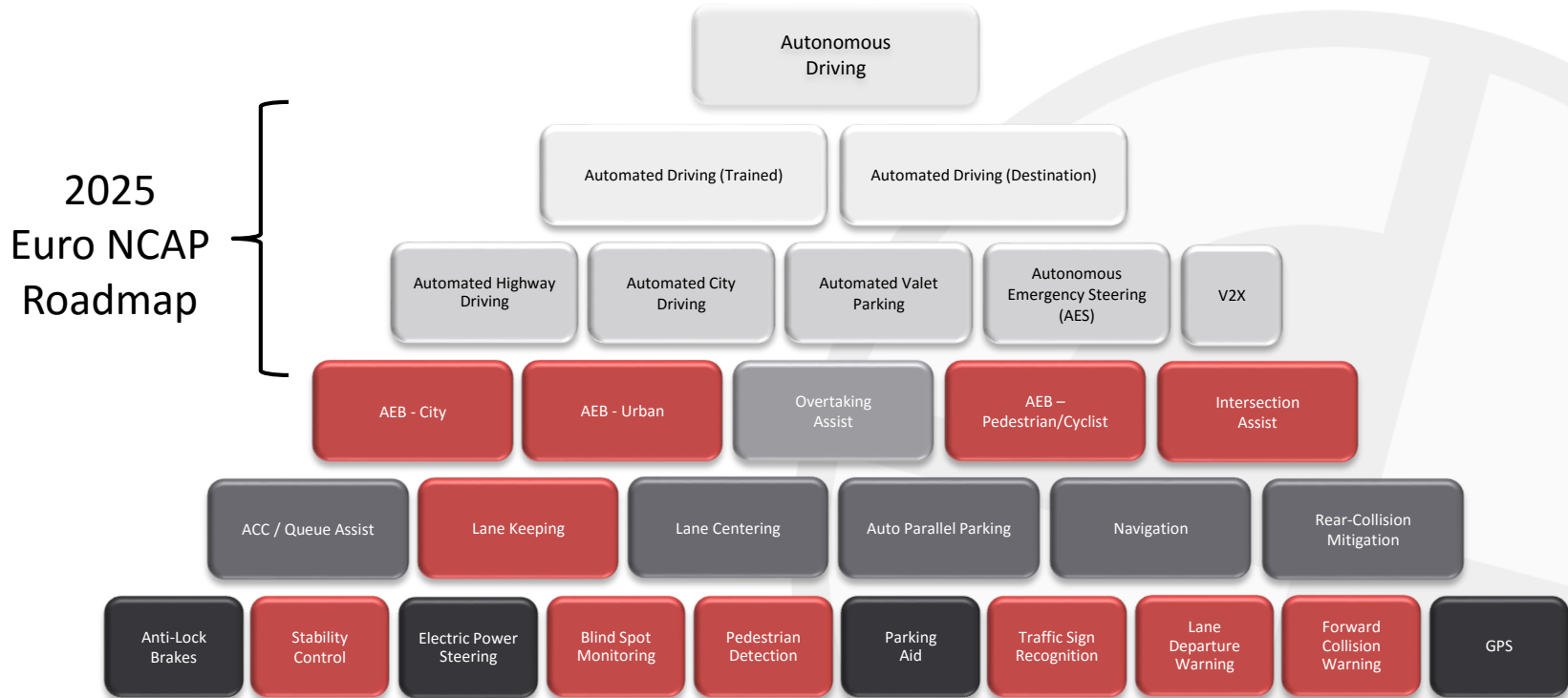
Towards automated driving

- Future guidelines for automated driving and testing will build on these blocks



Towards automated driving

- Future guidelines for automated driving and testing will build on these blocks



Conclusions

- Overall rating enables continued improvement in all areas of vehicle safety
- The latest technical updates prioritised key innovations in vehicle safety technology
Autonomous braking for cars, vulnerable road users, rear seat occupant, ...
- Next rating revisions will ensure that the technologies that facilitate automated driving will be safe, robust and reliable