



Commercial Vehicle SAFETY

Initial Ratings and Future Developments

National Highways –Managing Road Risk Conference



Matthew Avery

March 2025

About Euro NCAP

- Celebrating 28 years
- Encourage manufacturers to exceed the legal safety requirements
- Promote standard fit across the European market
- Focus on passenger cars, vans and now HGV's



What is the CV Problem?

Safety in CV segment lags significantly behind the passenger car segment – in fitment and performance

2019 Nissan Juke



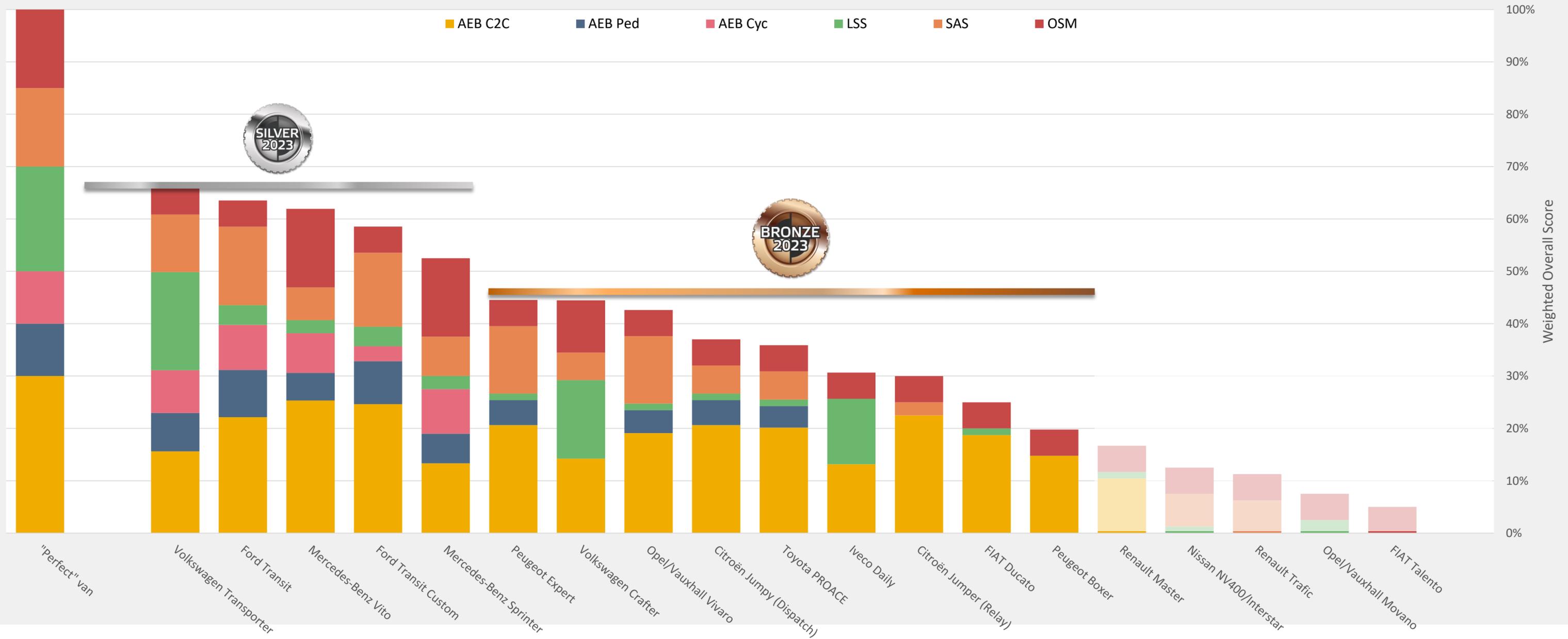
2019 NV400



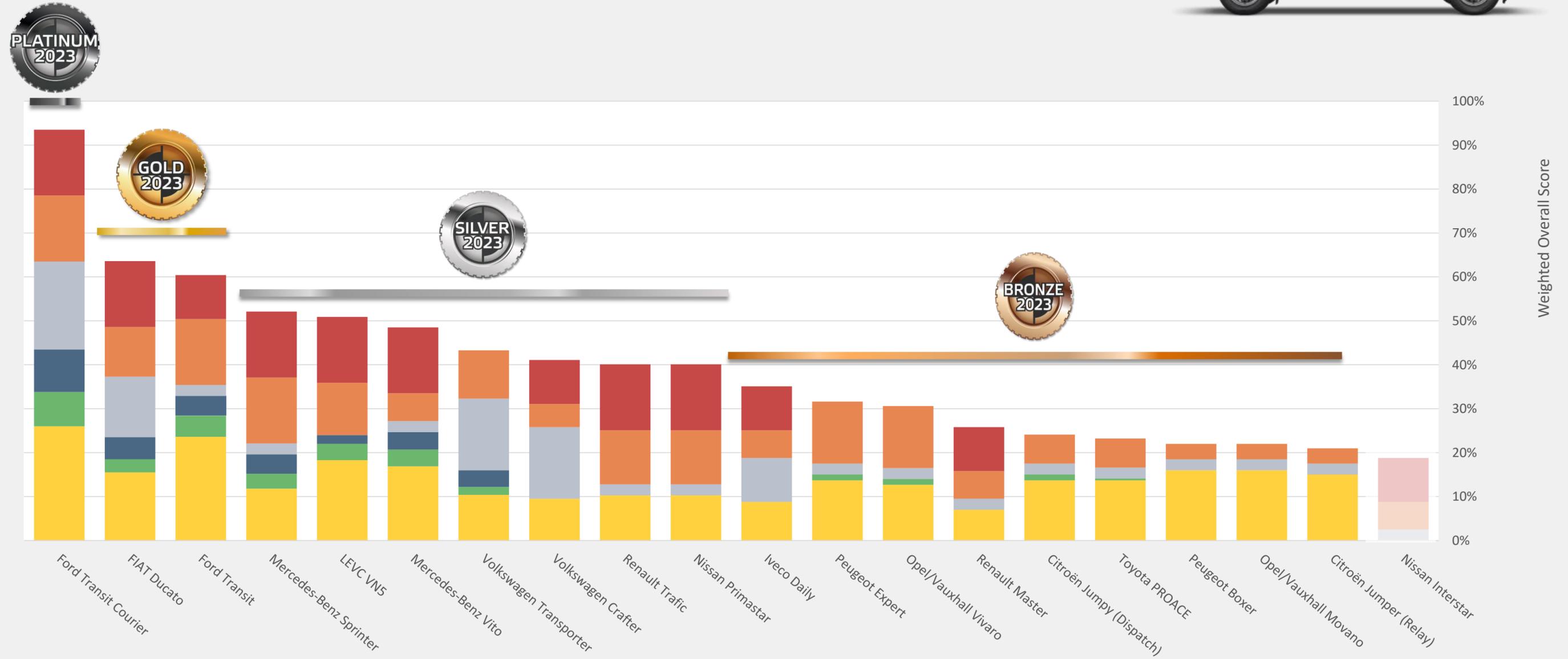
Safety Equipment		
●	AEB City	●
●	AEB Interurban	●
●	AEB Pedestrian	●
●	AEB Cyclist	●
●	Blind Spot Detection	●
●	Lane Departure Warning	●
●	Lane Keep Assist	●
●	Speed Assistance	●
●	Seat belt reminder (all seats)	●
●	Driver Airbag	●
●	Passenger Airbag	●
●	Curtain Airbag	●

● Standard across EU/UK ● Optional ● Not available

Van Testing 2020



Van Testing 2024



Why HGVs?



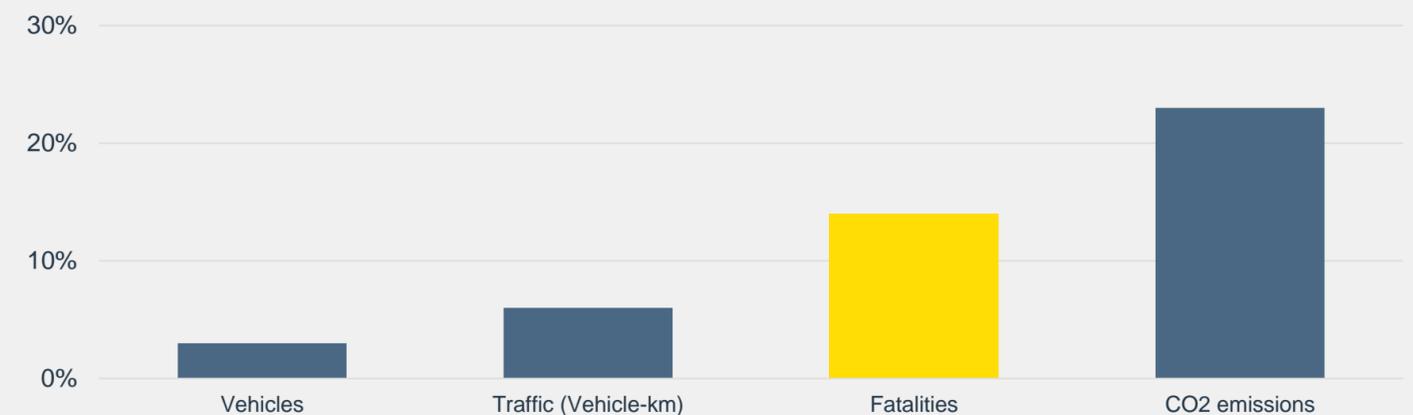
HGVs essential to EU economy

- Freight traffic strongly linked to GDP

Overinvolved in fatalities cf. cars

- <3% of fleet but 15% of fatalities

Scope for improvements beyond regulation (GSR2)



Source: ERSO EU fatalities, Eurostat EU vehicles, DfT UK traffic. HGVs>3.5t

Crashes Involving CVs

Total number of road users killed on all road types in accidents with two parties involved and solo accidents in 2017-2019 listed by collision opponent



Fatalities	... in accidents with ...											Overall	
	Solo accidents	Pedestrian	Bicycle	Moped	Motorbike	Car	Bus	CV (< 3.5t)	CV (> 3.5t)	Semi-truck	Tractor		Tram
Pedestrians	1	0	31	30	208	3770	182	493	315	176	23	93	5322
	0%	0%	26%	55%	46%	31%	41%	31%	18%	13%	8%	54%	
Cyclists	627	10	48	9	56	1250	48	174	220	114	25	24	2605
	6%	23%	40%	16%	12%	10%	11%	11%	13%	8%	9%	14%	
Moped rider	260	2	4	7	15	384	5	41	32	11	14	1	776
	3%	5%	3%	13%	3%	3%	1%	3%	2%	1%	5%	1%	
Motorbike rider	2034	16	25	7	132	2652	52	304	170	91	130	4	5617
	20%	36%	21%	13%	29%	22%	12%	19%	10%	7%	47%	2%	
Car occupants	6425	11	9	2	45	3951	148	474	835	725	73	38	12736
	64%	25%	8%	4%	10%	32%	33%	30%	48%	54%	27%	22%	
Bus occupants	42	0	2	0	0	16	1	3	22	9	0	6	101
	0%	0%	2%	0%	0%	0%	0%	0%	1%	1%	0%	3%	
CV occupants (< 3.5t)	334	1	0	0	1	111	8	85	103	142	8	6	799
	3%	2%	0%	0%	0%	1%	2%	5%	6%	11%	3%	3%	
CV occupants (> 3.5t)	118	1	0	0	0	16	1	10	35	29	0	0	210
	1%	2%	0%	0%	0%	0%	0%	1%	2%	2%	0%	0%	
Semi-trailer occupants	81	0	0	0	0	16	1	7	4	51	0	0	160
	1%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	
Tractor occupants	95	0	0	0	0	16	0	2	3	2	1	1	120
	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	
Tram occupants	1	3	1	0	0	1	0	0	0	0	0	0	6
	0%	7%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Overall	10018	44	120	55	457	12183	446	1593	1739	1350	274	173	28452
	35%	0%	0%	0%	2%	43%	2%	6%	6%	5%	1%	1%	

Road Environment

Strong differences in distribution of collision types

- VRU crashes dominate in city environments
- Car occupant protection highest priority on highways

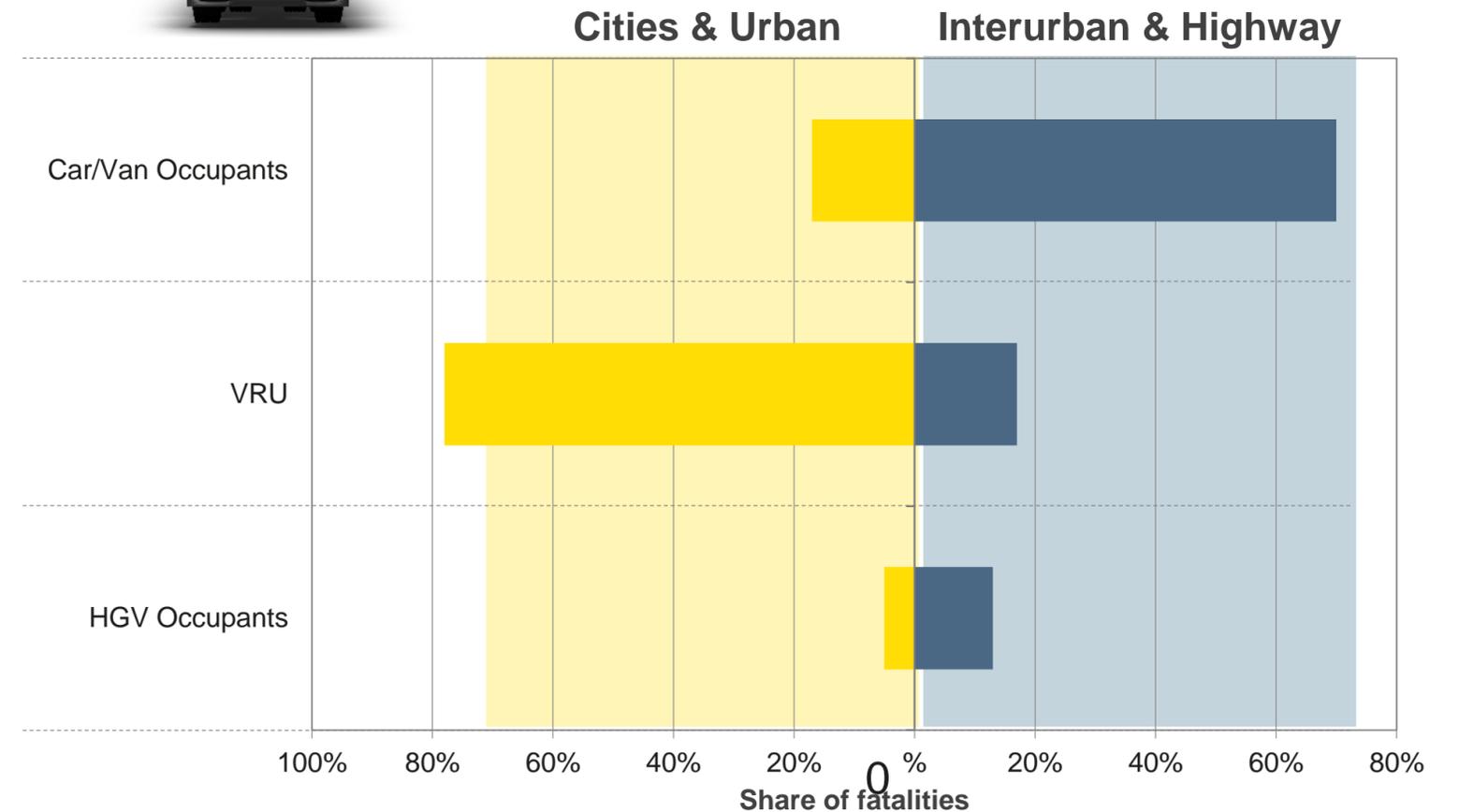
Safety ratings must reflect specific vehicle use

- Many fleet trucks travel in both – City/Interurban and Highways



HGV Safety Priorities

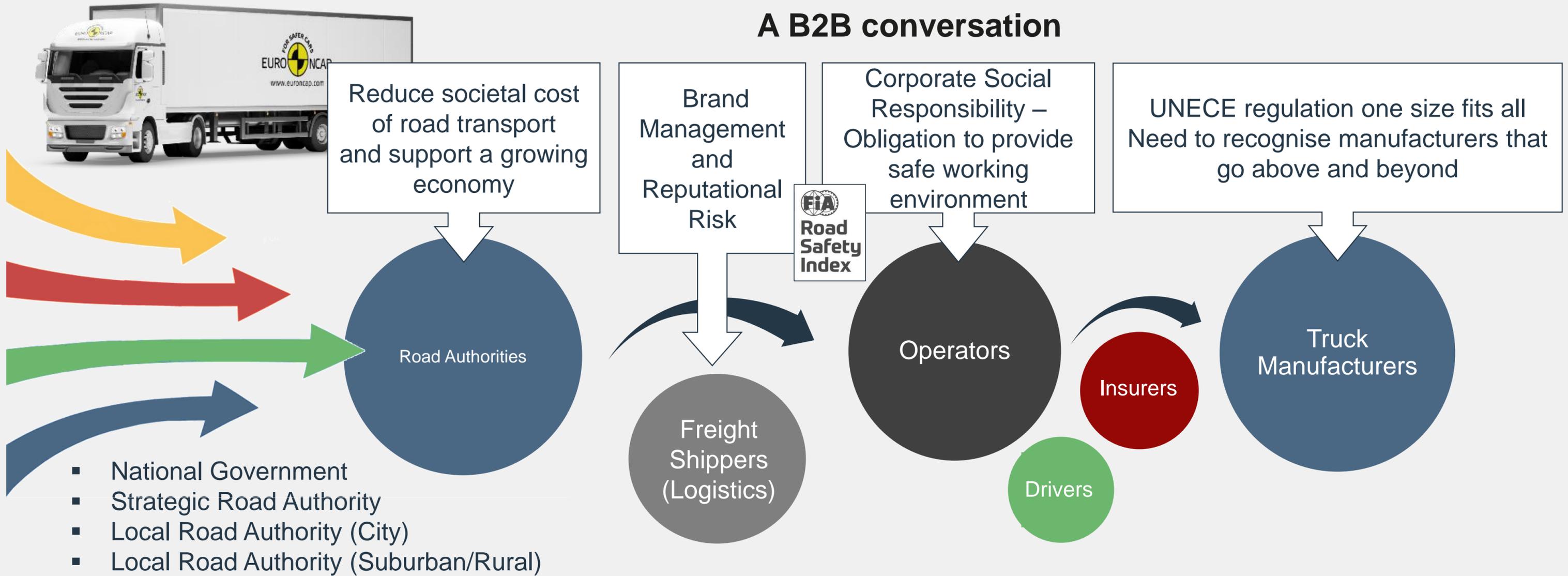
Distribution of collision types



Safety Ecosystem

International & Harmonised Best Practice Safety Ratings

A B2B conversation



Test Procedures Overview

AEB Truck to Pedestrian

Addressing pedestrian crossing and inline crashes

AEB Cyclist incl. junctions

Addressing cyclist crossing, inline and nearside turn crashes

Direct Vision

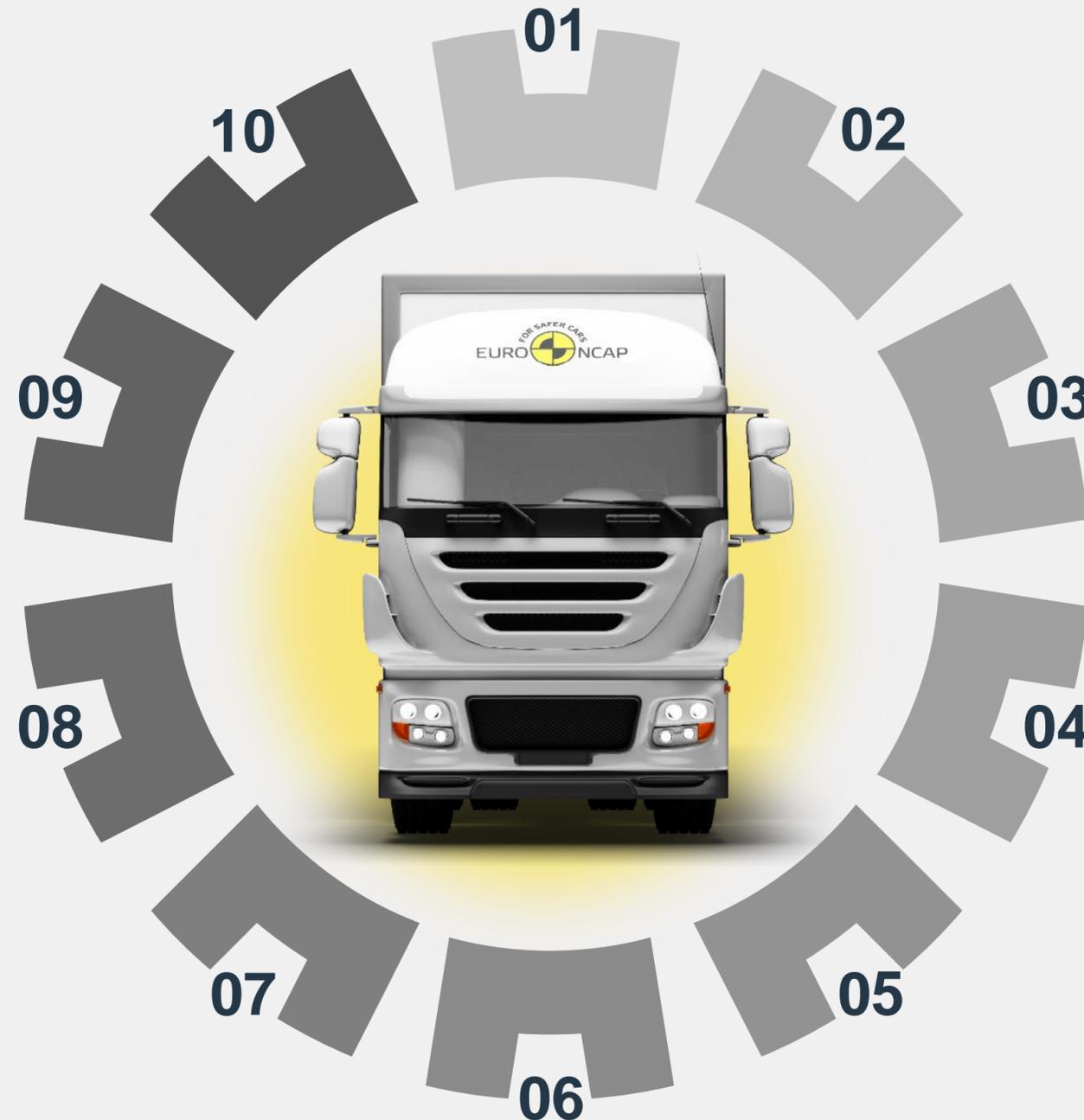
Addressing close proximity manoeuvring collisions with VRUs

Indirect Vision

Addressing VRU and vehicle collisions outside of direct vision

Rescue Information

Access to occupants within the Golden Hour



AEB Truck to Car

Addressing front-to-rear collisions with other vehicles

Lane Support

Addressing highway and rural road lane departure

Emergency Lane Keeping

Addressing lane change crashes involving overtaking vehicles

Driver Monitoring

Addressing seatbelt wearing and driver attentiveness

Speed Assistance

Addressing HGV speeding

Rating Approach

Delivering straightforward and accessible safety information

- Consistent with cars, vans
- Rating at model level

Prioritise crash prevention but plan for passive measures

Overall rating with supplementary information to emphasise suitability

- e.g. City Safe and EV

Three year update cycle



City Safe

Safety features effective for urban and city crash types, schemes implemented by city authorities

EVs

Recognition of manufacturers offering Zero Emission variants

Truck to Car AEB

AEB Static 60kmh



Source: MIRA



Car and VRU AEB



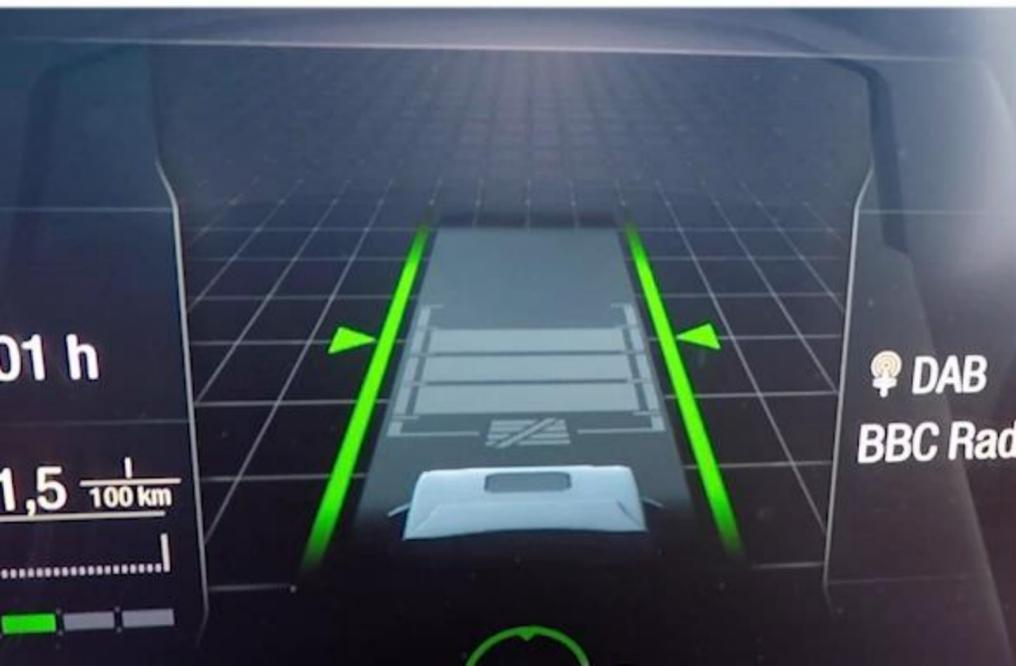
Nearside Turn AEB



Lane Support



Emergency Lane Keep



Source: MIRA

Other Assessments

Direct Vision

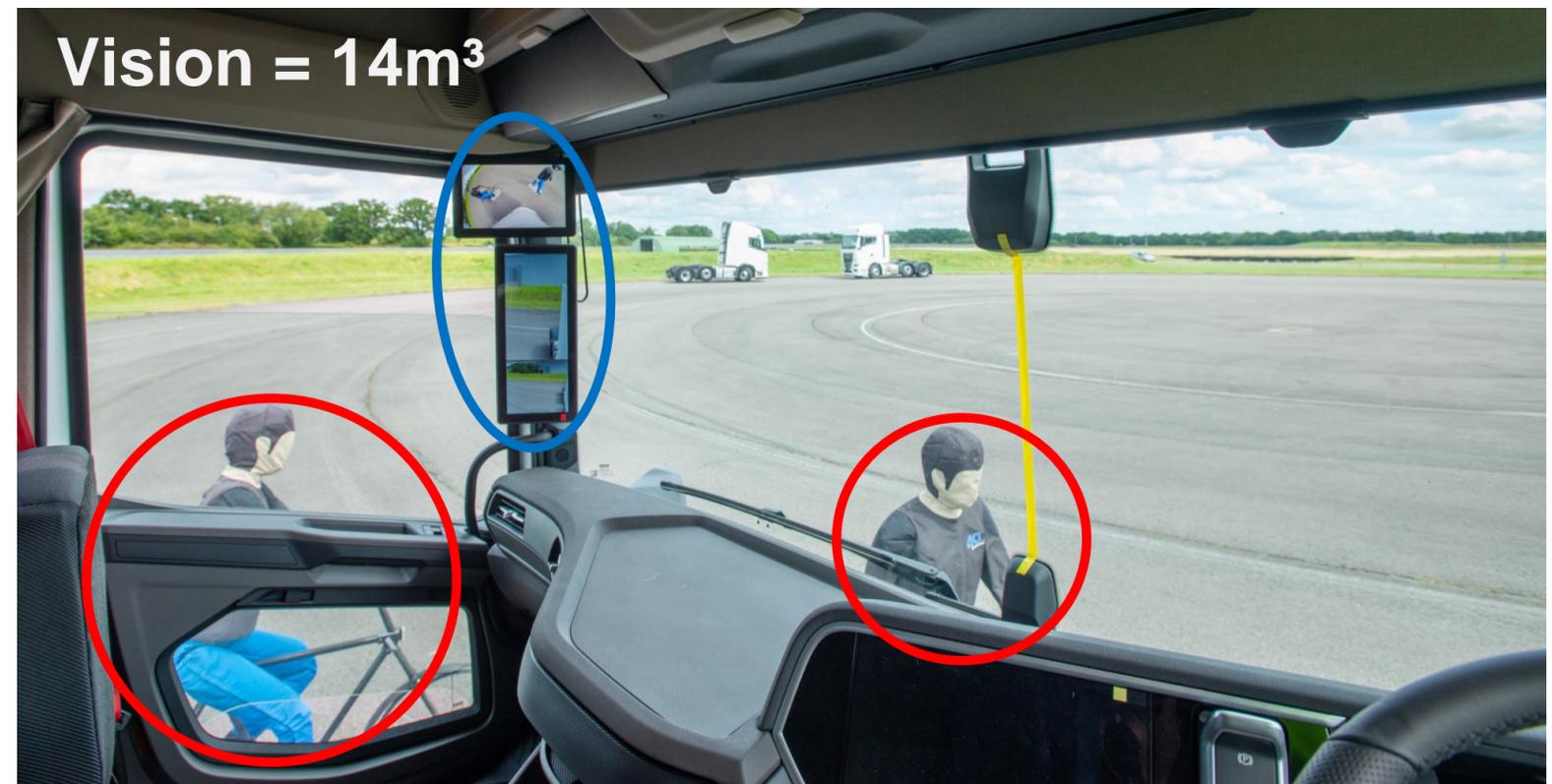
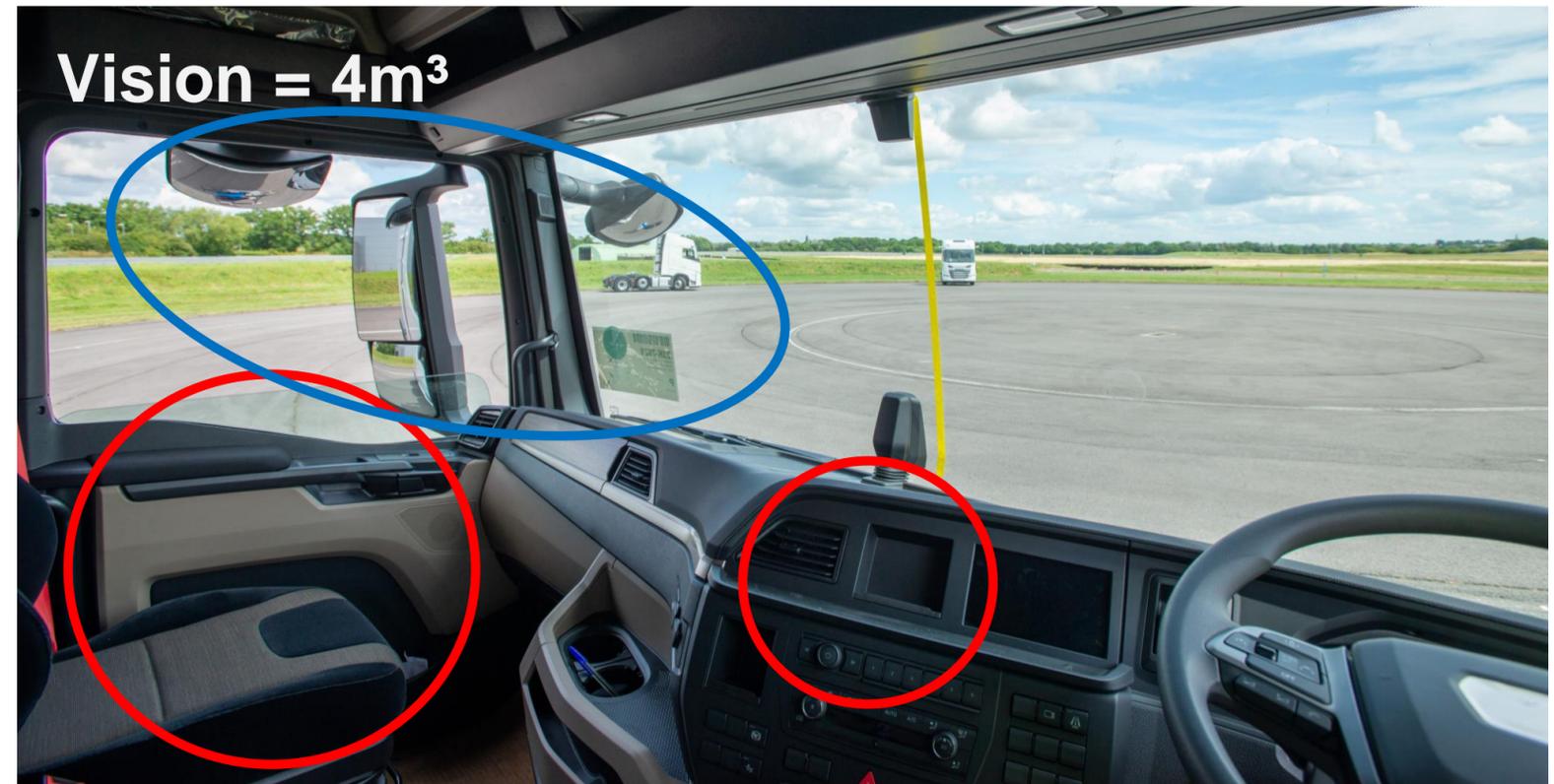
Indirect Vision – eMirrors (CMS)

Intelligent Speed Adaption

Driver Monitoring

Seat Belt Reminders

Rescue information for 1st Responders



HGV Rating Scheme



Release 2024 (Crash Protection: 2031 onwards)

Safe Driving	Crash Avoidance	Crash Protection	Post-Crash
Occupant Monitoring Seatbelt usage Driver Engagement Driver Monitoring Vision Direct Vision Indirect Vision Vehicle Assistance Speed Assistance ACC Performance	Frontal Collisions Car Pedestrian & Cyclist Lane Departure Collisions Lane Departure Car Low Speed Collisions Cyclist Nearside Turn Pedestrian Moving Off Reversing	Frontal Impact Offset VRU Impact Head impact Pelvis & Leg impact	Rescue Information Rescue Sheets Rescue Guide External Labelling Post-Crash Intervention Advanced eCall Vehicle Extrication Energy Management Occupant Extrication

Based on Haddon matrix

- Aligned with van and car schemes
- 3 year update cadence (2028/31 proposed)
- Threshold for “City Safe” set to reward those vehicles with technologies or design that can address typical VRU crashes

Including vision requirements

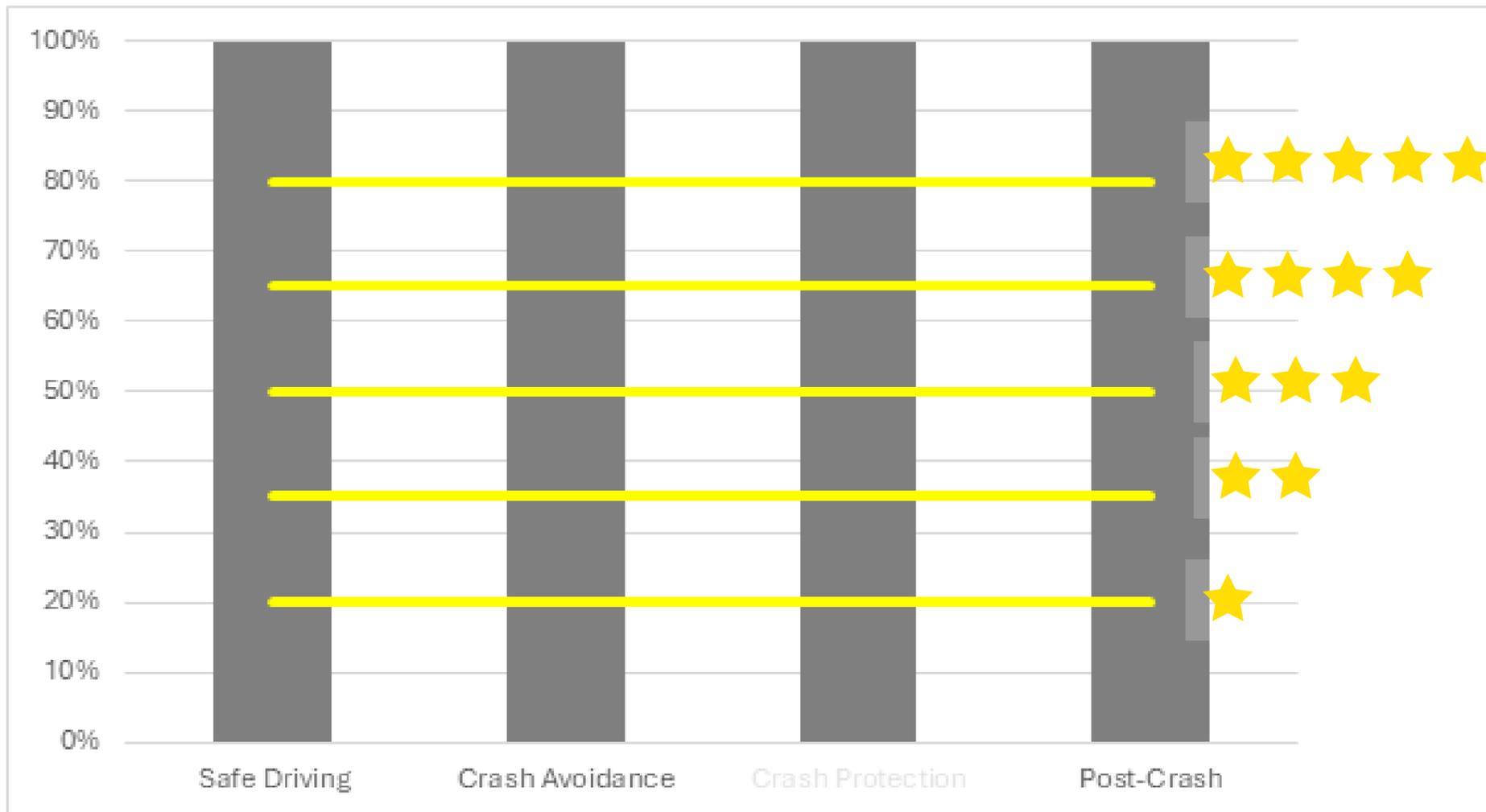
- Direct and indirect

Promoting Rescue information

- Euro Rescue app



2024 HGV Ratings - Boundaries



Methodology

- Reflects current HGV industry Safety Strategy – no Euro NCAP influence
- As car 2028 scheme, except
- Up to 20% pillar compensation (excl. Post-Crash) between adjacent pillars
- Boundaries for 1 to 4 star differ, 5 star 80% benchmark remain
- Rating applicable for 6 years (from year of rating)
- Separate City Safe Award for 3 stars and above highlighting good VRU performance in vision and ADAS

2024 HGV Rating Scheme – City Safe

Safe Driving		Crash Avoidance		Crash Protection		Post-Crash	
Occupant Monitoring	15	Frontal Collisions	60	Frontal Impact	0	Rescue Information	90
Seatbelt usage	15	Car	35	Offset	0	Rescue Sheets	40
		Pedestrian & Cyclist	25			Rescue Guide	40
Driver Engagement	10			VRU Impact	0	External Labelling	10
Driver Monitoring	10	Lane Departure Collisions	25	Head impact	0		
		Lane Departure	15	Pelvis & Leg impact	0	Post-Crash Intervention	5
Vision	50	Car	10			Advanced eCall	5
Direct Vision	35						
Indirect Vision	15	Low Speed Collisions	15			Vehicle Extrication	10
		Cyclist Nearside Turn	15			Energy Management	5
Vehicle Assistance	25	Pedestrian Moving Off	0			Occupant Extrication	5
Speed Assistance	35	Reversing	0				
ACC Performance	15						
	100		100		0		100

- **CitySafe** 50% of points available from Vision, Frontal Pedestrian & Cyclist, & Cyclist nearside turn

Vehicle Selection – By Sector

Long Haul



Fleet Tractor

Fleet Rigid

Distribution



Urban (18t)

City (12t)

Construction



On Road

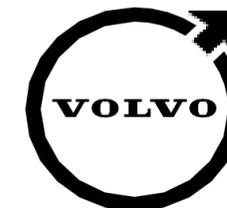
Off Road (Cat G)

Utility



Refuse

Fire Engine



The first release – Fleet trucks

November 2024



DAF XF (2025 MY)



Iveco S-WAY (2022 MY)



MAN TGX (2025 MY)



Mercedes-Benz Actros L (2024 MY)



Renault Trucks T (2025 MY)



Scania R-series (2025 MY)



Scania G-series (2025 MY)



Volvo FH Aero (2025 MY)



Volvo FM (2025 MY)



2024 Fleet long-haul summary

Make	Model	Rating	CitySafe	EV Version
DAF	XF (2025 MY)	★★★★☆		✓
Iveco	S-WAY (2024 MY)	★☆☆☆☆		✓
MAN	TGX (2025 MY)	★★★★☆		✓
Mercedes-Benz	Actros L (2024 MY)	★★★★☆		✓
Renault Trucks	T (2025 MY)	★★★★☆		✓
Scania	R-series (2025 MY)	★★★★☆		✓
Scania	G-series (2025 MY)	★★★★☆		✓
Volvo	FH Aero (2025 MY)	★★★★★		✓
Volvo	FM (2025 MY)	★★★★★		✓

Roadmap 2031 Passive Safety



Roadmap 2031



Future Developments

- Standard Fit for ADAS?
- Focus on Passive Safety Protection
- Front Underrun
 - Trafikverket Research
 - 20% of car occupant KSI occur in head-on collisions
 - Utilising new Aero dimensions allowing elongated cabs (96/53 EC–article 9a)
- Passive Pedestrian Protection
 - 11% of KSI related to VRU crashes
 - Head
 - Upper Lower Leg
 - Wiper Bosses/Grab Handles

HGV Passive Safety Opportunity



Elongated cabs (96/53 EC–article 9a)

HGV Programmes 2025



- **Fleet Rigid**
- Reassessment of 2024 Fleet Tractors
- 6x2 - No Trailers
- Summer 2025 Release



- **Urban Distribution (16-19t)**
- New Tests Category
- 4x2 Rigid
- Winter 2025 Release

Future Developments

Van testing adds passive safety and standard fit

Integrate Van and Trucks into a dedicated Commercial Vehicle Rating for fleet users

Add trailers and body builders

Once principles established, expand to PSV market

City Buses and Inter-Urban Coaches



THANK YOU



About Euro NCAP

Euro NCAP provides consumers with an Independent assessment of the safety level of the most popular cars sold in Europe.

Euro NCAP is a catalyst for encouraging significant safety improvements to new car design. We hope that when buying a new car Euro NCAP will help you choose for safety.



www.euroncap.com
info@euroncap.com

Mgr. Ladeuzeplein 10
3000 Leuven
BELGIUM

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