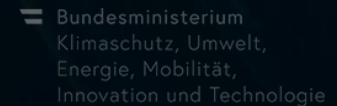
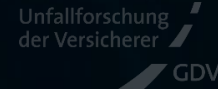
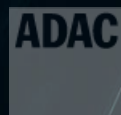
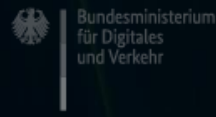
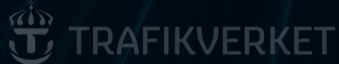


FOR SAFER CARS

EURO NCAP





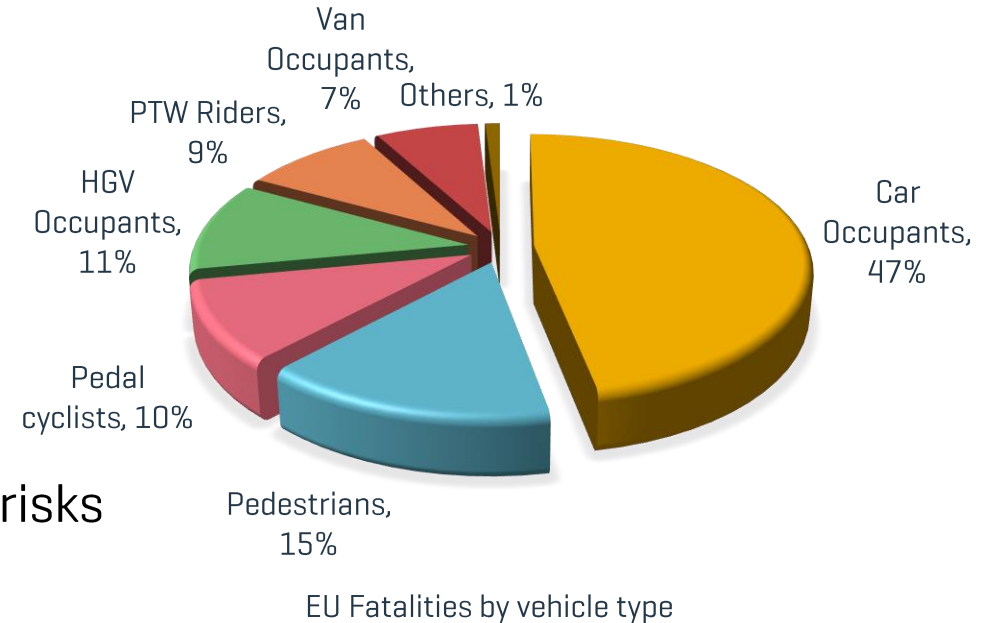
Heavy Commercial Vehicle – Delivering Safety

A new initiative by Euro NCAP

April 2023

Why HGVs?

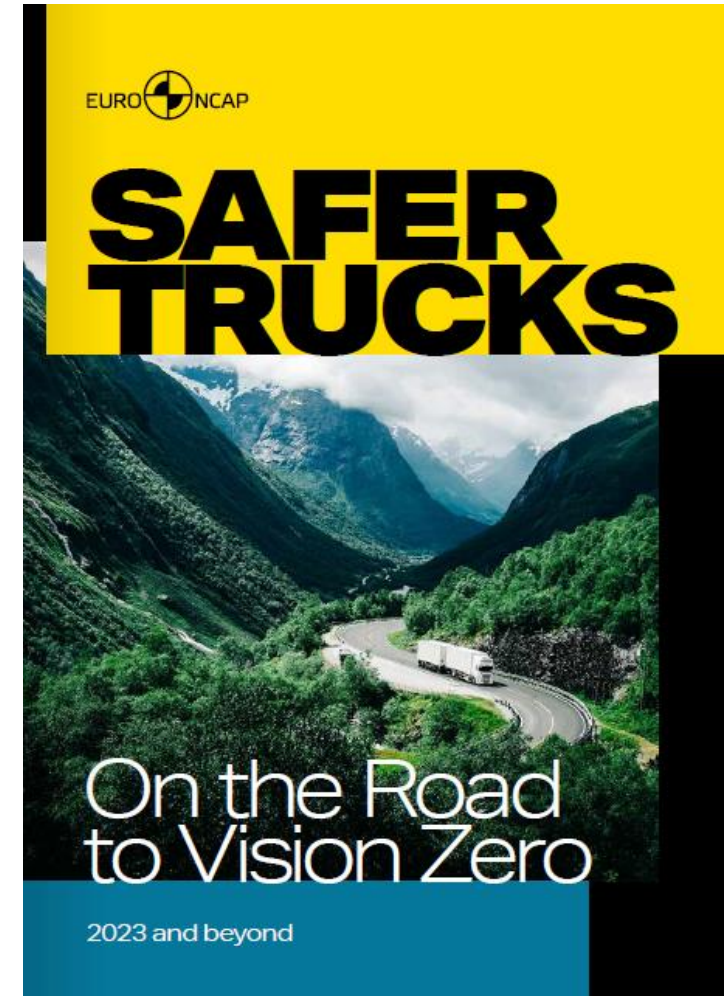
- HGVs are essential to European Economy
- Over involved in fatalities compared to cars
 - 15% of all EU fatalities in HGV crashes
 - 1.5% of fleet
 - 90% casualties not HGV occupants
- Freight traffic strongly linked to GDP
 - Without action, increasing prosperity will increase safety risks
- Market for safety is limited due to conditions
- Regulation [GSR2] - an important safety mechanism but significant scope for improvements beyond
- Part of 2025 Road map – and Euro NCAP “space”



Vision Zero cannot be achieved without substantial action on HGV safety

Introduction

- Commercial vans rating scheme launched in December 2020
 - Updated in 2022 and 2023
- Ambition to improve HGV safety in the market
 - Roadmap 2025 and Vision 2030
- WG on Commercial Vehicle Safety
 - Accident data, technology review, rating concept
 - Document ready for April release



Crashes Involving HGVs – Analysis of DE, FR, GB, IT & SE

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



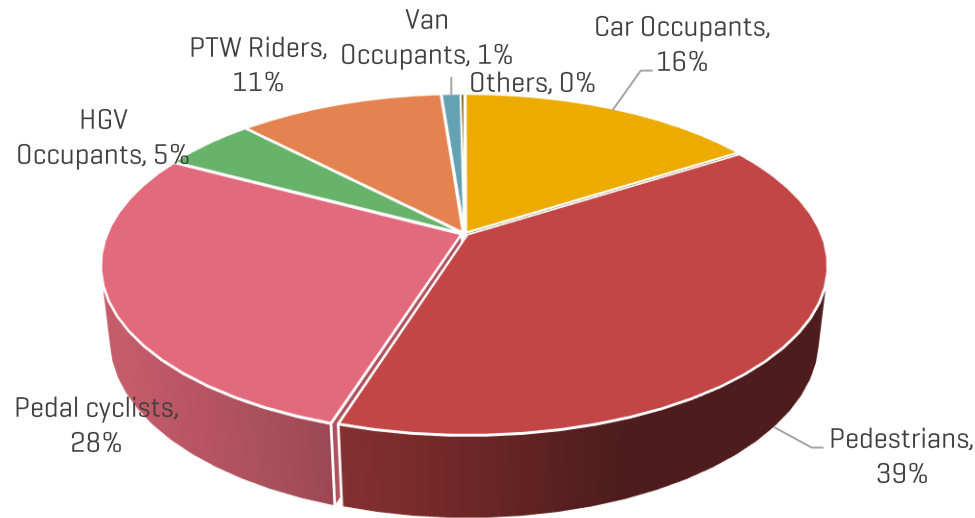
	... in accidents with ...												
Fatalities ...	Solo accidents	Pedestrian	Bicycle	Moped	Motorbike	Car	Bus	CV [< 3.5t]	CV [> 3.5t]	Semi-truck	Tractor	Tram	Overall
Pedestrians	1	0	31	30	208	3770	182	493	315	176	23	93	5322
	0%	0%	26%	55%	46%	31%	41%	31%	18%	13%	8%	54%	
Cyclists	627	10	48	9	56	1250	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%	

Strong Variation by Road Environment

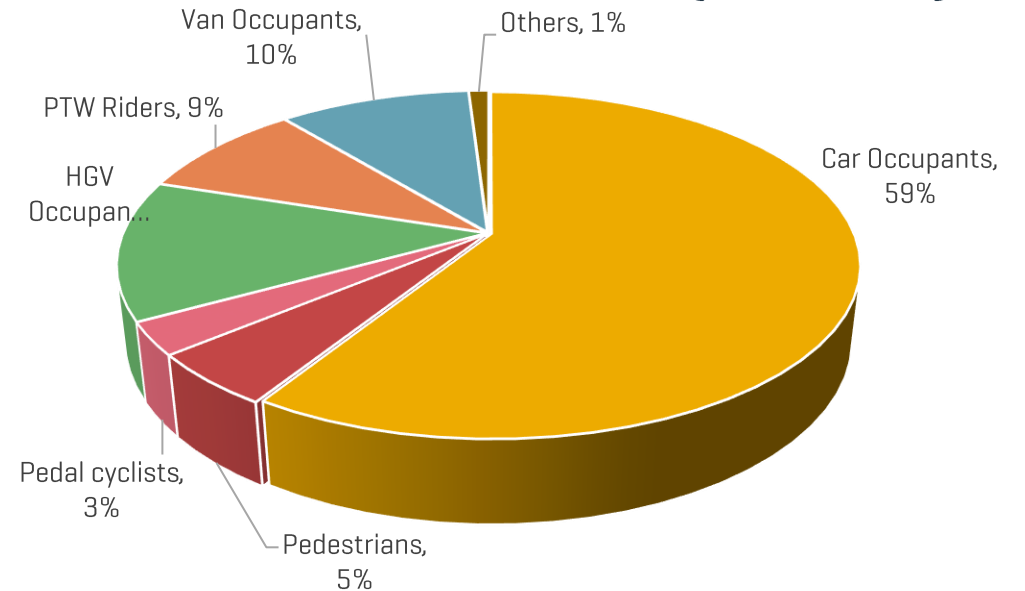
■ Strong difference in distribution of collision types and safety priorities in urban and extra-urban transport

- Safety of VRUs dominates in urban freight operation
- Car occupant protection highest priority in inter-urban
- Other commercial vehicles, e.g. vans, important on Motorway

Urban Roads (Cities)



Extra Urban Roads (Highways)



Freight Sectors

- HGVs do not exist for fun or leisure
- Come in all shapes and sizes
- Serve huge range of different societal and economic needs
- Generally categorised in 4 generic sectors
- Different categories see different urban / inter-urban usage



Urban & Regional Distribution

- Lower capacity, manoeuvrable, lower powered, day cabs
- Heavily involved in urban and rural + some shorter motorway journeys



Long Haul

- Predominantly motorway and major rural 'A' road
- High capacity, powerful, high mounted, sleeper cabs
- New Cab Shapes permitted by revised weights and dimensions reg



Construction

- Powerful, high ground clearance, multi-drive axle
- Mixed use construction sites (urban), quarries and waste sites (rural)



Utility

- Often bespoke bodies, refuse collection, sweepers, gritters etc
- Mixed use but heavily urban

Is Regulation the Answer?

- EU General Safety Regulation update (GSR2)
 - VRUs killed in close proximity manoeuvring
 - 2024 - R151/159 BSIS for left turn & moving off
 - 2029 - R167 Direct vision
 - 2026 Driver monitoring
 - Very little for car occupants, nothing on AEB or lane support
- Revised R131 and Directive 96/53/EC weights and dimensions create opportunities for better AEB and crash compatibility but don't require them
- Opportunities to go further, faster and innovate while better balancing different industry sector needs



HGV Ecosystem



A B2B conversation...

CSR – Obligations to provide a safe working environment

UNECE International regulation on vehicle approval and operation
One size fits all sectors and all locations:
Lowest common denominator

Road Authorities
(e.g.TFL)

Fleet Operators

Truck Manufacturers

Freight Shippers
(Logistics)

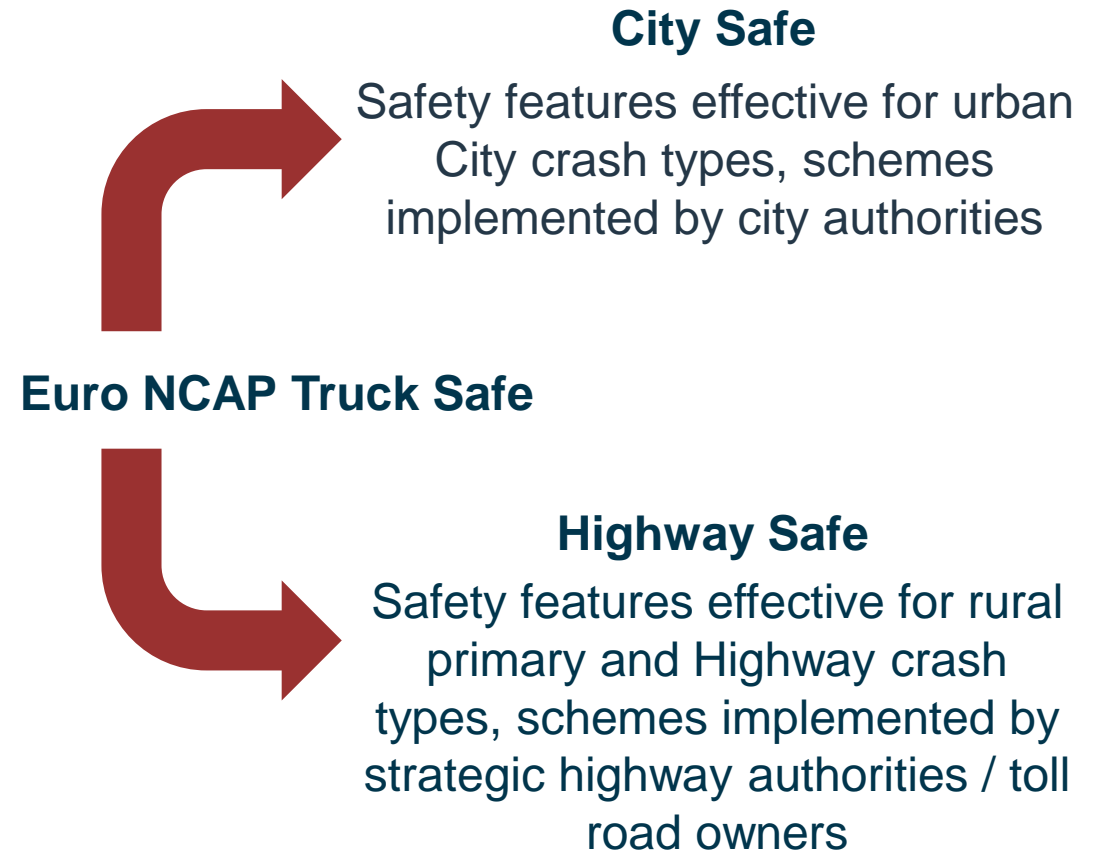
Drivers

- National Government
- Strategic Road Authority
- Local Road Authority (City)
- Local Road Authority (Suburban/Rural)

International & Harmonised Best Practice Safety Label

Approach

- Rating concept intends to break 'one size fits all' constraint of regulatory approach
- Apply both ratings to every vehicle
 - Operator need only worry about the aspect important to their operation
- Different levels in each category
- Additional recognition of zero emissions



Definitions - Vans or Trucks?

- Guiding principle “If it looks like a van, it’s a van, if it looks like a truck ...”
- Initial view – monocoque vs body on frame
- Need for subdivision by size in detailed protocols – discussion on L2 test with VM’s
- Alignment with LCV’s and HGV’s rating strategies over time – both freight sectors



Vito Mono 2 tonnes – N1



Sprinter Mono 3.0 tonnes – N1



Sprinter 519 L3 H2 5.5 tonnes – N2

Vans

Trucks



Canter 3.5 tonnes – N1



Atego 7.5 tonnes – N2



































































Actros 40 tonnes – N3

Managing Diversity

- Multi-stage build – certain features not in OEM control
- Rigid owned by operator (who may also be the shipper)
- Trailers built by yet another company.
- Ownership of trailer often different to vehicle towing it
- Initial proposal – assess OEM chassis-cab only



Truck City and Highway Safe Roadmap

Accident scenario			2024								2027			2030				
			Weighting*	Speed Assistance	AEB vehicle front to rear	Lane Support	AEB VRU	Vision	AEB Nearside turning	Rescue info, ...	Planned additions			AEB TAP	AEB Hear On	Passive Ped Protection	Crash compatible front/side	Occupant protection
	Partner protection	VRU Crossing	40%															
		Stationary or walking VRU	5%															
		VRU in collision with low speed manoeuvring truck	20%															
		VRU in collision with reversing HGV	5%															
		PTW rider in collision with HGV	10%															
		Car occupant in collision with HGV	15%															
	Self	HGV occupant in collision	5%															
	Partner protection	VRU Crossing	5%															
		Stationary or walking VRU	5%															
		PTW rider in collision with HGV	10%															
		Car occupant in collision with HGV	65%															
	Self	HGV occupant in collision	15%															

*Provisional weighting based on EU accident data.

Support

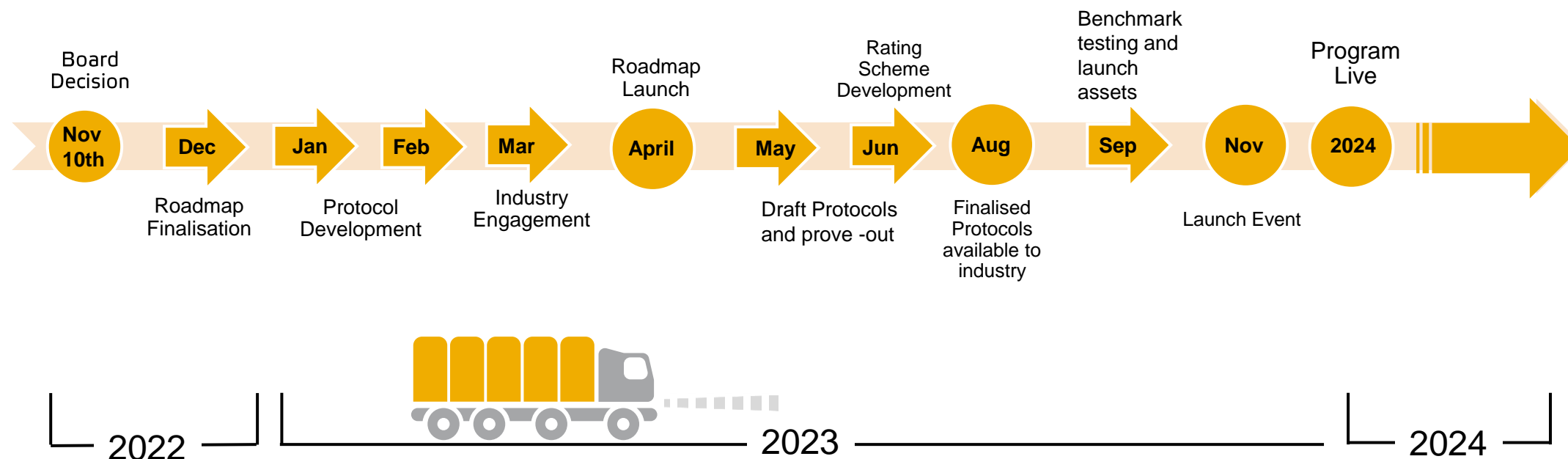
■ Membership Interest



■ Supportive



Next Steps



Future development

- Regular updating in line with technology development
- Add consideration of safety features added at second stage body building
- Add assessment of trailer safety
- Consider whether more sophisticated environmental incentives could be added
- Once principles established, expand to bus and coach market



Swedish Front Underrun work

- Trafikverket (Swedish Roads Authority) test
- Shows that still a very severe crash even with R93 compliant front underrun
- Sponsoring development of an enhanced prototype with Chalmers University
- Plan a repeat test with prototype to assess potential



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