

SAFETY TECHNOLOGIES IN HEAVY DUTY VEHICLES

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Volvo Group



Volvo Trucks. Driving Progress



A GLOBAL LEADER IN SUSTAINABLE TRANSPORTATION

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The Volvo Group is one of the world's leading manufacturers of trucks, buses, construction equipment, drive systems for marine and industrial applications. The Volvo Group also provides complete solutions for financing and service.





”The basic principle behind all design work is, and must always be, safety”



A history of safety

- 1959** Seat belt invented by Volvo
- 1960** Safety cab
- 1969** Accident Research Team
- 1996** Front Underrun Protection System
- 2005** Alcolock
- 2008** Driver Alert Support
- 2012** Collision Warning with Emergency Brake



Learning from accidents – since 1969

- Accident Research Team on standby
- Unique knowledge gathered
- Active international cooperation



In the hands of the human factor

10%



Vehicle-related

30%



Road environment

90%



Driver-related

distraction

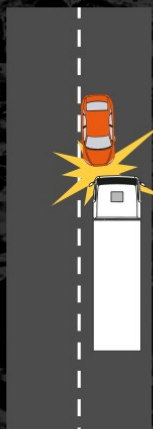
alcohol

speed

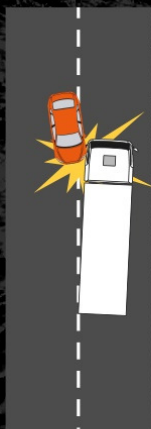
no seat belt used



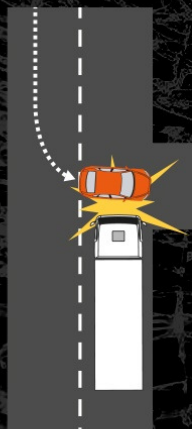
Car occupants – 65%



35%



15%



10%



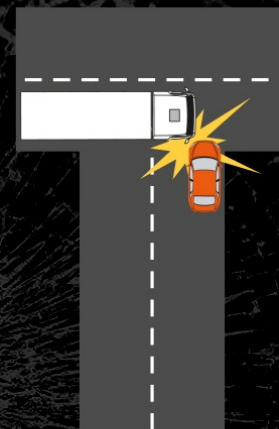
10%



5%



10%



10%

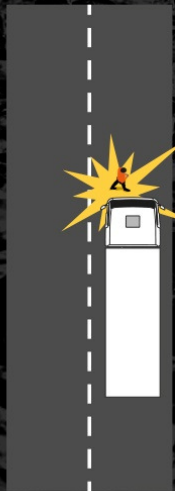


5%

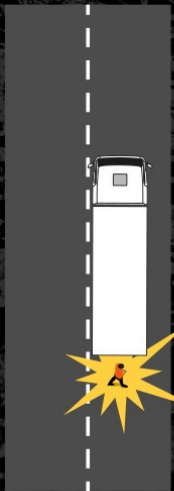
75%



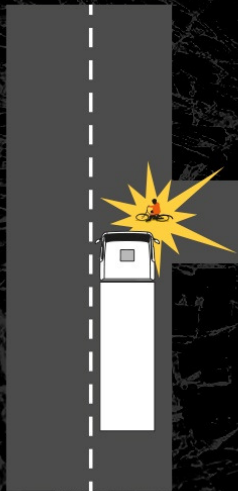
Unprotected – 20%



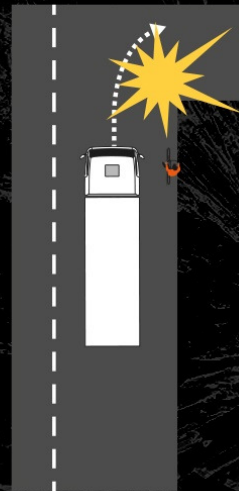
25%



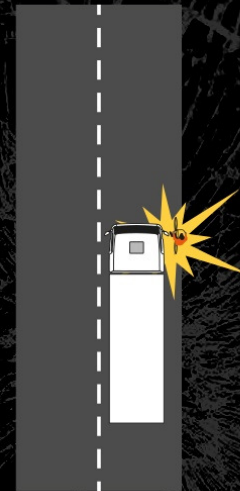
20%



10%



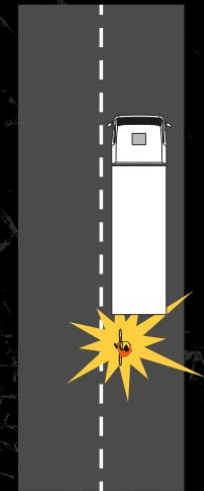
10%



10%



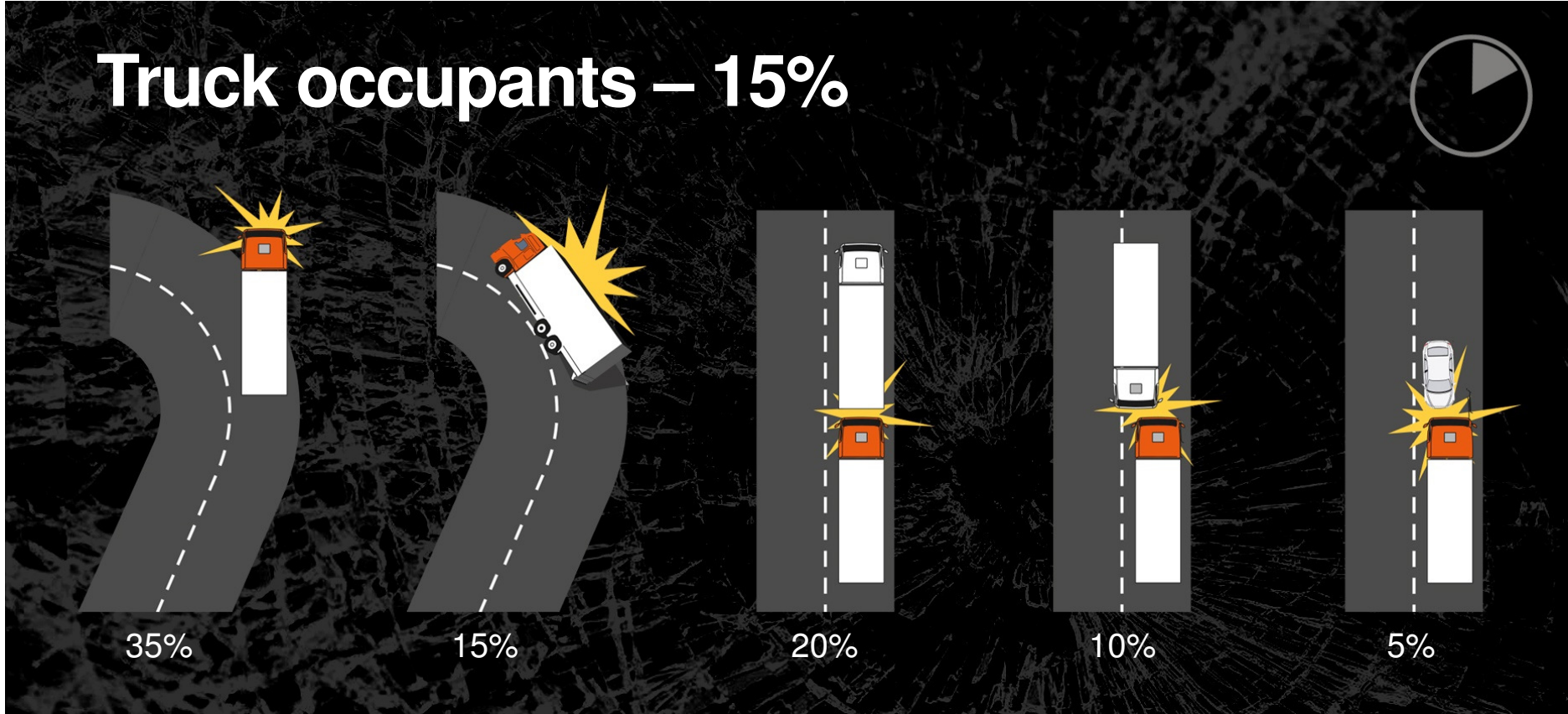
5%



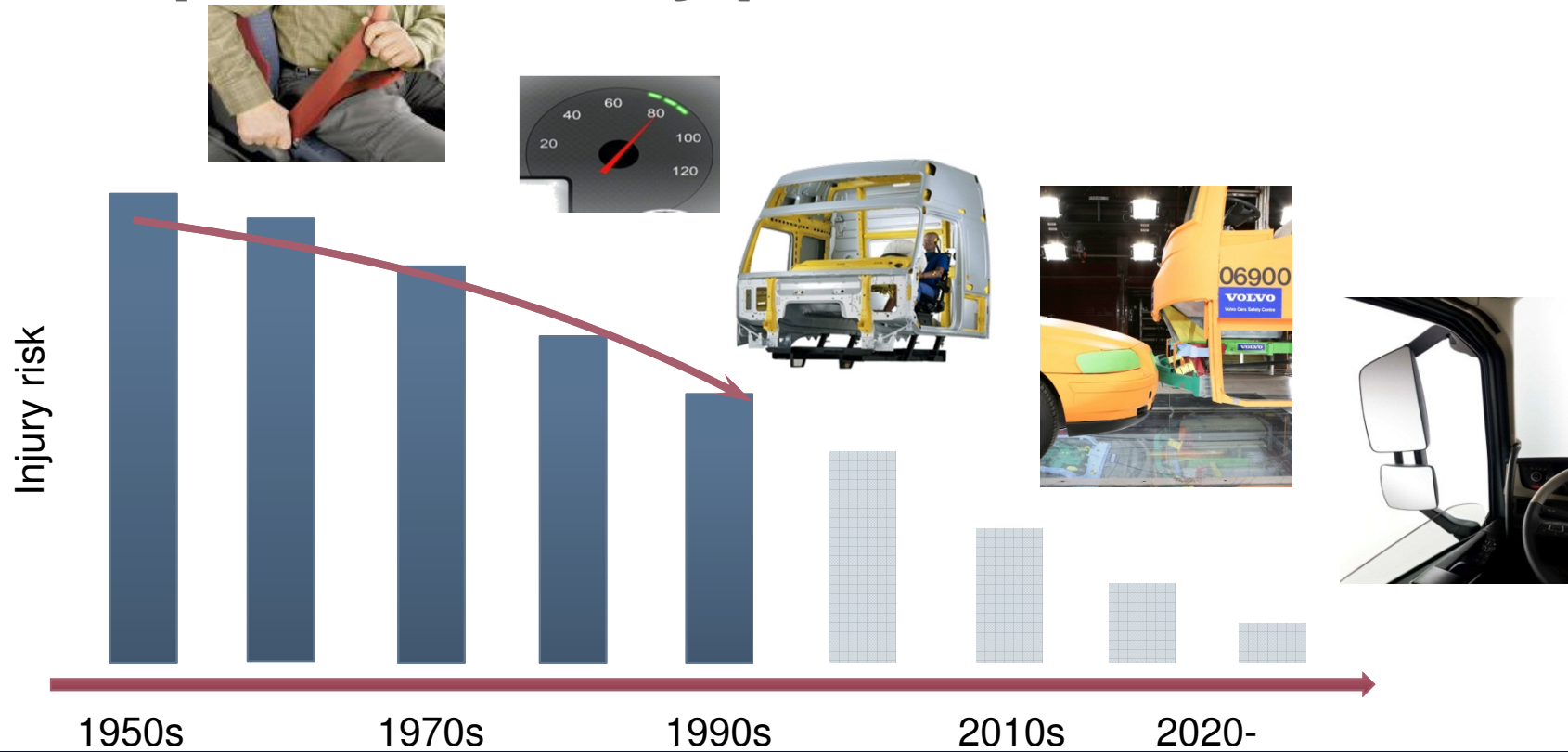
5%



Truck occupants – 15%



The passive safety phase

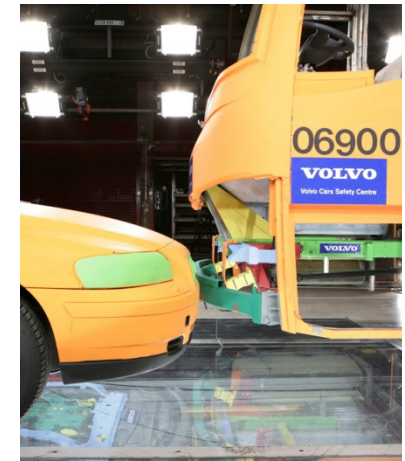


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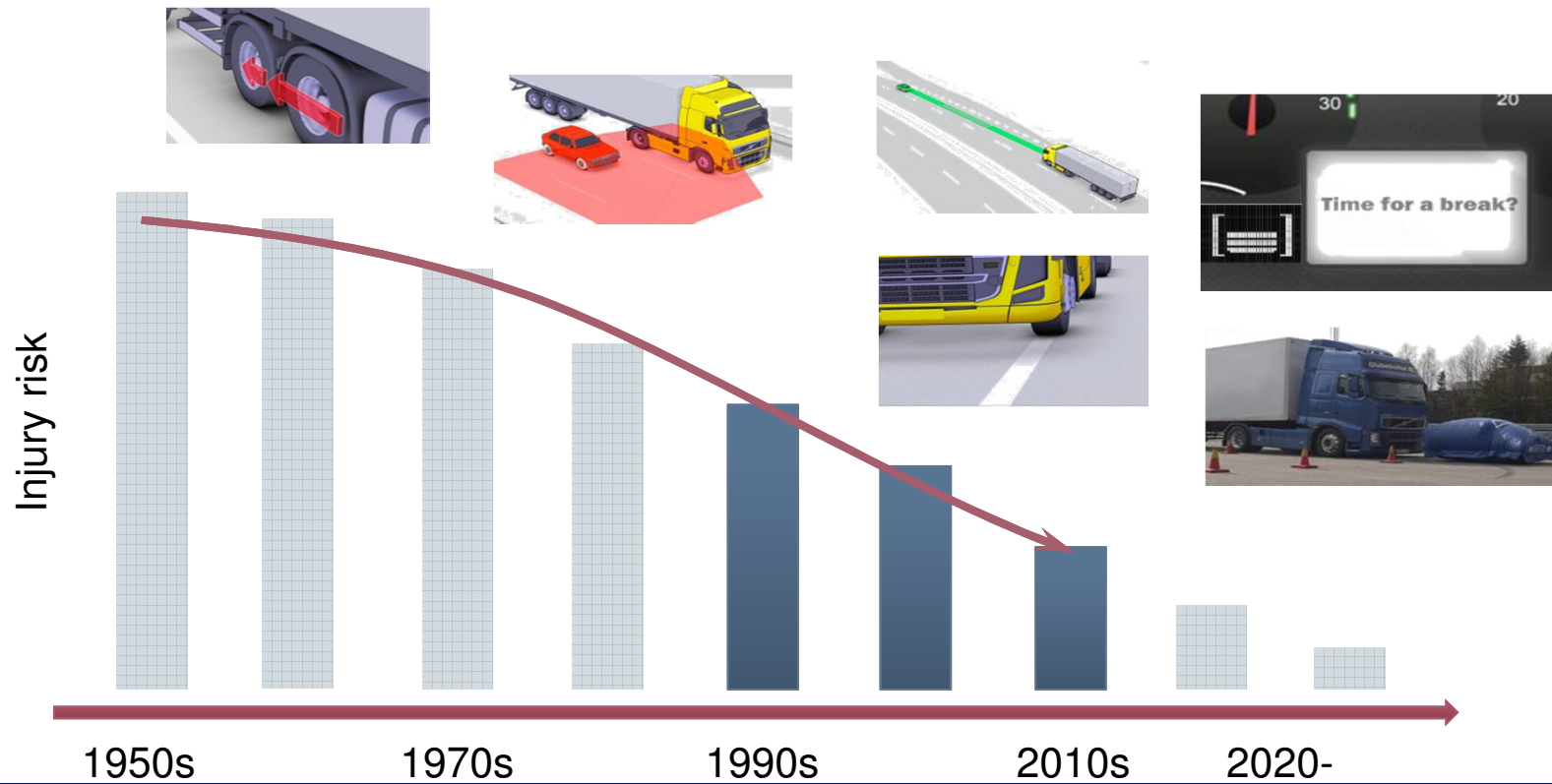
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Passive safety achievements

- Collision compatibility (e.g. FUPS)
- Crash & roll-over testing
- Cab strength
- Direct vision (low-entry cabs, incl construction)



The active safety revolution



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In 2015 a very important safety step was taken:

Mandatory active safety systems in EU by Nov 2015

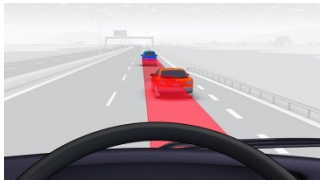
Lane Departure Warning System, LDWS



Reduces risk for driving off road accidents on highways and rural roads.

Camera sensor monitors position of vehicle with respect to the lane boundary. When vehicle is in danger to leave the lane unintentionally, the system warns the driver.

Automated Emergency Braking System, AEBS



Reduces risk for, or mitigate a rear end collision with traffic ahead.

Traffic ahead is monitored by radar and camera sensor. The system 1st warn the driver when there is risk for collision and 2nd if driver doesn't react the brakes are autonomously applied.

Electronic Stability Control, ESC

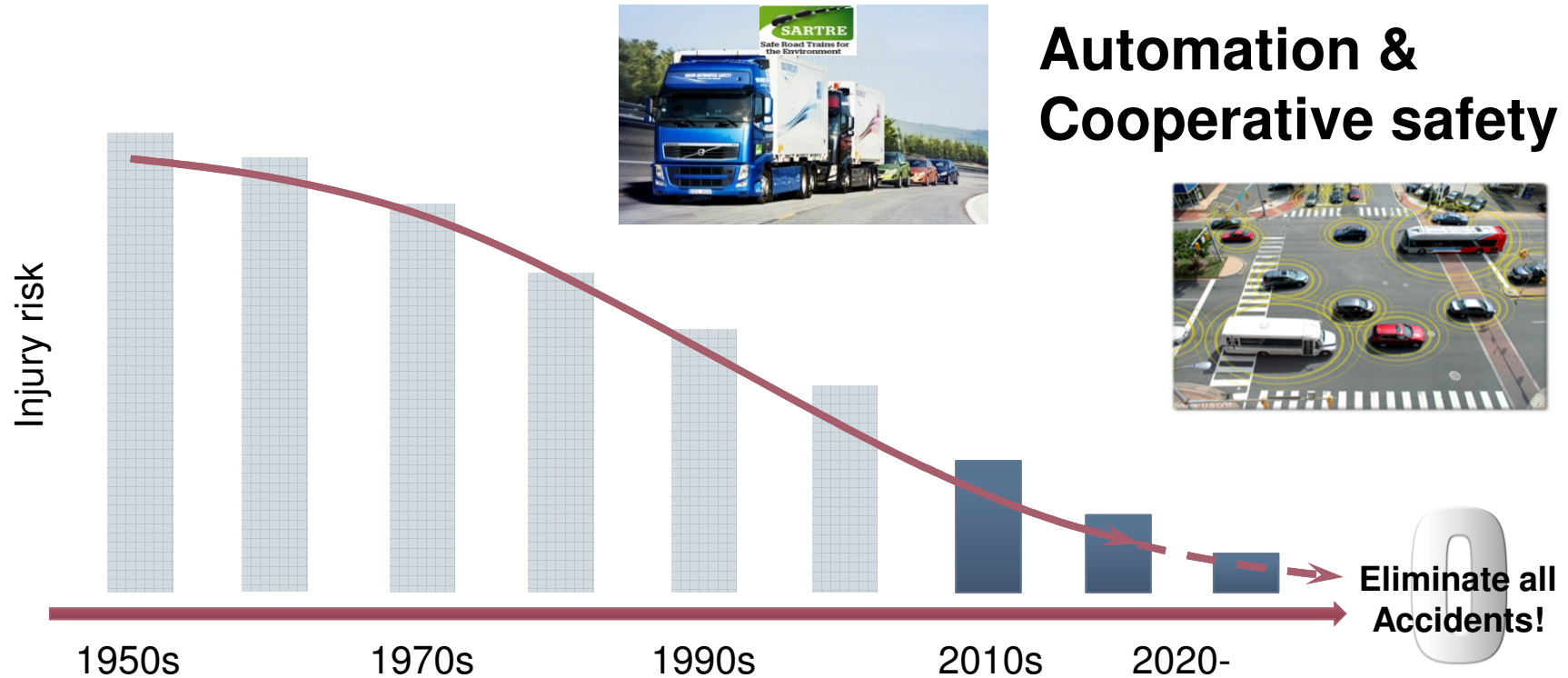


Reduces risk for roll or yaw instability due to misjudged speed, for example in a sharp curve, a highway exit and on a slippery road surface.

The system recognizes danger of rolling over or yaw instability by a combination of sensor data (yaw rate, lateral acceleration and steering wheel). The vehicle automatically reduces speed by engine torque reduction and individually applied wheel brakes.

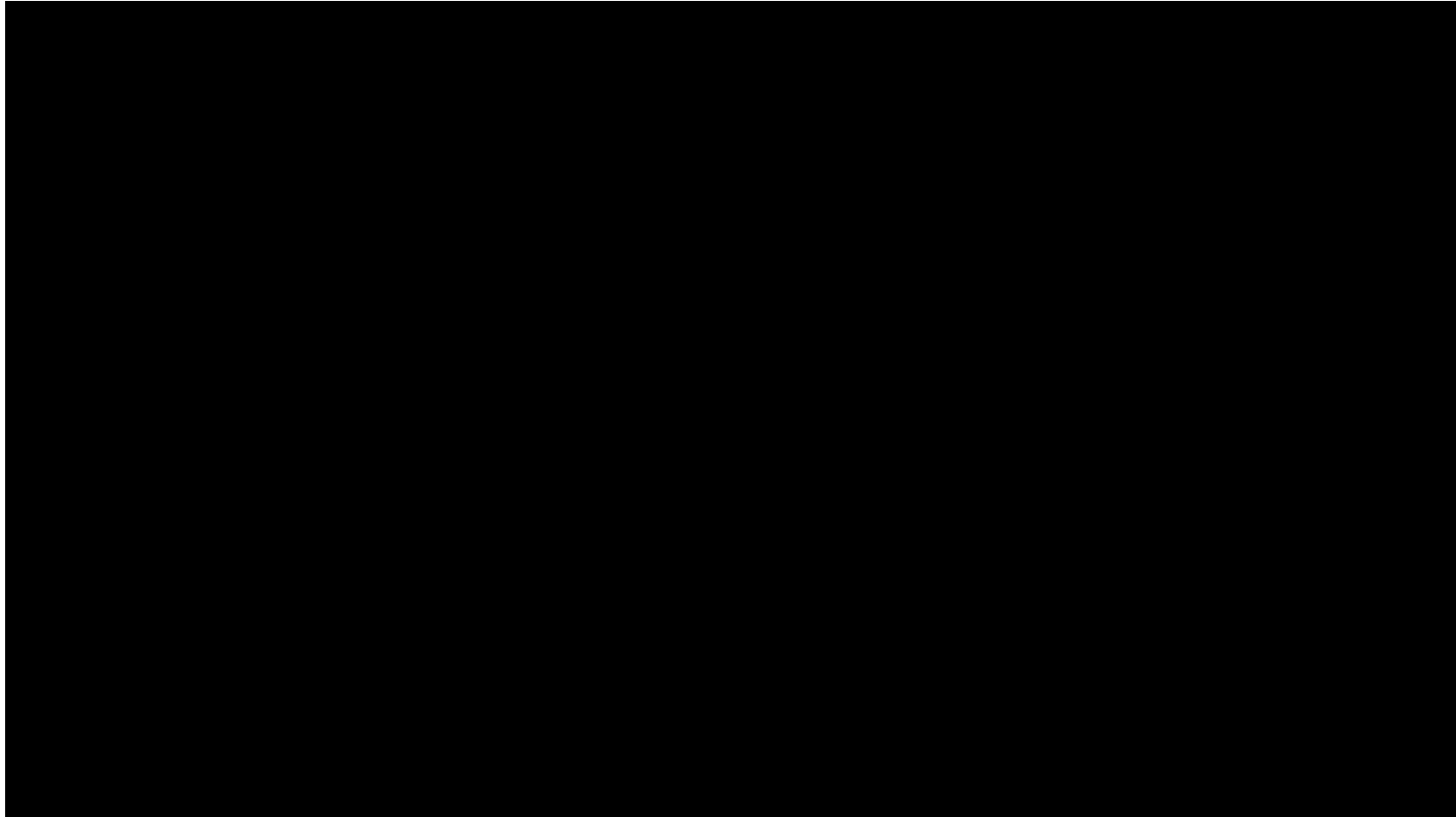


The new safety frontier

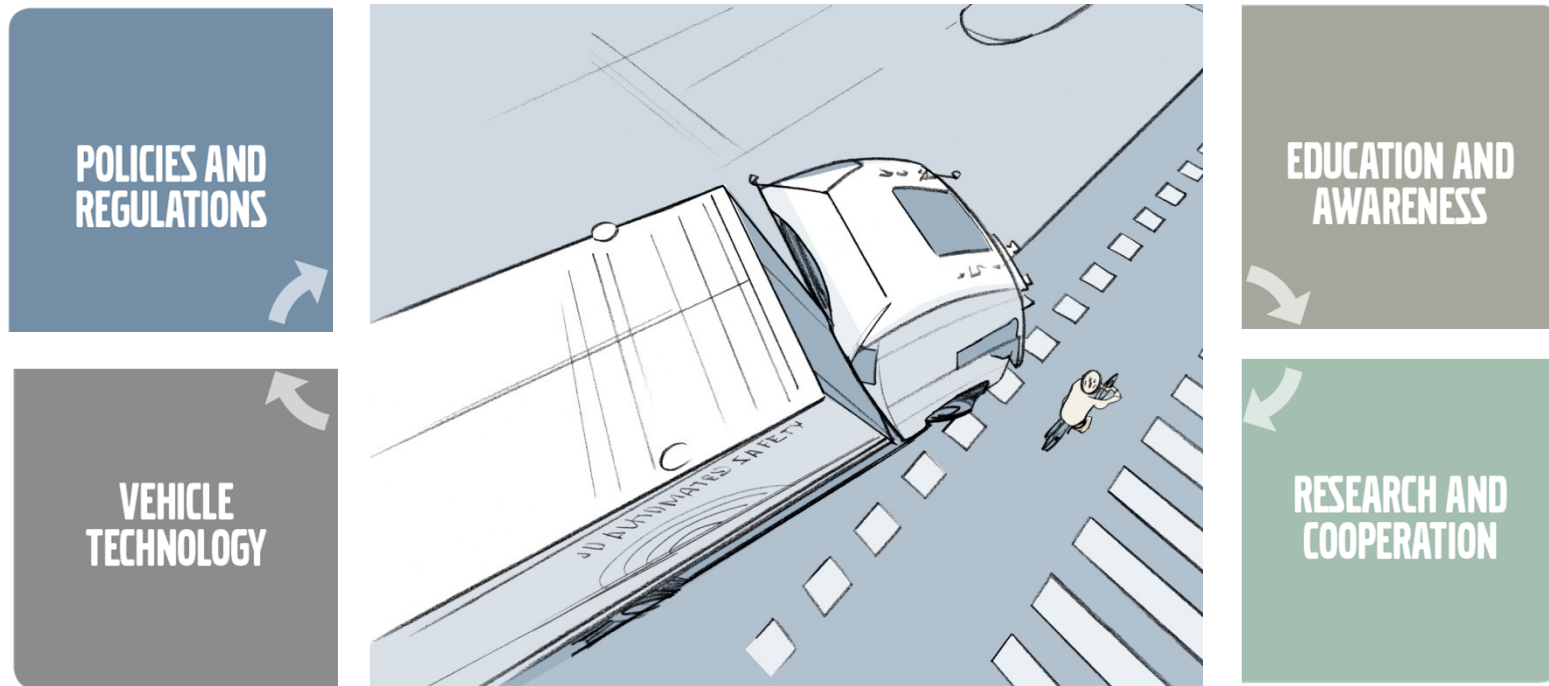


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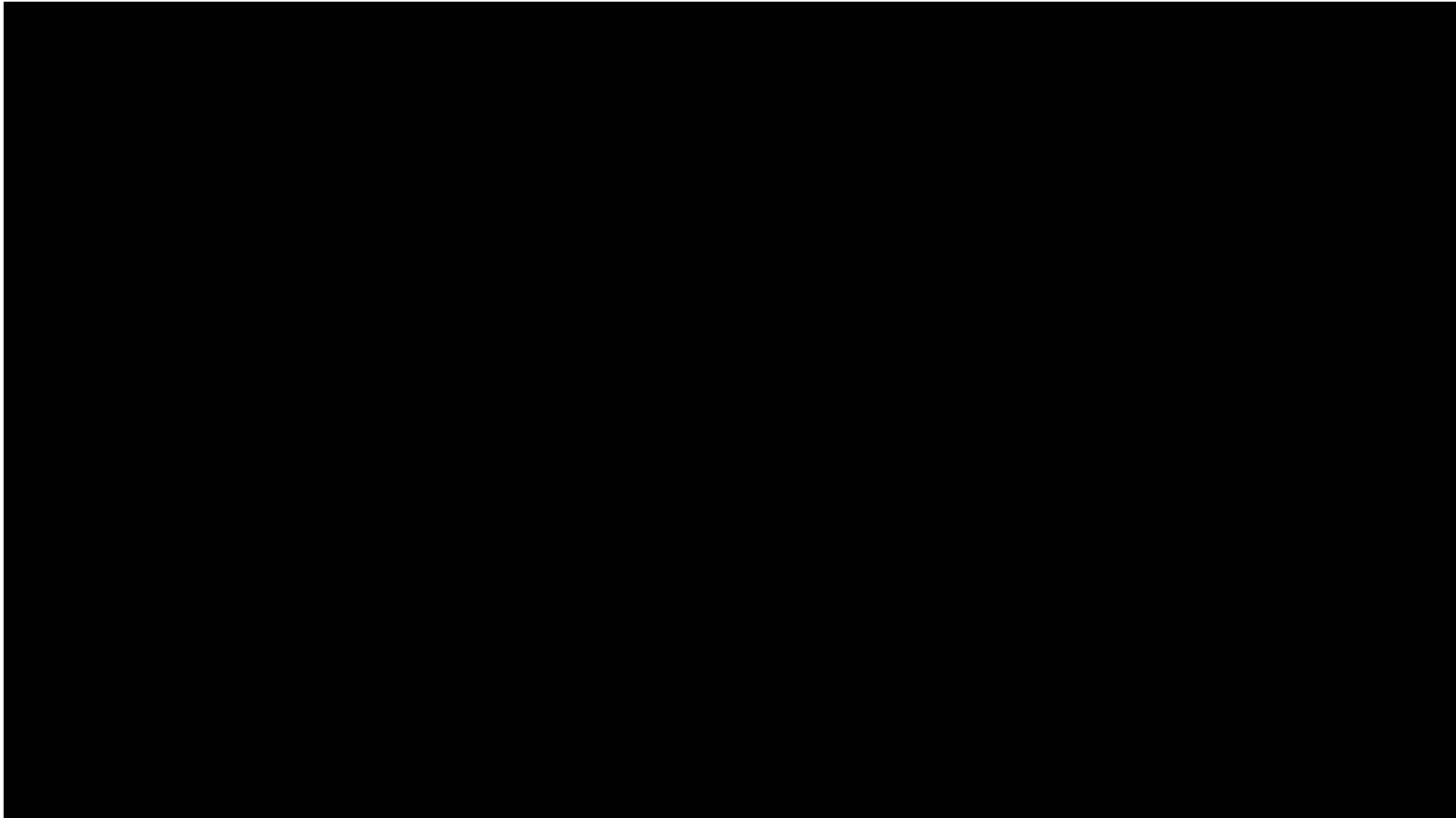


Zero Accidents – A Shared Effort





Thank you!



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