

# DIRECT VISION

## ACEA POSITION TO DESIGN NEUTRALITY

25<sup>th</sup> VRU PROXI

Web conference

Johannes Peter Bauer

Safety Director

19 October 2022

The logo for ACEA, featuring the word "aceea" in a dark blue, lowercase, sans-serif font. Each letter has a small teal dot above it, and the 'e's have a teal dot to their right.

VRU-Proxi-25-04



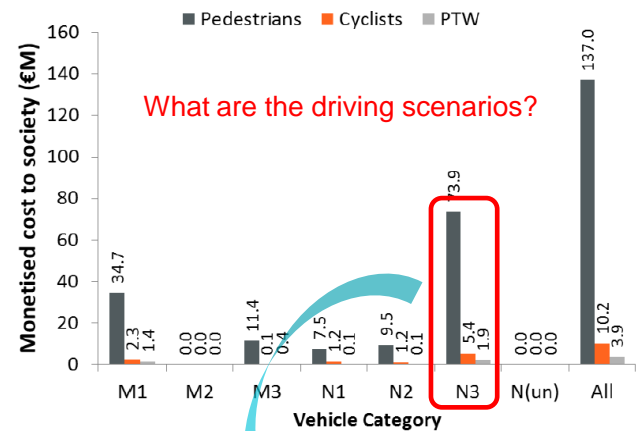
# DATA RECAP: ACCIDENT SCENARIOS

## EU28 Target Populations: DIR



Total Annual Societal Costs of DIR VRU Casualties (EU28)

- DIR target population
- Total annual societal cost to EU28 of €151M
- Collisions between N3 vehicles and VRUs have highest societal costs
- Pedestrians most affected casualty
- Ranking of societal costs:
  - N3>M1>M3>N2>N1>M2



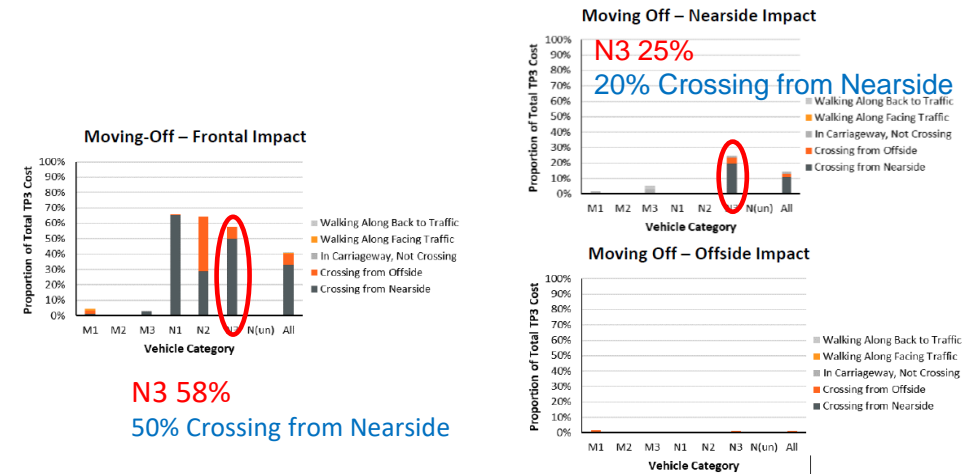
What are the driving scenarios?

the future of transport.

## Key Collision Characteristics: DIR



Key Vehicle and VRU Manoeuvres Characterising Pedestrian Collisions



## Data Recap

N3 accident fatality divided in:

- 58% Moving off – frontal impact
- 25% Moving off – nearside impact
- 8% nearside turn – frontal impact
- 8% nearside turn – nearside impact

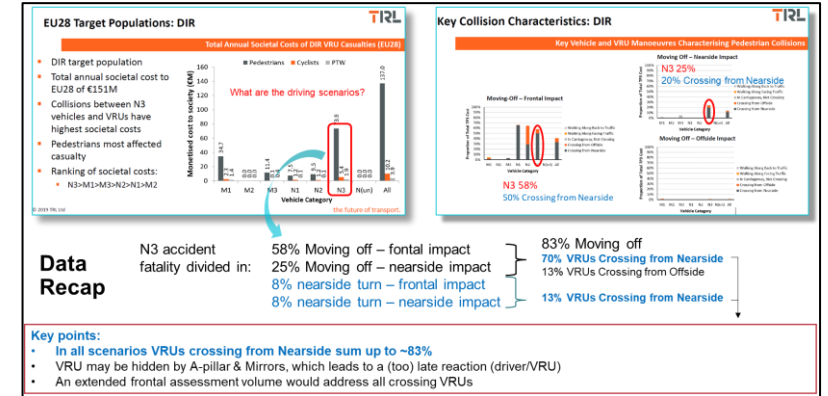
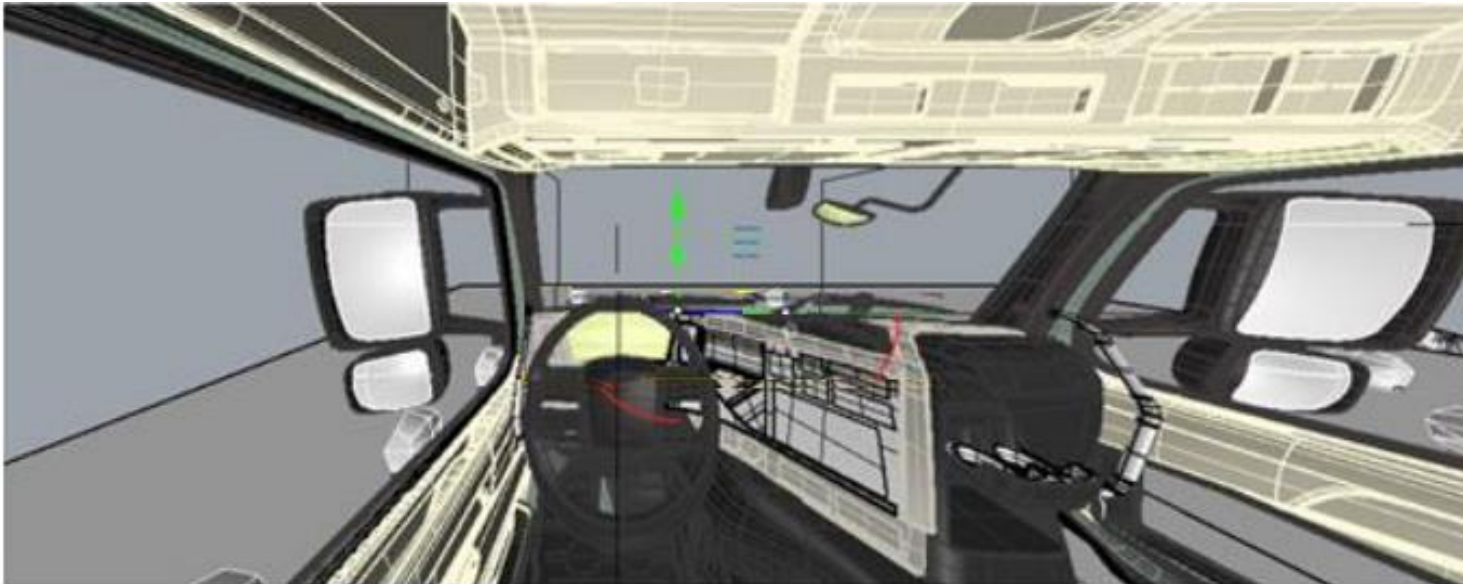
- 83% Moving off
- 70% VRUs Crossing from Nearside
- 13% VRUs Crossing from Offside
- 13% VRUs Crossing from Nearside

## Key points:

- In all scenarios VRUs crossing from Nearside sum up to ~83%
- VRU may be hidden by A-pillar & Mirrors, which leads to a (too) late reaction (driver/VRU)
- An extended frontal assessment volume would address all crossing VRUs

# FRONT VOLUME ASSESSMENT

## WHY SHOULD NEARSIDE COVERED IN FRONT VOLUME



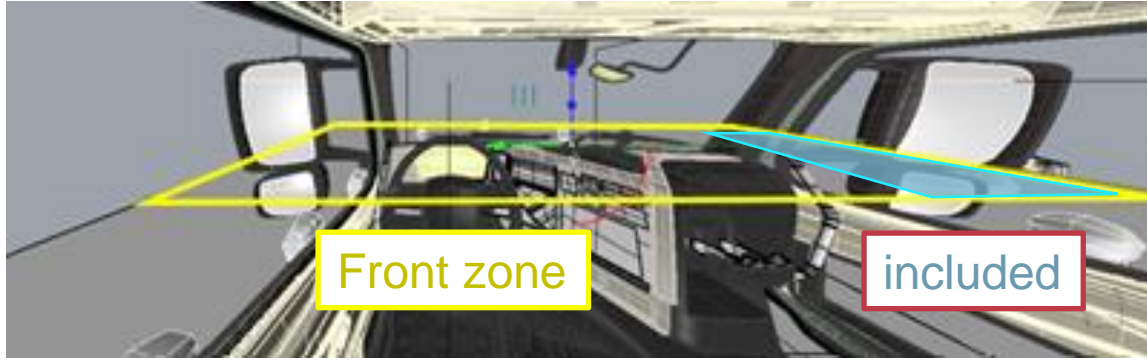
Driver's perception of field of vision: Blind-spots in combination with accidentology

### Tech/Design Neutral Front should:

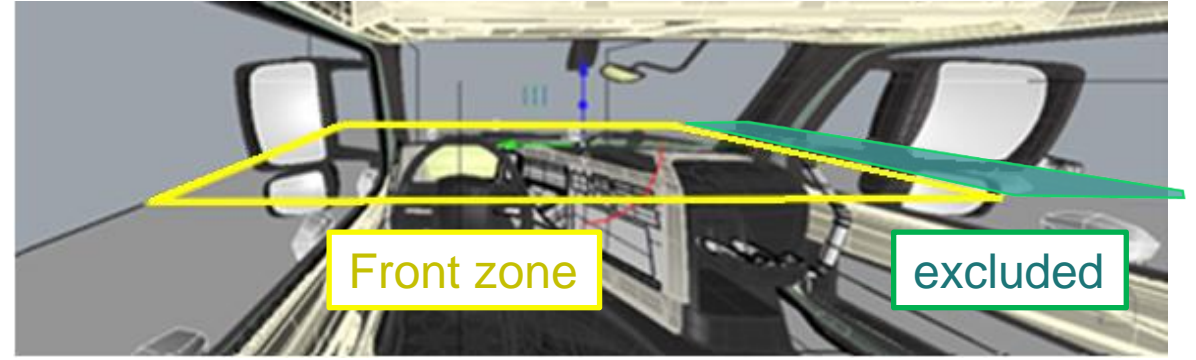
- Have high design neutrality, but also provide highest VRU safety:
- Be allocated within front volume direct in peripheral driver's field of vision
- Reflect and focus on all major accident scenarios (Nearside/Offside crossing with ~96% of accidents)

# NEAR SIDE FRONT AREA

2M AWAY FROM VEHICLE SHOULD BE INCLUDED



Option 3. Whole front Assessment volume



Option 4. 2+2m front Assessment volume

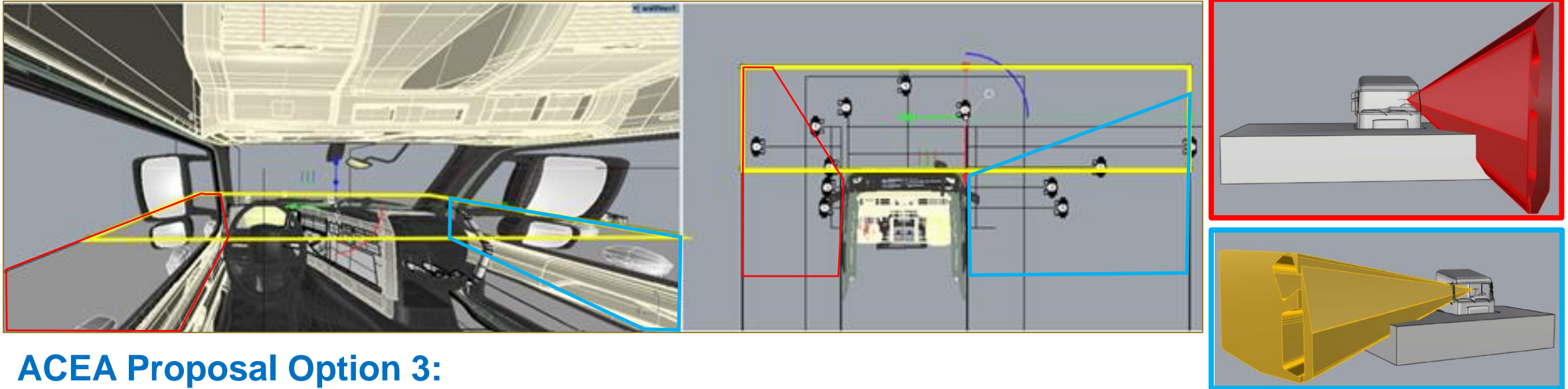


IAA CV real life check: Covered crossing VRU?



# ACEA PROPOSAL OPTION 3

## WHOLE FRONT VOLUME + SEPARATE SIDE VOLUMES



### ACEA Proposal Option 3:

- Increases design neutrality significant
- Reflects and focuses on all major accident scenarios
- Acceptance of current separate nearside and offside volumes and limit values for level 1 vehicles
- Very high correlation with VRU distance, although some VRUs might be seen at 0 mm >2.5m (what should be perceived as good)



# acea

REPRESENTS EUROPE'S 16 MAJOR CAR, VAN, TRUCK AND BUS MANUFACTURERS

## **ACEA**

European Automobile  
Manufacturers' Association

+32 2 732 55 50

info@acea.auto

[www.acea.auto](http://www.acea.auto)



[twitter.com/ACEA\\_auto](https://twitter.com/ACEA_auto)



[linkedin.com/company/acea](https://linkedin.com/company/acea)



[youtube.com/c/ACEAauto](https://youtube.com/c/ACEAauto)