BASt Tests: AEB VRU for HDV

Test Results of a Series Production Vehicle
Basics – Cross Traffic AEB

- Tests are carried out with different impact positions
- Impact position is controlled by the timing the dummy starts
- The lower the number:
  - the later the dummy starts,
  - the less time the dummy travels in front of the vehicle,
  - the more demanding is the situation.
Test Data

CPNA75 20 km/h Pedestrian day AVOIDED!

- **Phase 1**: "Haptic Warning" (~1.4s)
- **Phase 2**: "Emergency Braking"

No Warning recorded

Vehicle Cab

minimum distance 1.11m
Overview of Scenarios - Crossing

CPNC: Hidden Child (5 km/h)

CPFA50: Running (8 km/h)

CPNA25: Walking (5 km/h)

CPNA75: Walking (5 km/h)

Initially hidden behind these cars
Expected Performance

- VRU in cross traffic become critical very late before the impact
- Good strategy: brake as hard as fast as possible
- Current R131 prevents AEBS from braking hard and late by mandating a warning phase of 1.4 seconds

- Impact Position has a tremendous influence on performance:
  - „The more to the left* the pedestrian impacts, the more time the pedestrian travels as a relevant target in the vehicle path“.
Avoidance on this line
mitigation below this line
Results when tested according to R152

![Graph showing test results with speed reduction in km/h on the y-axis and initial speed in km/h on the x-axis. The graph includes a line and points labeled 'cpna50'.]
Conclusion

- There is only one vehicle on the market with AEB Pedestrian
- The vehicle avoids up to approximately 20 km/h when testing according to R152

- We should be very careful with setting performance targets, even for the future, unless vehicles on the market show that they are achievable.