

The background features a stylized world map composed of small orange dots. Overlaid on this are several curved lines: a solid orange line, a dashed white line, and a dashed orange line. A semi-transparent grey rectangular shape is also visible in the upper right quadrant.

# ***Trailer Capacity Assessment***

*Helping fleets make transport sustainable and efficient*

**Jörg Lützner**

*Head of Innovation Management Business Area Smart Mobility*

# Situation Today

## Room for Improvement

615,5 million deadhead miles\*

25% empty drives \*\*

71% capacity utilization \*\*\*



**Economic**



**Structural**



**Regulatory**



**Operational**

- › Real time visibility
- › Trailer utilization

\* \*\* Sources: KBA; Base Year: 2018, 2020

\*\*\* Source: Frost & Sullivan, December 2018; Global Digital Freight Brokerage Market Opportunities

Environmental damage  
and CO<sub>2</sub> Emission

Potential  
to optimize



**TODAY**

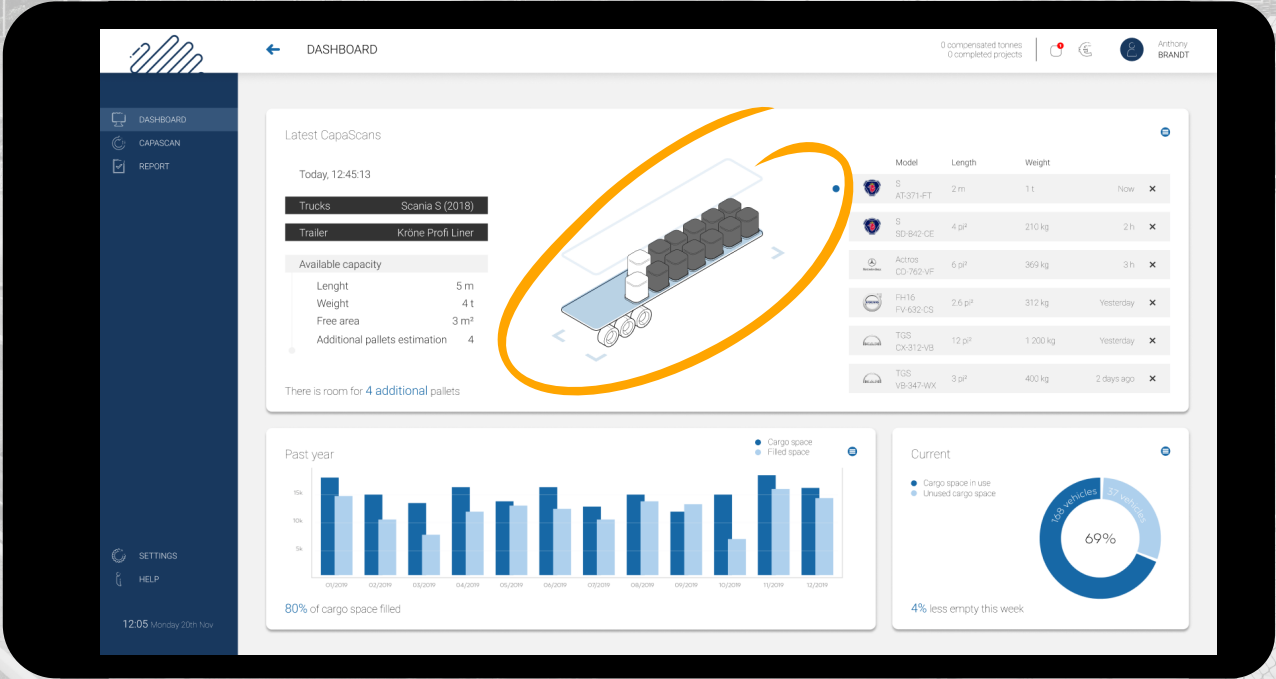




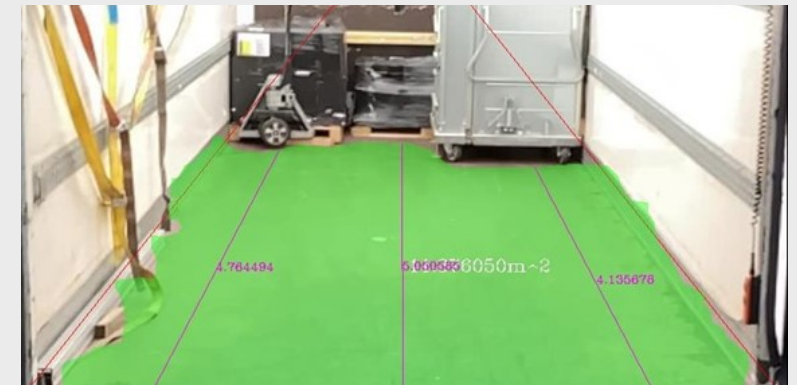
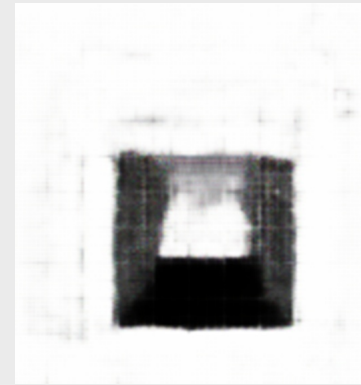
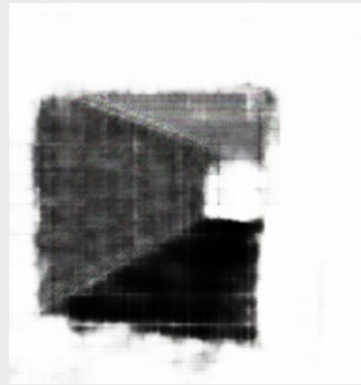
# Detecting free cargo space



- › Artificial intelligence
- › Neural network
- › Technology provider



# Leveraging knowledge from ADAS/AV activities



Pallet detection

Semantic segmentation

Result

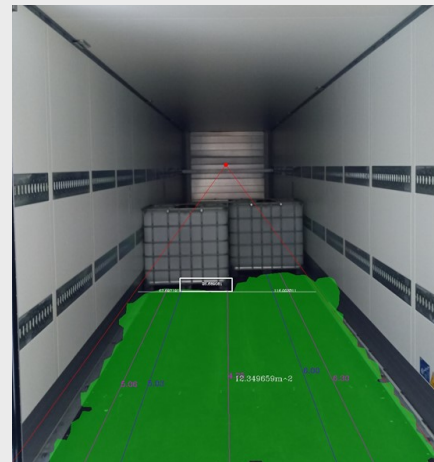


# First tests with promising results

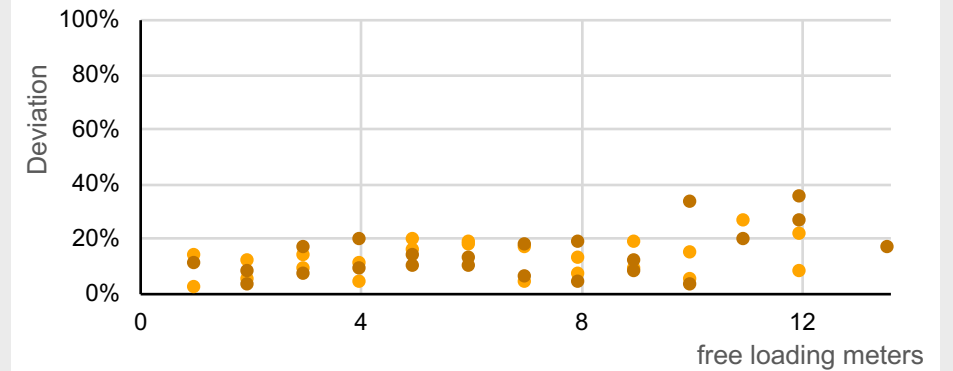
## Independent of mobile device...



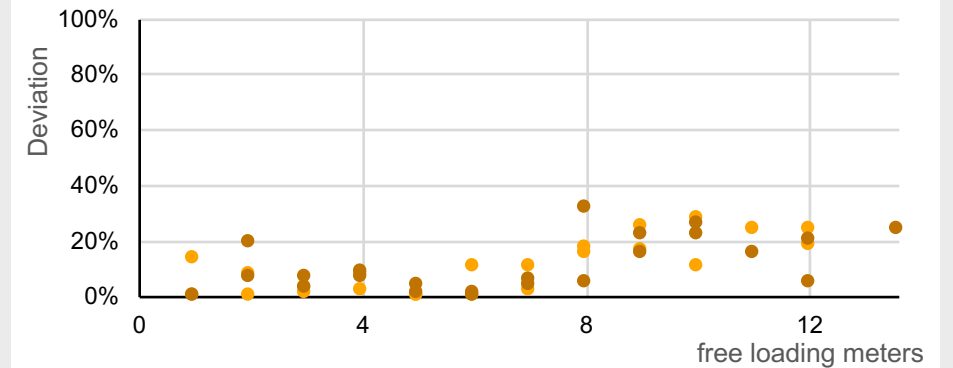
Test scenario:  
training data: 200  
test data: 50  
 $\mu = \sim 12\%$



### LG Q60



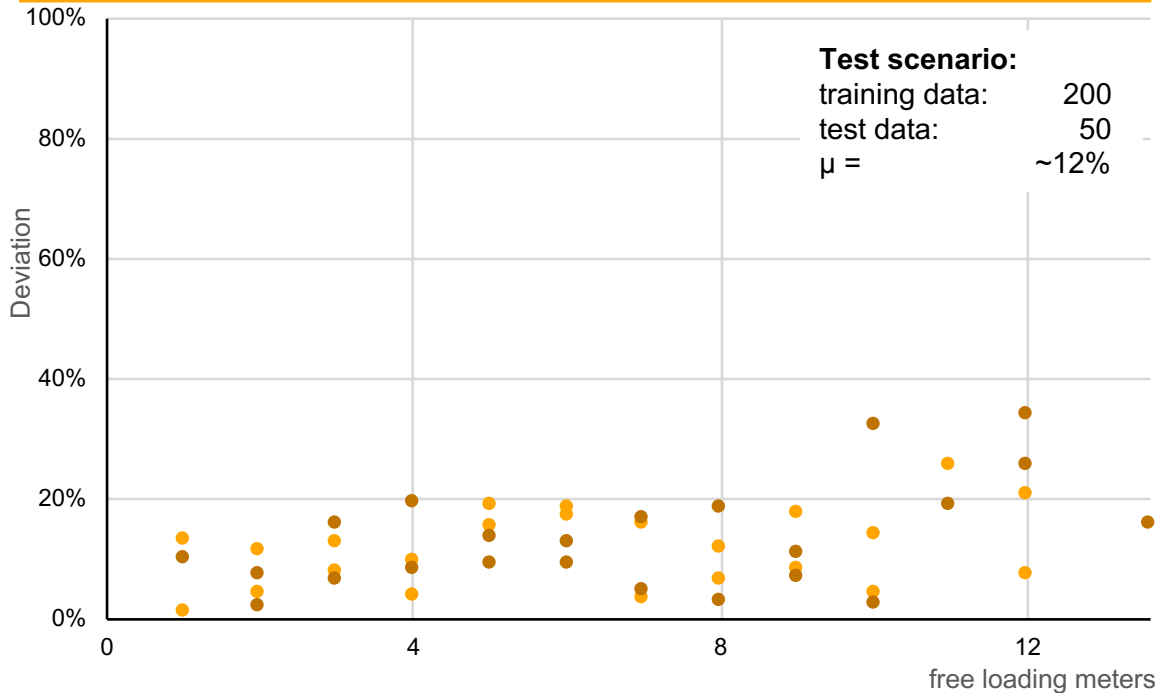
### Samsung S10



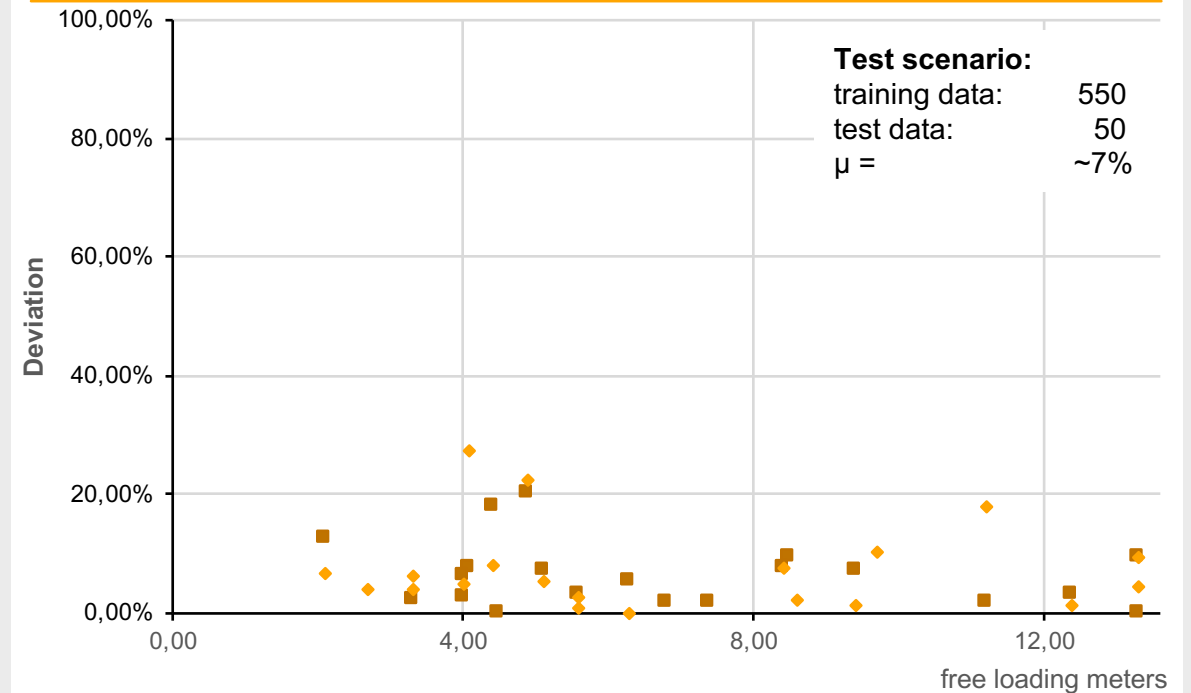
# Progress through further data



## Performance in September



## Performance in December



**Artificial intelligence**

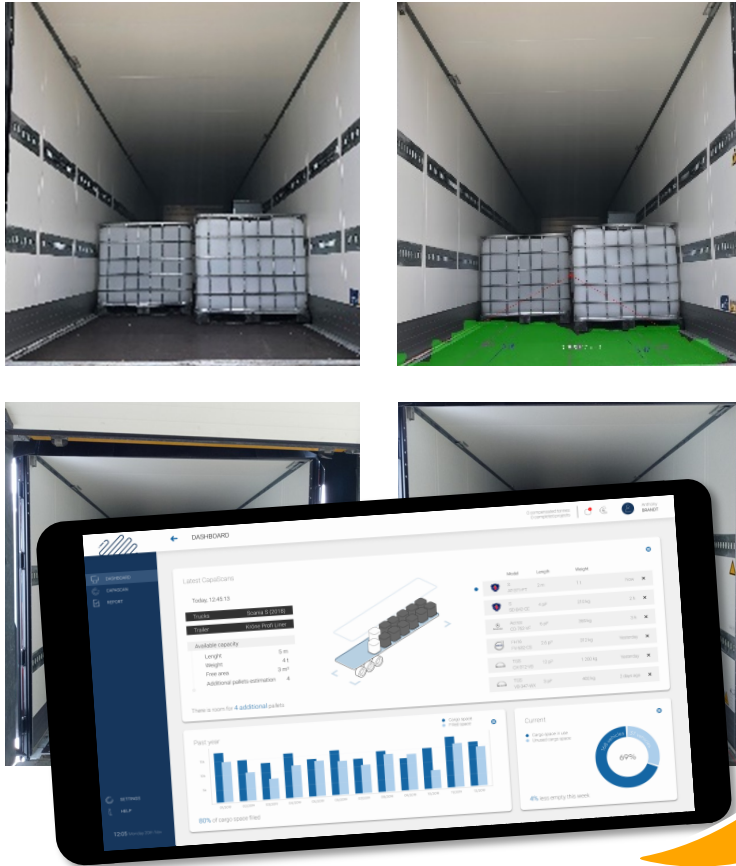
Free space estimation will improve with further training



# Aligned to transportation process



## Capacity Assessment Data



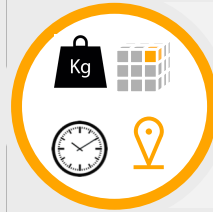
## Transportation Management



## Digital Freight Exchange



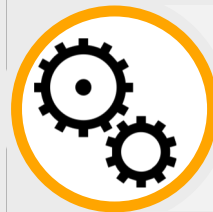
# Technology as enabler for value add



**Technology provider**



**Improved transparency for fleets**



**Enable automation**



**Reduced CO<sub>2</sub> emissions**  
through improved trailer capacity utilization



The background features a light gray gradient. A world map is rendered in a dotted, orange-yellow pattern. Overlaid on the map are several curved, dashed lines in white and orange, suggesting a sense of motion or global connectivity. A semi-transparent gray rectangular shape is also visible in the upper right quadrant.

***Thank you!***