

TRANSFORMERS



& Aeroflex innovations



- Introduction Van Eck Group
- Transformers
- Load Optimization trailer
- Results
- Aeroflex - Long-Haul Vehicles



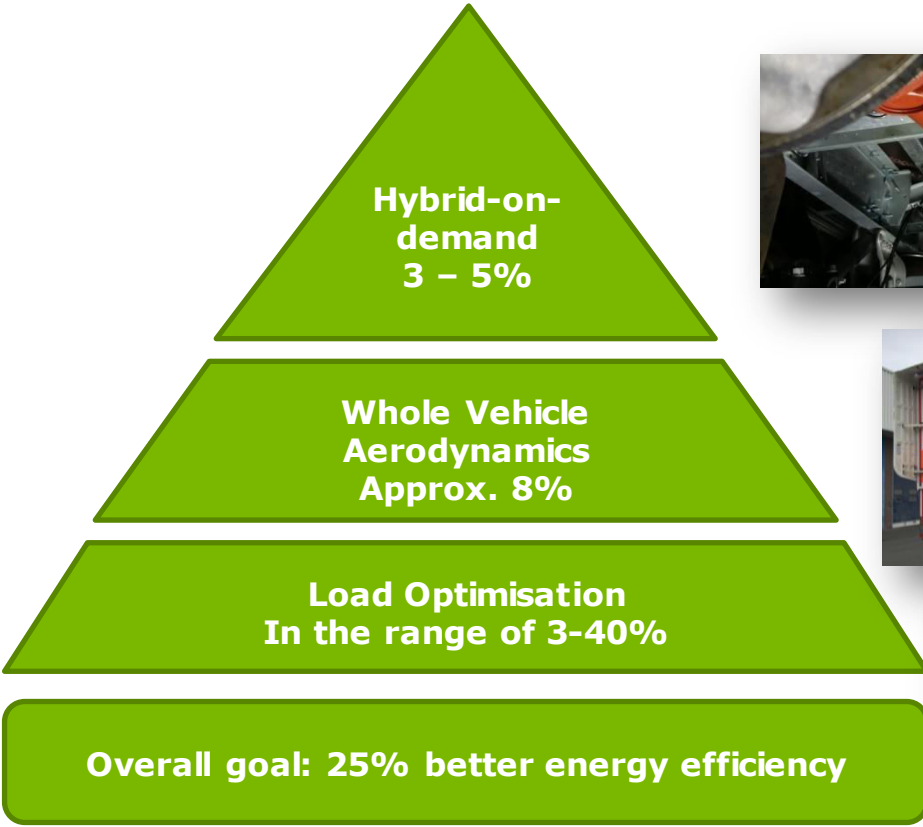
This project has received funding from the European Commission through the Seventh Framework Programme for research, technological development and demonstration under Grant Agreement No. 605170.

TRAILER MADE
95 YEARS

The Van Eck Mission:

- Innovative solutions for loading capacity and efficiency
- Specialist in the maximum use of the available volume
- Participate in Aeroflex, Clusters 2.0, Transformers





Primary focus of the evaluation and potential estimation:

Impact on diesel fuel consumption

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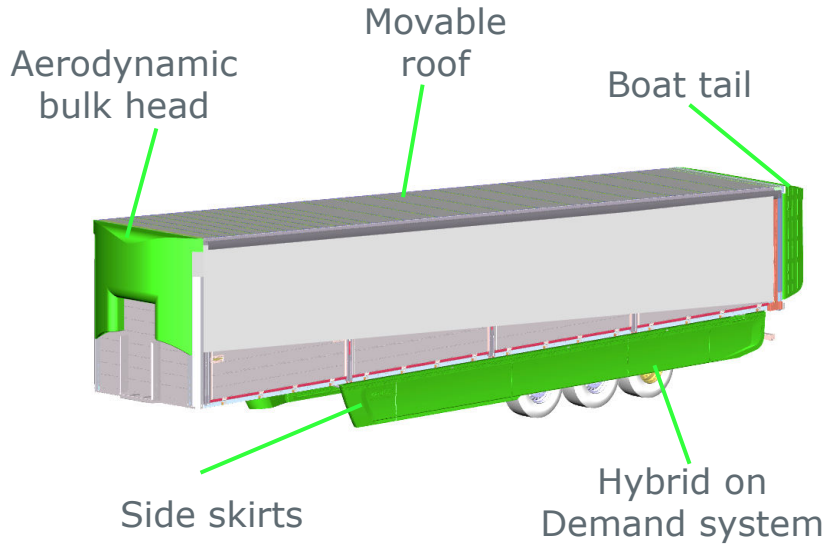
Impact on CO2 emission

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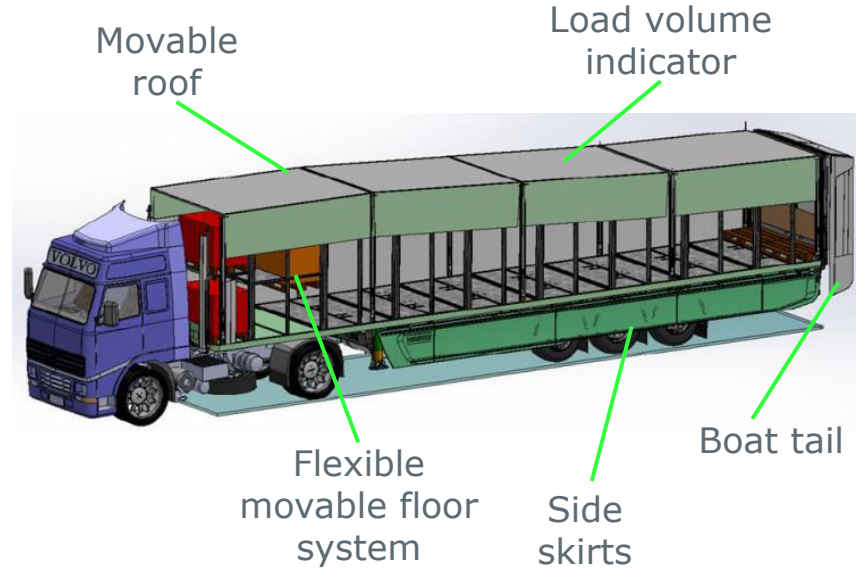
Impact on energy consumption

→ To avoid confusion, only fuel consumption (FC) is mentioned here

→ Per ton.km!



Energy Efficiency Trailer
Schmitz Cargobull



Load Optimisation Trailer
Van Eck Group

Load Optimisation

The VEG Load Optimisation Demonstrator



Ton Bertens

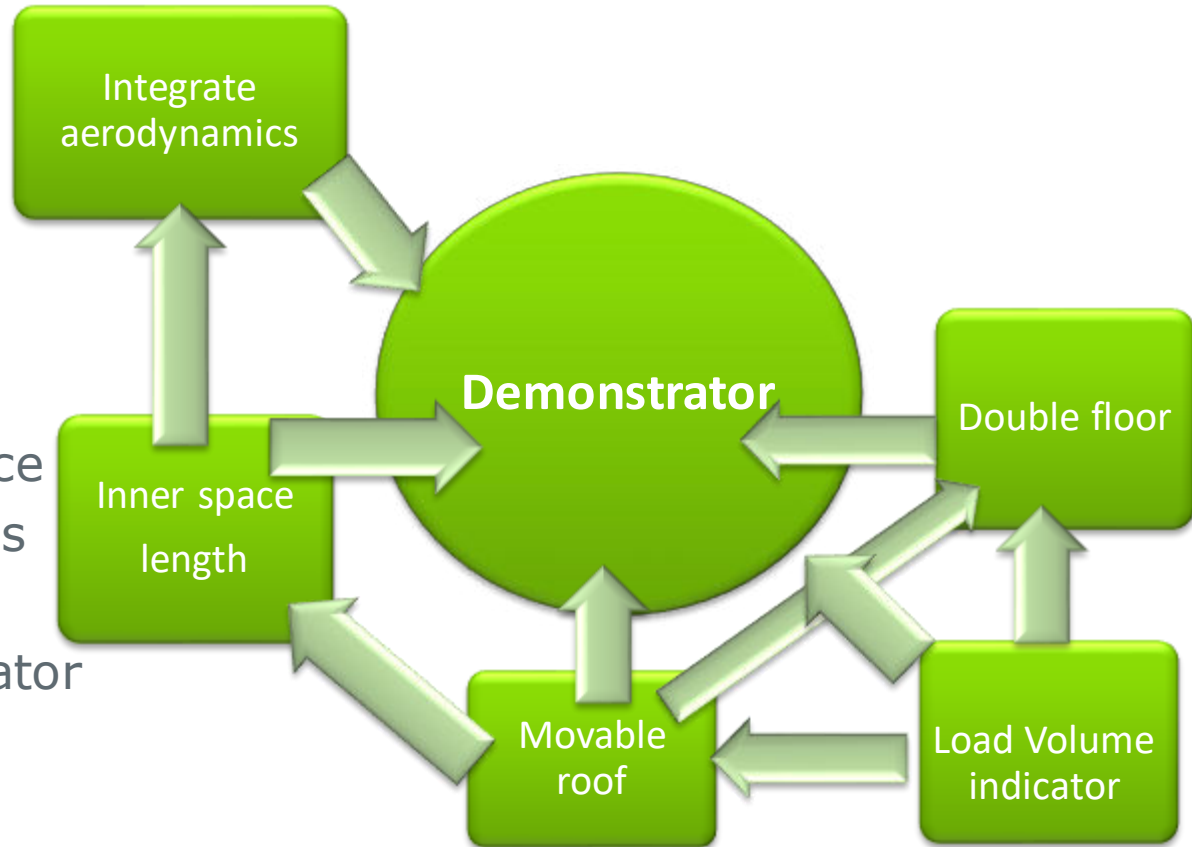
Van Eck Group

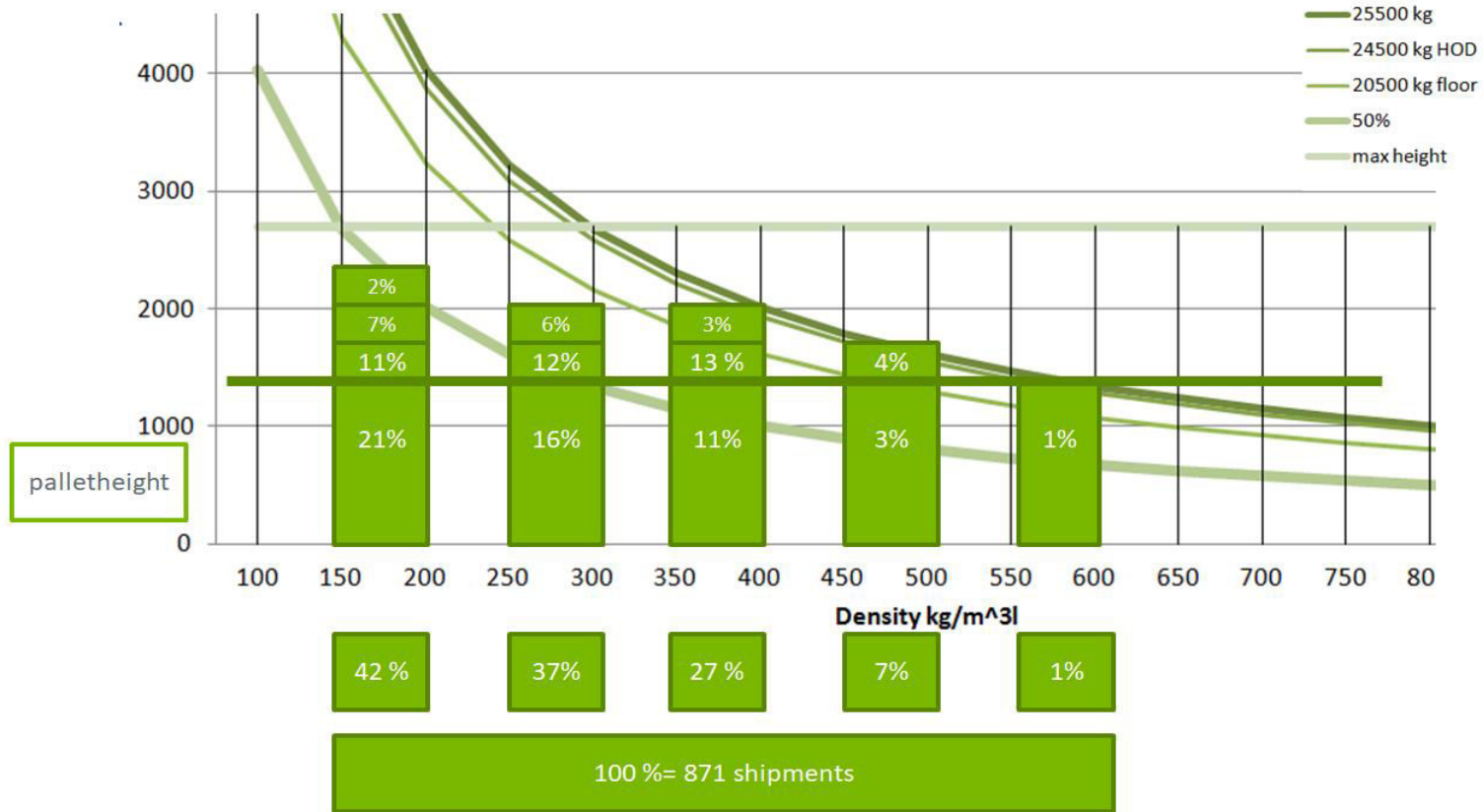
19-02-2019

Bucharest



- ❑ The Challenge :
- ❑ Integrate all innovations in one Demonstrator!!
- ❑ Aerodynamics
- ❑ Increase inner space
- ❑ Double floor options
- ❑ Movable roof
- ❑ Load Volume Indicator







When double floor is not used, the trailer must offer the transport capacity of a standard trailer



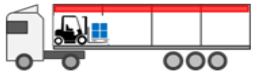
Double floor and moving roof must enable maximum utilization of the transport capacity. Guidelines for max height (1.2m) double stack pallets on itself limits load efficiency leaving 40 cm(15%) not used.



Double floor must improve the mixed pallet transport capability. Huge scope exists in warehouses that handle and ships mixed goods.



Moving roof system must be easy to operate

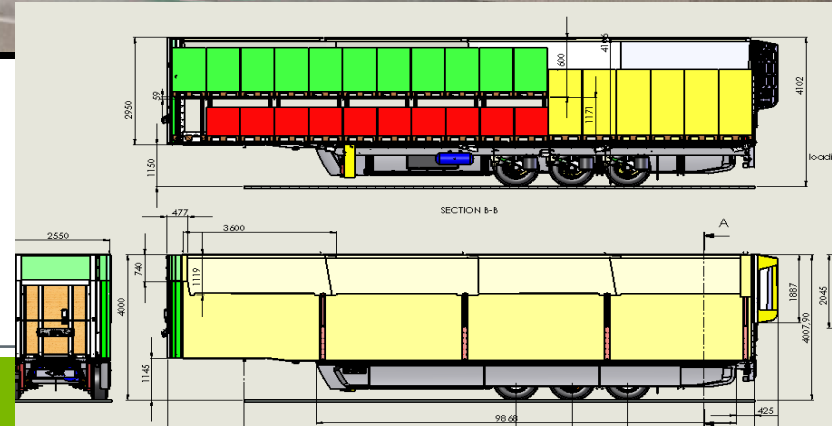


Additional height during loading and unloading can benefit shippers use transport capacity more efficiently



33 pallets can be (un)loaded in 20 to 25 minutes, and the new features must not increase the loading time per pallet

TRANSFORMERS The innovations build



Hybrid-on-Demand:

Target: 3 to 5%



Aerodynamic features:

Target: approx. 8%



Loading efficiency:

Target: 3-40%



Motorway: 2.2 to 3.8% fuel consumption (FC) reduction
Urban heavy traffic: 6 to 7%

Up to 14% drag reduction,
5.7% FC reduction at 80 km/h

1 additional pallet on floor (3%);
Double floor: additional floor space;
+10 pallets = +30% = +16 minutes

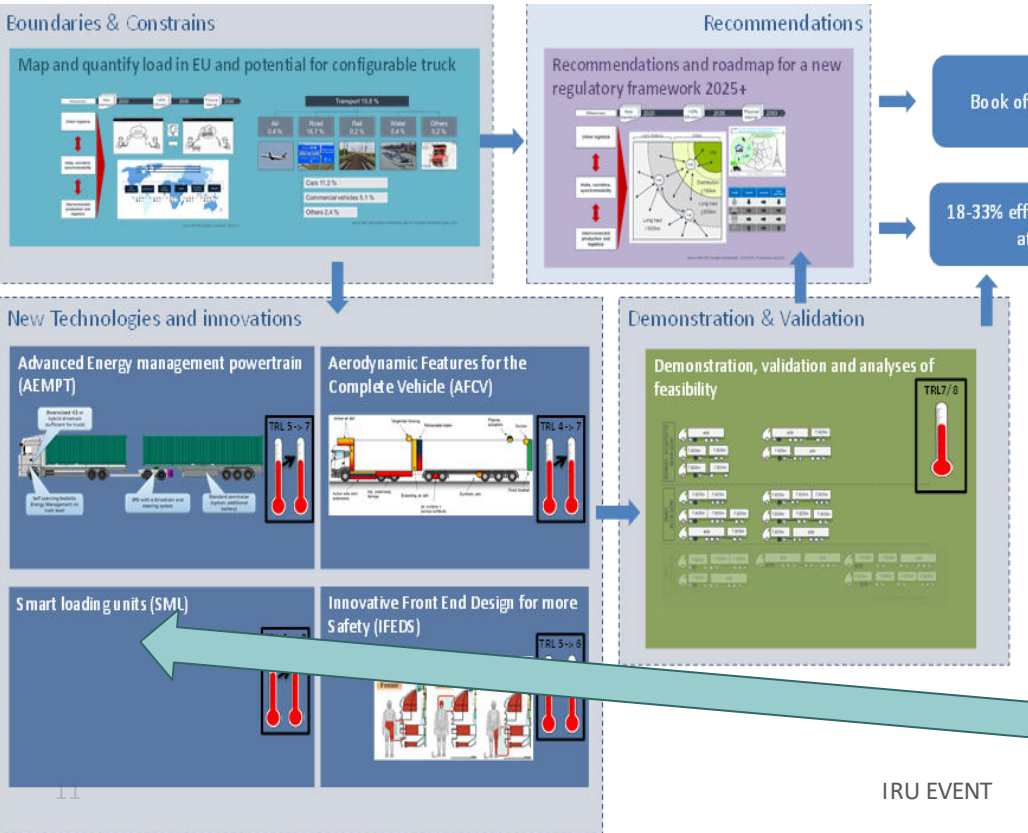
Aerodynamic and Flexible Trucks for Next Generation of Long Distance Road Transport

AeroFlex , overall target and ambitions

Overall efficiency gains of at least 18-33% by 2025 for the complete vehicle in long-haul road transport in a multi-brand application and a multimodal context through

- Optimised energy efficiency
- Optimised aerodynamics
- Optimised (un)loading

Standards for a flexible regulatory framework



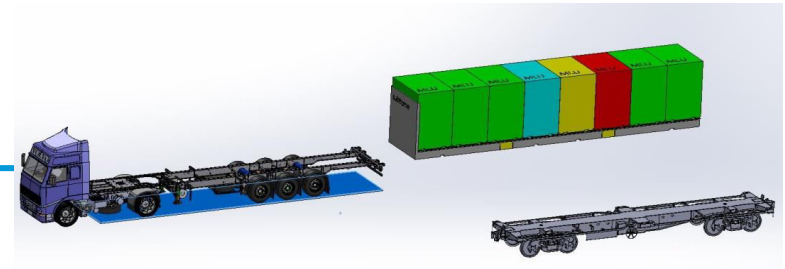
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18-33% effi

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Smart Loading Units for overall efficiency gains for volume and weight freight and by more effective loading space utilization:

- Intermodality
- Modularization-Standardization-Clusters 2.0
- Cargo Cam/ Label to record filling level
- Planning Software Optimization



label											stackable		
	dimension												
type	width	length	height	weight									
EP	1	2	0	8	0	1	6	5	0	6	5	0	S



CARGOCAM

Camera uses image processing to monitor the cargo space and collect data on current load status

- Camera mounted inside the trailer uses image processing to detect changes in the cargo space
- Records trailer occupancy, unsecured or loose cargo, loading times, theft, and damages occurring to and within the trailer
- Provides on-demand information about cargo and cargo space availability
- User oriented platforms: [CargoCompass](#) web and [CargoLink](#) app

Value to Customer

- Allows fleets to precisely determine assets' condition throughout a trailer's journey
- Identifies loaded area and available trailer capacity in square meters and utilization percentage
- Helps fleets to optimize operations, their trailer park, and customer trailer allocation by offering analytics of a trailer's volume usage
- Helps to allow for a timely response to theft, loose cargo and cargo integrity

WABCO



Aerodynamic and Flexible Trucks for Next Generation of Long Distance Road Transport

Thanks for your attention

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