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LOGISTICS

AutoLog
Automated driving on vehicle terminals

The future of vehicle logistics and beyond?!

Current challenges in **automotive logistics** need innovative solutions for efficient and flexible processes.

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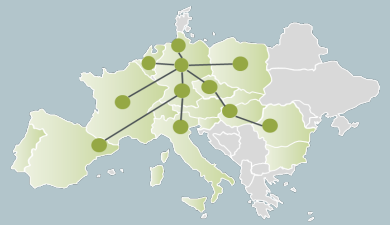
Cross brand logistics functions



International, cross brand transport network

~ 5 Mio. veh. p.a.
~ 150 markets

>10 Vehicle dispatches

~200.000 rail wagons p.a.

~400.000 truck loads p.a.

Increasing volatility & transport volumes
(dynamic market environment)

Increasing requirements for efficiency, flexibility and environmental goals

Shortage of skilled workers

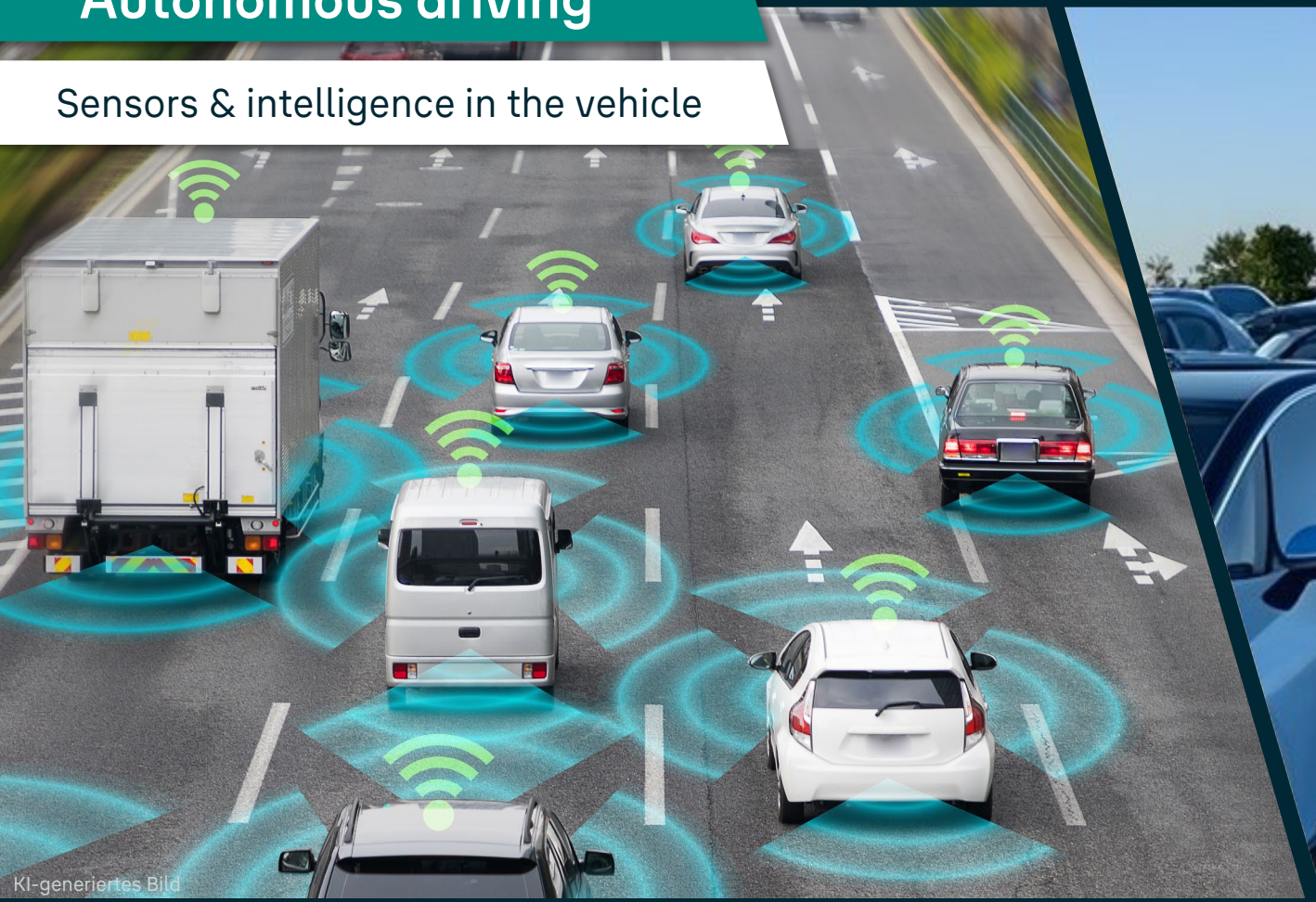
Limited logistics areas

Source: VW Konzern, VW Picturepool, Freepik

Automated driving enables the automation of vehicle movements for various vehicle models.

Autonomous driving

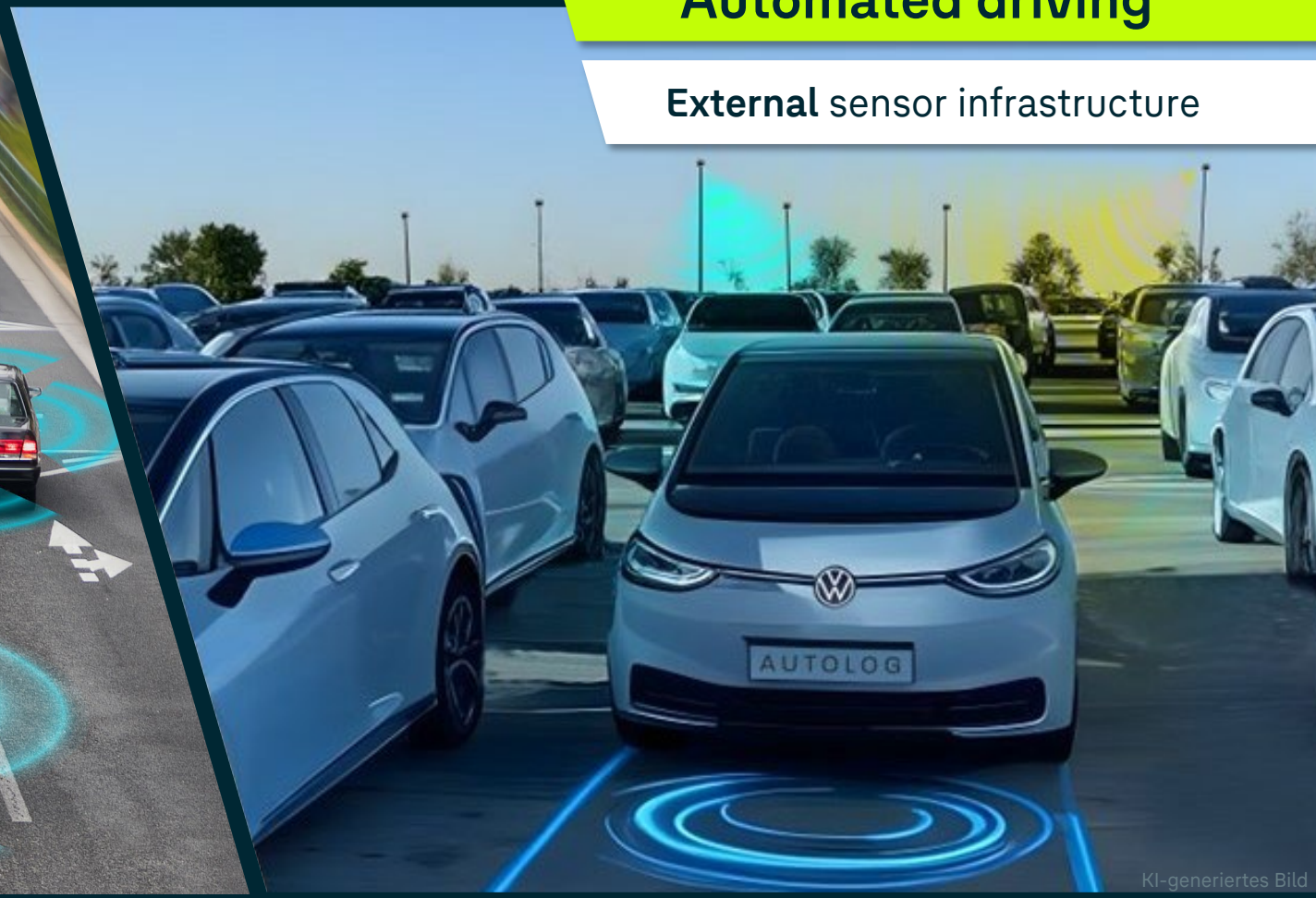
Sensors & intelligence in the vehicle



KI-generiertes Bild

Automated driving

External sensor infrastructure



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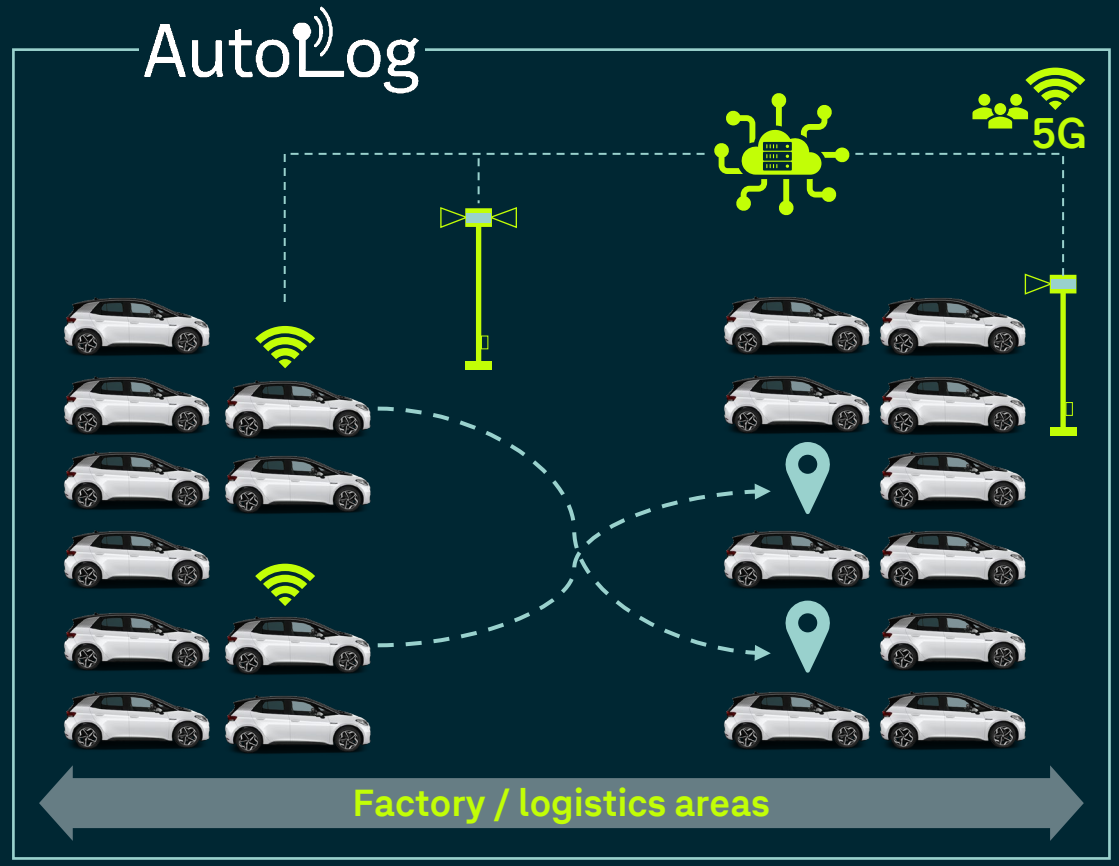
With automated driving, intelligent infrastructure controls vehicle movement in an efficient and flexible way on logistics areas.

An intelligent, infrastructure-based overall system monitors and controls all automated vehicle movements in the public 5G network.

Driverless vehicle movements enable a paradigm shift in logistics process design

e.g., higher space utilization and flexible process control

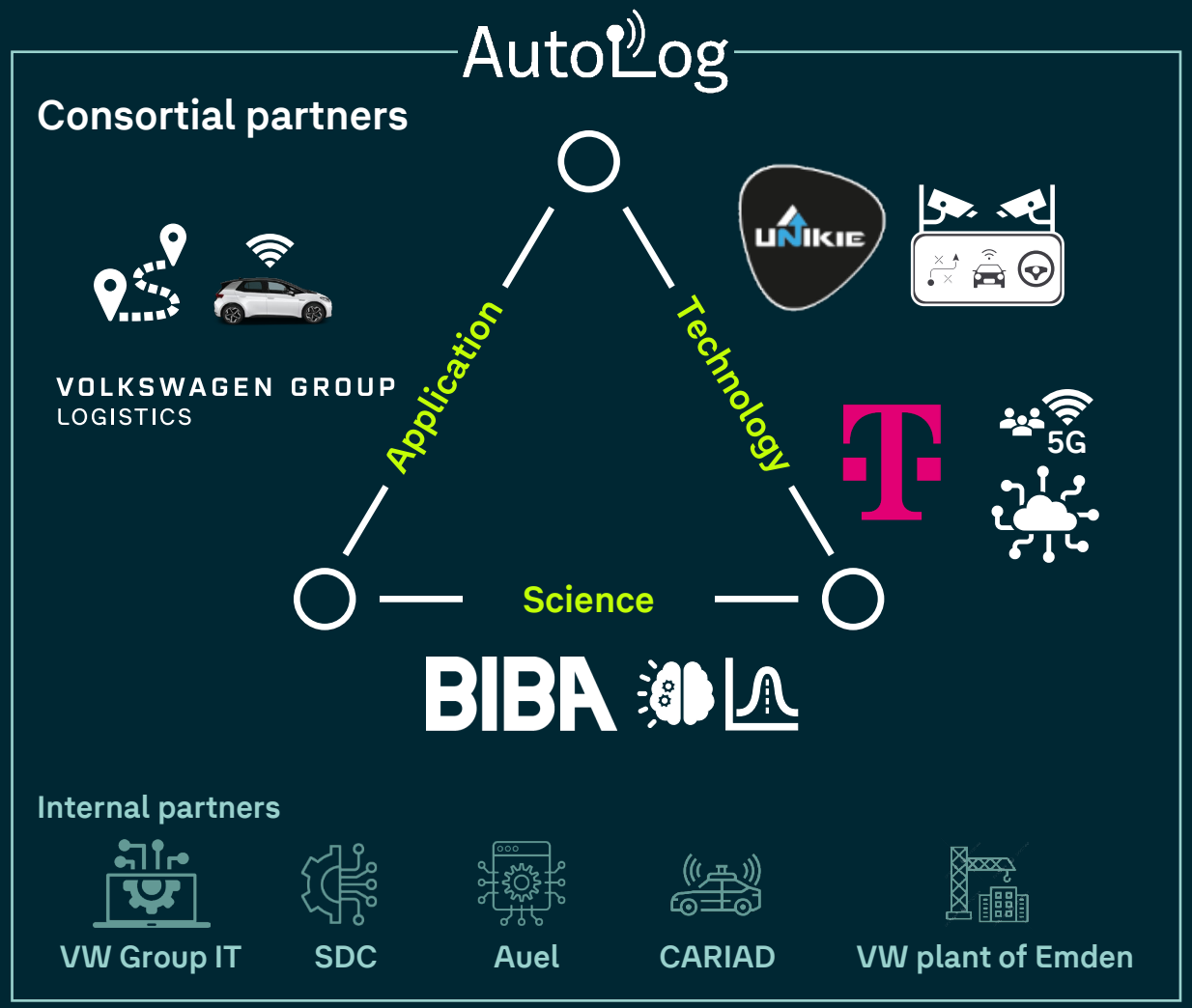


Profitability
Efficient, transparent & flexible processes

Scalability
using existing infrastructure (public 5G) & standardized processes

Transferability
transferable to comparable logistics areas using ISO standards

In cooperation with 3 consortial and further internal partners Volkswagen Group Logistics is working on the **AutoLog project**.



Focus research areas

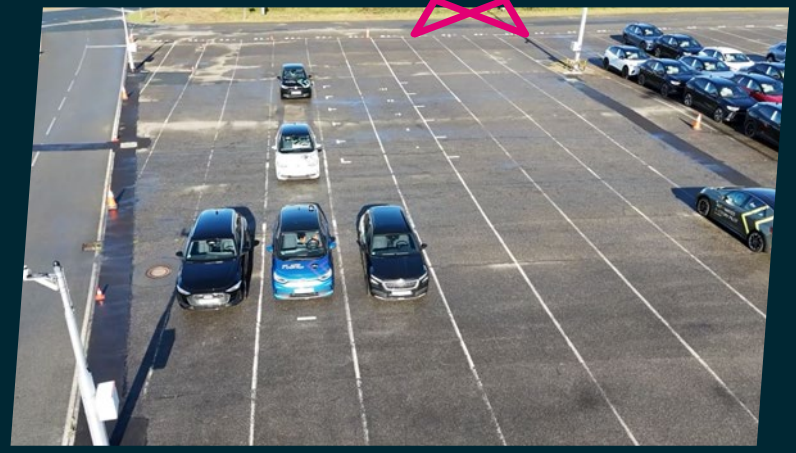
Connectivity within the **entire system** via **public mobile network (5G)** and **Multi Access Edge Cloud (MEC)**

Developing **logistics concepts** using automated driving technology

Modeling and implementing a **terminal simulation model**

Designing **human-technology interaction** and examining occupational safety

The test field infrastructure will be optimized in phases in order to test economical, standardized, and scalable solutions.



4G/5G Public Mobile Network
incl. Quality on Demand function

LiDAR sensors

Multi Access Edge-Cloud

1. LiDAR sensors transfer perception data of the area.
2. The Unikie application calculates safety features and trajectories in the cloud.
3. Driving missions are transfered to the vehicle.

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AutoLog is testing logistics concepts with automated driving since June 2025 and already achieved a crucial milestone in September 2025.

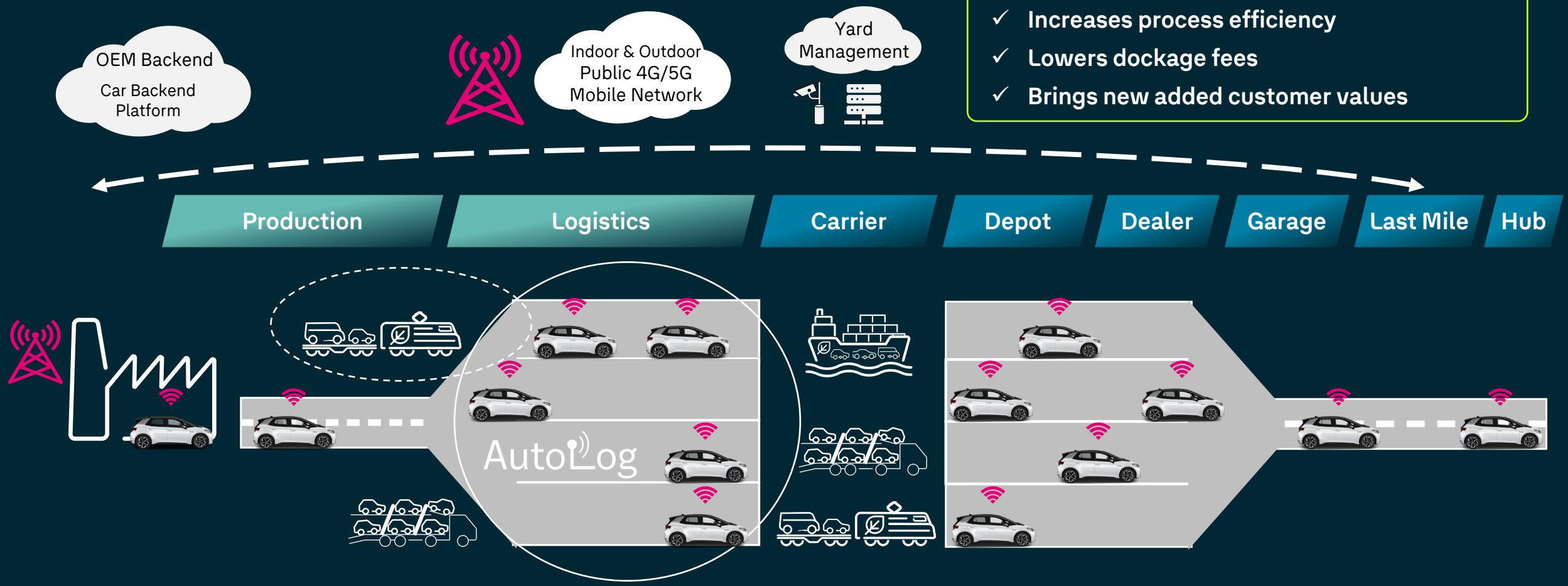
Test field at the vehicle yard of Emden

- 17 poles and 25 Lidar sensors
- Driving tests in a dynamic environment (highly frequented roundabout).
- Perception Infrastructure (3D Digital Twin) and Unikie Marshalling System (Trajectory Planning, Vehicle Control) installed and running
- Telekom 5G Network optimized for automated marshalling duty
- Full complexity: testing with all prototype vehicles driving

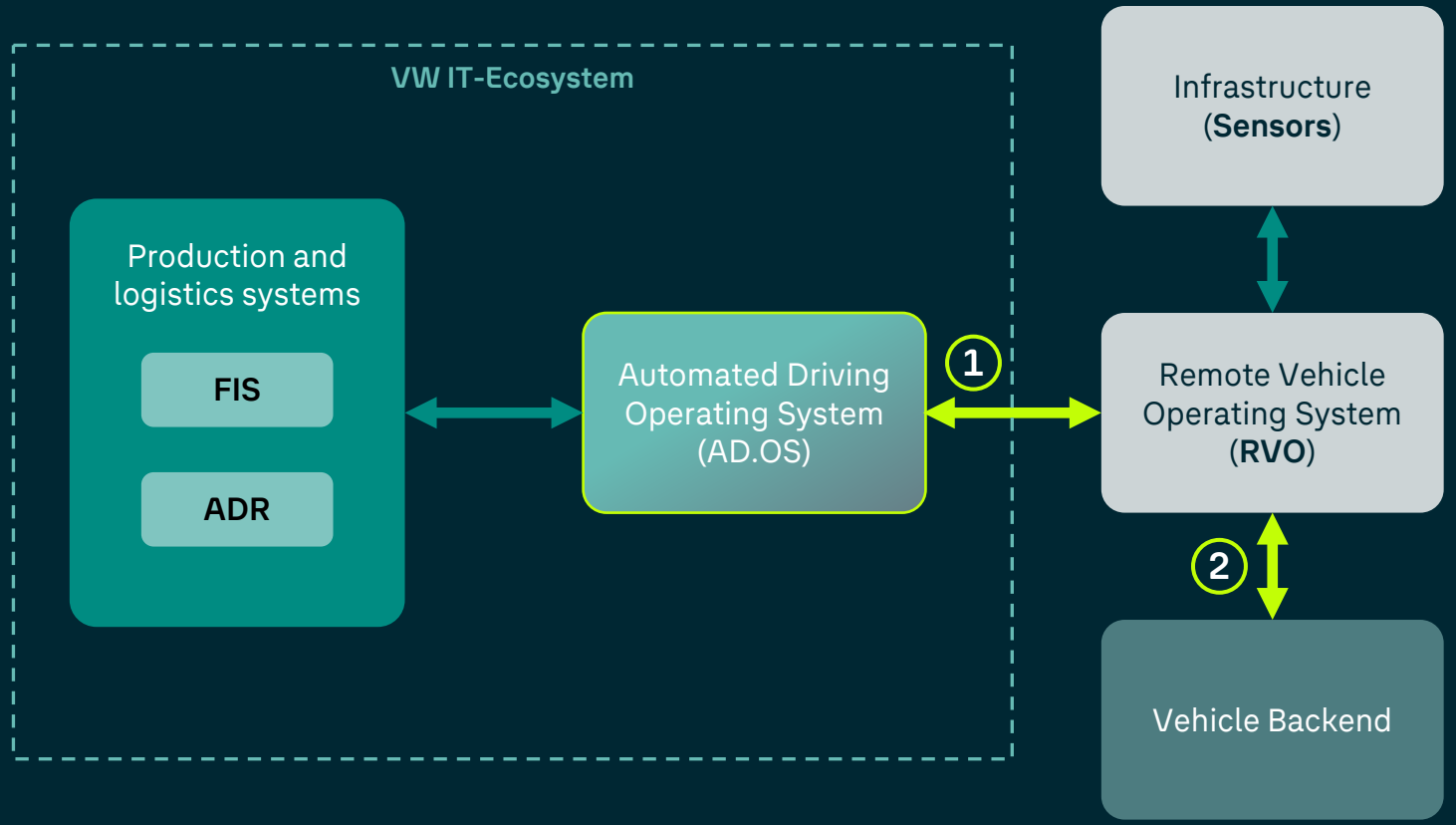
Crucial milestone: AutoLog Demo on Sept. 24th 2025

AutoLog shows the Automated Marshalling Solution from Telekom and Unikie, targeting for significant benefits along the value chain.

- ✓ **Reduces costs in plant, logistics, depots, …**
- ✓ **Increases process efficiency**
- ✓ **Lowers dockage fees**
- ✓ **Brings new added customer values**



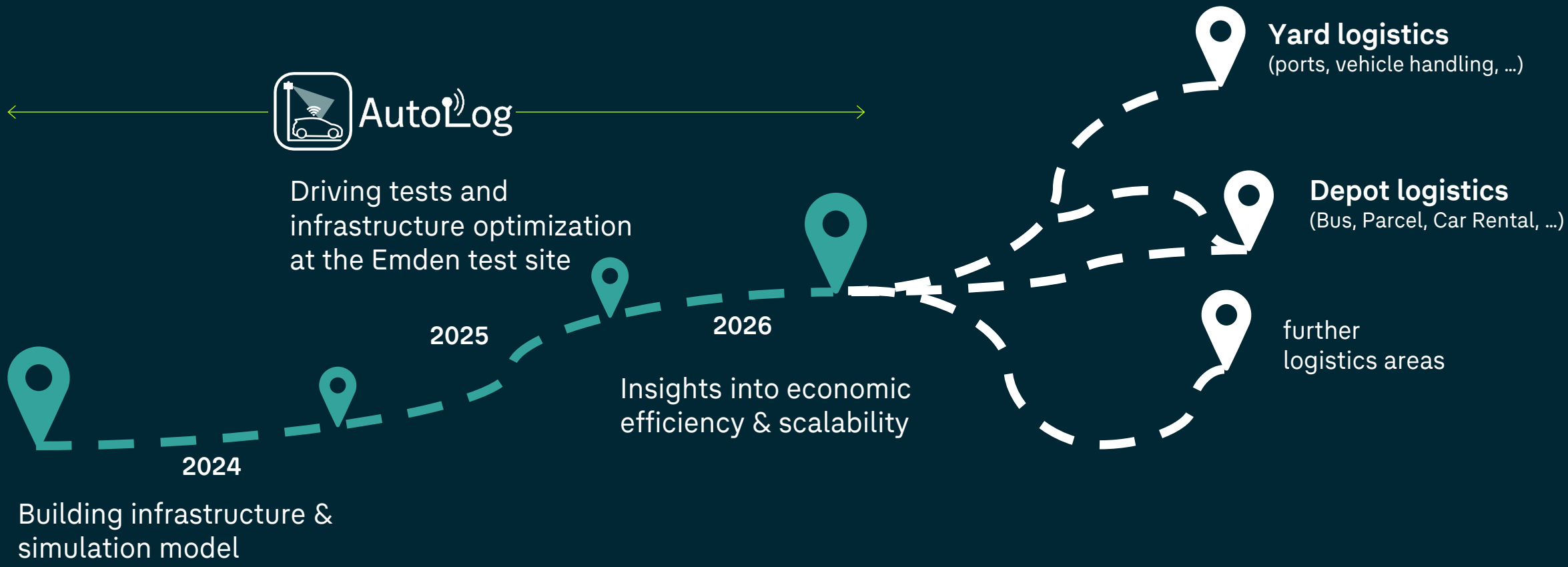
Scalability and transferability of the marshaling system are ensured by standardized interfaces between system components.



1. **AD.OS** as a central and **standardized communication interface** between the VW IT ecosystem and RVO systems

2. **ISO standard** (ISO 23374-1) for **communication** between the RVO systems and the vehicle backend

The technology has great potential for scalability to other logistics applications based on insights from Emden.



Project status: Use in production & logistics process

Further potential: multiple uses in the vehicle lifecycle

Thank you

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