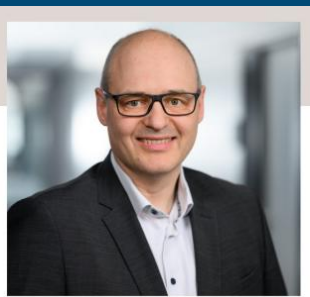


# Future Vehicle Diagnostics Technology for the Automotive Aftermarket



**Dr. Carsten Kopp**

Executive Vice President  
Bosch Mobility Aftermarket  
CLEPA Aftermarket Conference, 03.04.2025



# Aftermarket Business at Robert Bosch

Bosch Group 90.5 bn€

Bosch Mobility

Mobility Aftermarket

Mobility

62%



Energy & building technology

8%



Industrial technology

7%



Consumer goods

22%



> Bosch eBike Systems (EB)

> Electrified Motion (EM)

> Mobility Aftermarket (MA)

> Mobility Electronics (ME)

> Power Solutions (PS)

> Vehicle Motion (VM)

> Cross-Domain Computing Solutions (XC)

> Bosch Engineering GmbH (BEG)

> ETAS GmbH

Spare parts



Diagnostic, repair shop equipment



**BOSCH**  
Service

Workshop concepts



Services, support for workshops



Numbers year 2024

2

Bosch Mobility Aftermarket | 2025-04-03

Robert Bosch GmbH

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# Journey of Vehicle Diagnostics Technology

01

**Automotive  
Diagnostics  
TODAY**



02

**Automotive Diagnostics  
FUTURE**

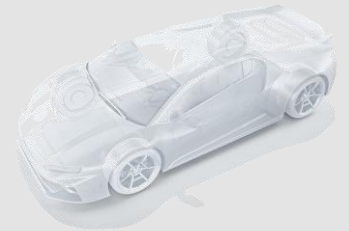
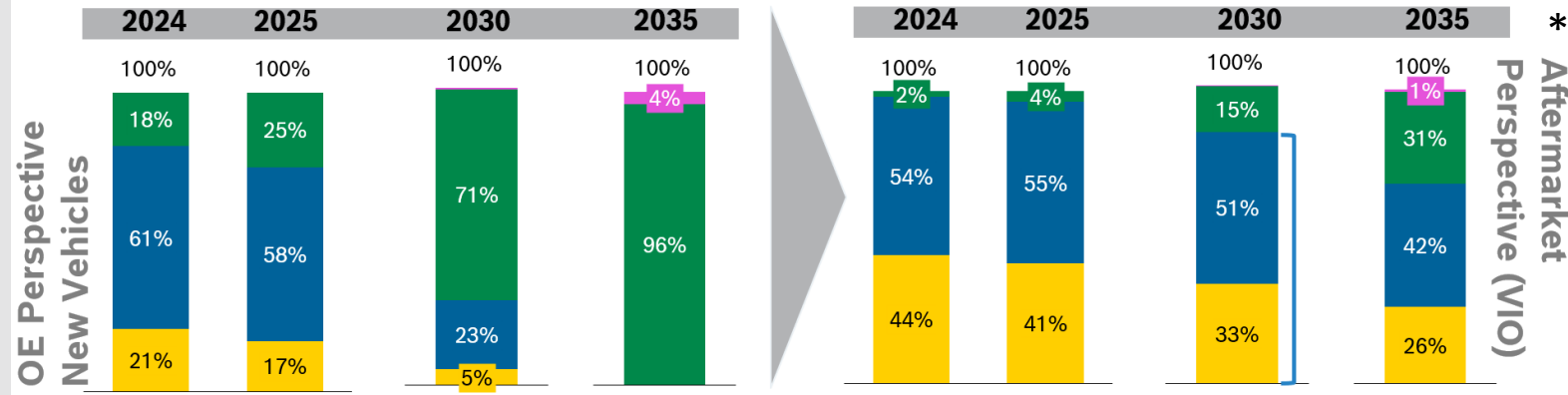


03

**IAM Access  
Requirements**



# Evolution of European Carpark



- The powertrain mix of **new vehicles in EU** will develop towards high BEV share, however challenges like high cost, limited range, political & regulatory uncertainties and low resale value need to be solved in the near future.
- The **average vehicle age is rising** due to increasing purchase prices of new vehicles and uncertainties of buyers.
- The **Vehicles in Operation (VIO)** will still be **dominated by ICEs** for the next years.
- **Diagnostic solutions** need to cover the entire mix of technologies in the market.

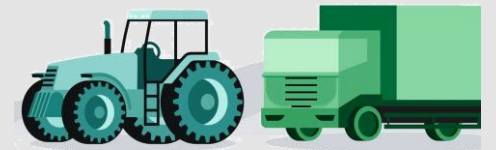
European carpark is ageing and constantly changing towards Electromobility & SdV

# Multibrand Diagnostics Platforms



Powered by ESI[tronic]

- **Bosch diagnostic platforms** offer comprehensive range of hardware and software for passenger cars, trucks and off-highway vehicles
- Six-digit number of users in more than **100 countries** worldwide in **24 languages**
- **> 90.000 different vehicles** from more than **150 OEMs**
- **> 50 million diagnostic sessions per year**
- Experience-based repair (repair fixes): **1.800.000 real-life use cases**



**Bosch Multibrand Diagnostics, Remote Diagnosis, Original Documents and Secure Diagnostics Access solution enable competitive repair possibilities in the Automotive Aftermarket**

# Multibrand Diagnostics Platforms: Latest Feature Updates

One of the 1<sup>st</sup> IAM tester to offer OE like **TESLA diagnostics** preparing the way for diagnostics of SdV

Access to comprehensive vehicle **information** incl. diagnostics, with an encyclopedia **from the OEM's database**

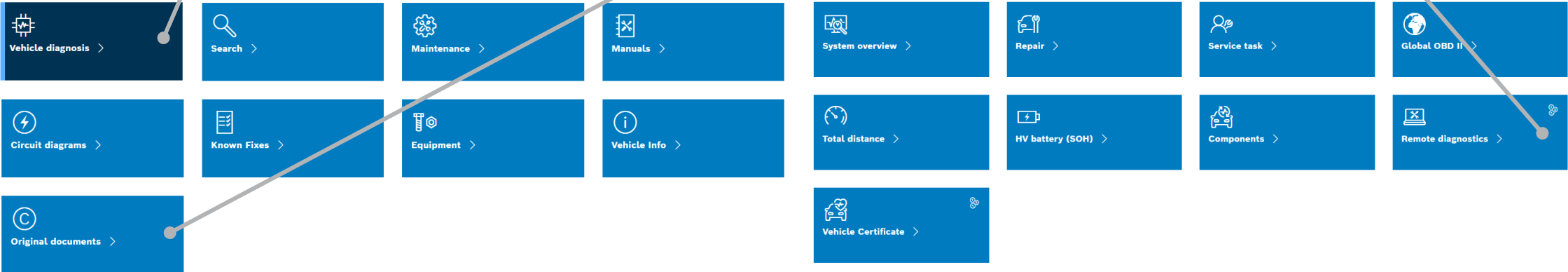
Programming & **advanced functions without requiring an OEM tool**, supported by experienced agents via remote solutions.

Welcome to ESI[tronic]

ESI[tronic] ^

☐ Favourites view

Direct access to diagnostics ^



**OE Data is the backbone of ESI[tronic] features: OBD, Repair & Maintenance Information and Vehicle Information from OE are mandatory to offer current and future diagnostic based services**



# Secure Diagnostics (SDA) in ESI[tronic]



- SDA enables locked functions like service reset and ADAS calibration by **one sign-in for all OEMs** in ESI[tronic]
- Bosch offers **outstanding coverage** (>24 OEMs) in the market included in **all subscriptions**
- Established **authentication concept** with access control and secured communication according to latest standards (like ISO/IEC 27001)



Simple Solution



Cost Benefit



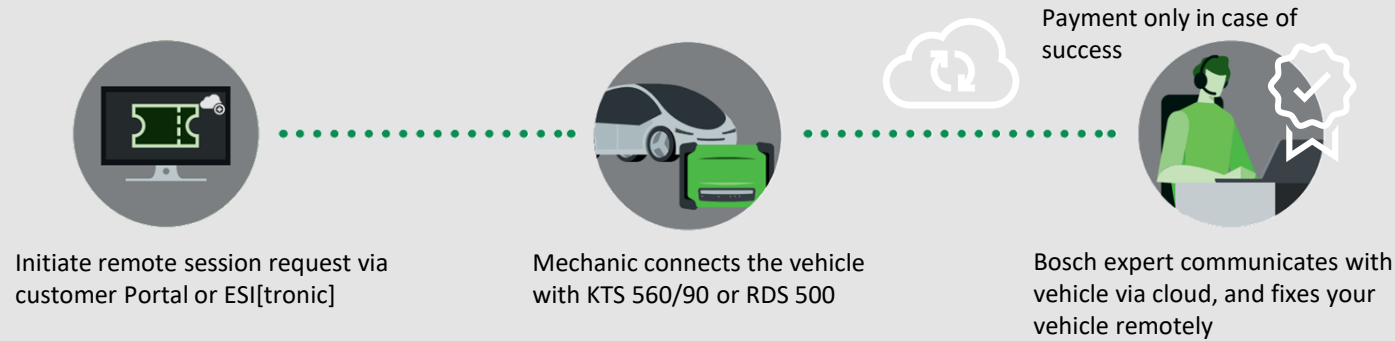
Time saving



Future Proof

**One sign-in for all OEMs through ESI[tronic] provides access to all vehicles locked by a security gateway**

# Remote Diagnostics Solution



- Workshop does **not need to buy OE Tools/** license
- **Programming & advanced functions** which typically require an OEM tool are possible with KTS 560/590
- **Limited mechanic experience** and **time** can be compensated by an easy session with experienced Bosch remote agents
- Bosch solution offers **high coverage**, highly qualified expert contacts and flexible scheduling



Flashing control units



Program car key



Accessories coding



Diagnostics and resets



ADAS systems calibration



and many more ...

**Global roll-out of Remote Diagnostic Solution needs access to all API interfaces and improved OE information**



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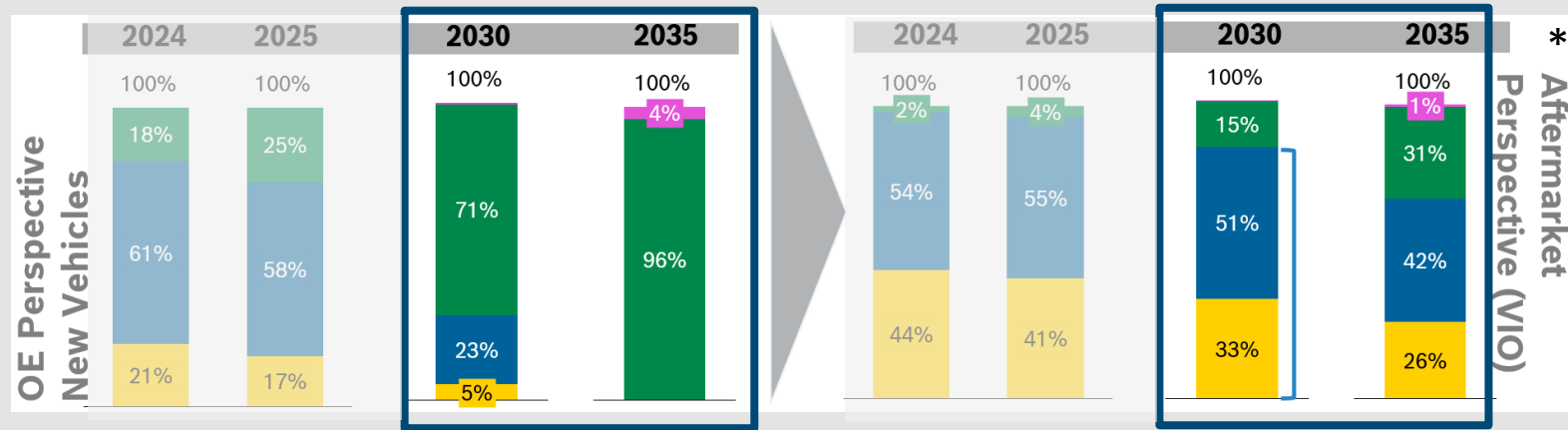


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# Evolution of European Carpark

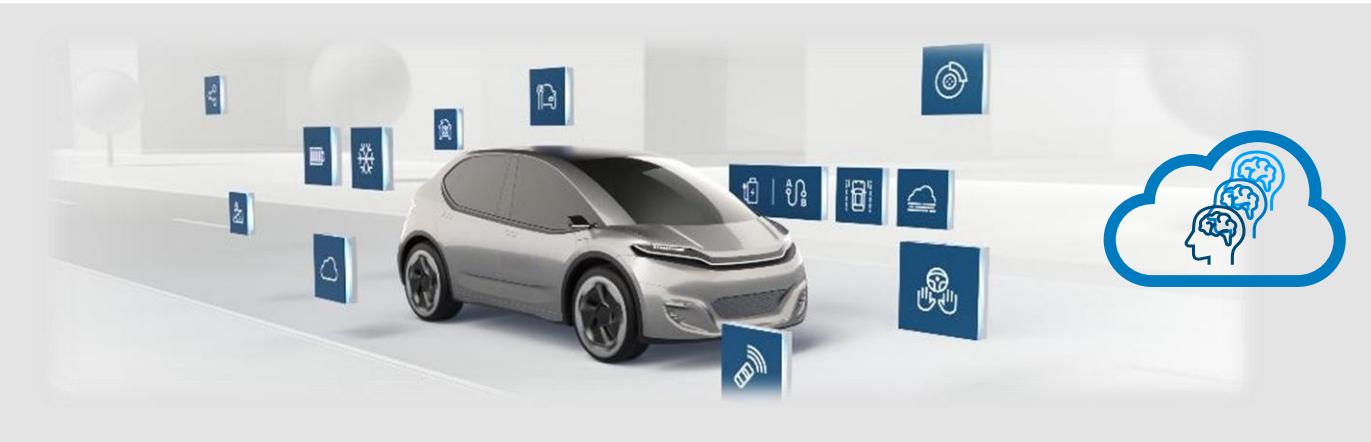


- Until **2035 new vehicles** will majorly move **towards BEV** and will be represent **one-third of the Vehicle in Operation (VIO)** from aftermarket perspective.
- The Automotive aftermarket needs to be prepared for next generation of **Electromobility and Software defined Vehicles (SdVs)**.
- **Diagnostics technology** need to evolve together with the evolution of SdVs and the **new E/E architecture** of vehicles.

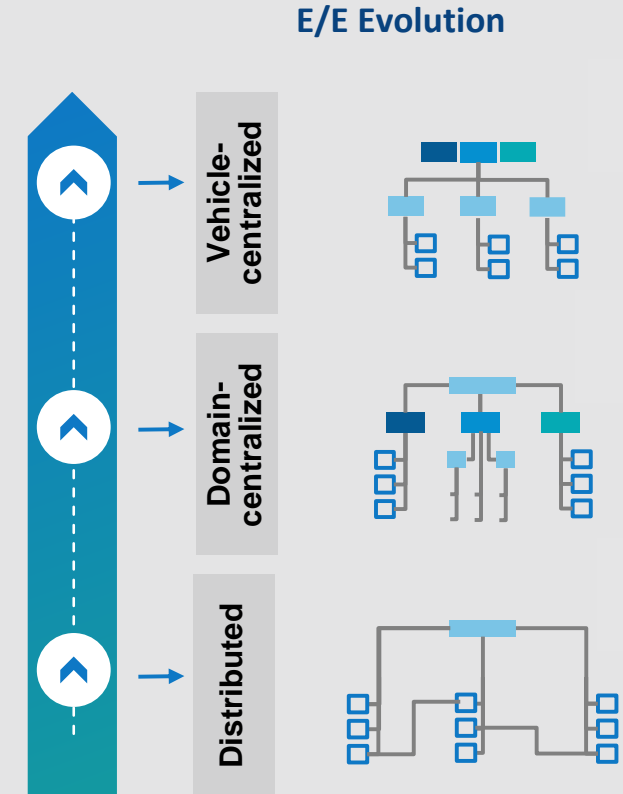


Automotive Aftermarket needs to prepare for diagnostics of future vehicle technologies

# Software defined Vehicles (SdV)



- **E/E architecture** in vehicles is evolving with the rise of **SdVs**
- Bosch develops future vehicle concepts **together with the OEMs**
- Diagnostic concepts need to be developed with:
  - Flexibility to allow uniform access to the diagnostic content of **high-performance computing as well as of classical ECUs**
  - With **access to IAM players** to enable healthy competition

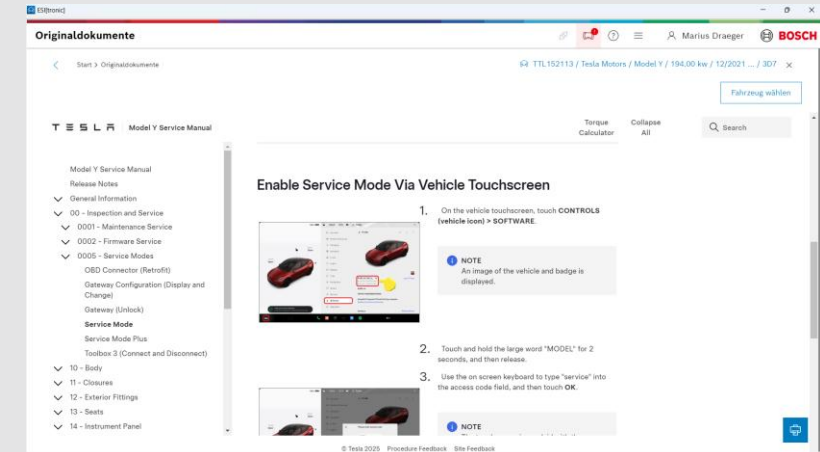
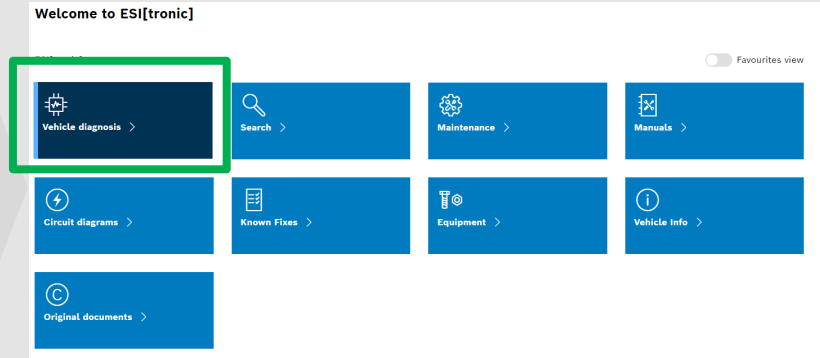


**Transition towards SdV demands flexibility in diagnostics ranging from classical system-based protocols to vehicle centralized-based protocols**

# Tesla Diagnostics & Repair as first step towards SdV



- Categorisation in systems and **system related ECUs is no longer relevant**. (Trouble codes now related to the entire vehicle)
- Calibration routines and configuration processes are **on vehicle level**.
- Diagnostics is supported by **self-test functions** and "SOVD Apps"
- Actual values are provided and filtered by the **high-performance computer** and are no longer only based on system level.



**Tesla is an example showing how future diagnostics will work with SdVs using SOVD**  
**Access & data standards for IAM are necessary**

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# Importance of Access for Competitive Automotive Aftermarket

## Access to Parts:

- Ensure **Motor Vehicle Block Exemption** (MVBER) Regulation.

## Access for Vehicle Diagnostics:

- Improve regulation for **OBD Information** and **repair and maintenance information** (RMI)
- Access to RMI also for **EVs and ADAS** respecting the principles of fair competition.

## Access for Services:

- **Access to in-vehicle data, functions and resources** for the aftermarket.
- Access to future **standardized, interoperable, secure and open-access platforms**, enabling vehicle owners to connect to the **service providers of their choice** respecting the principles of fair competition.

**Access to parts, OBD, RMI data, and vehicle information from OEs for IAM is crucial  
to enable a competitive automotive aftermarket**

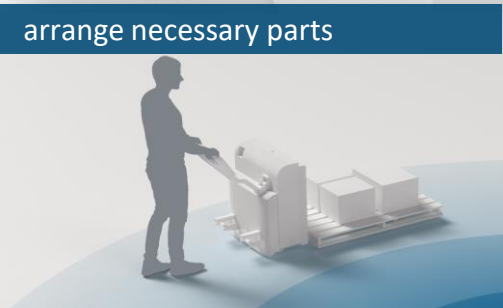
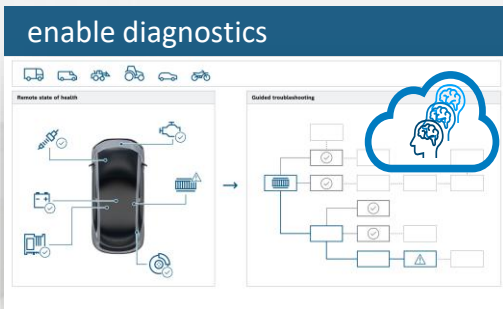
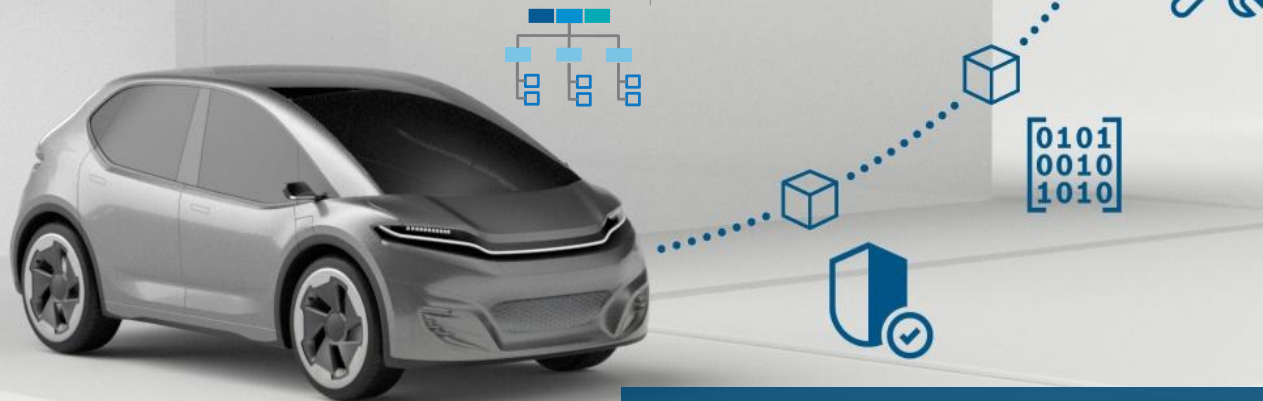
# Connected vehicles **communicate continuously** via cloud and ...

30%

By 2025, 30% of the passenger car park will be equipped with OE native telematic hardware.\*

50%

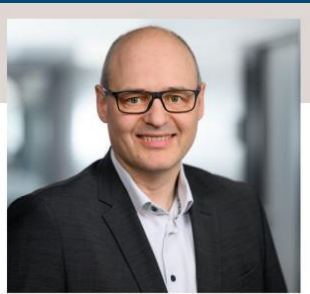
By 2030 more than 50% of all passenger cars will be connected.\*



- Enabling **cost & time saving** for **vehicle owners**
- Improving **efficiency** (logistics, parts management, repair time) for **workshops and wholesalers**



# Thank you



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