

DIGITAL DRIVE

Real-time visibility in Finished Vehicle Logistics

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Veronika Söntgerath

T-Systems International GmbH

Stefan Kretzer

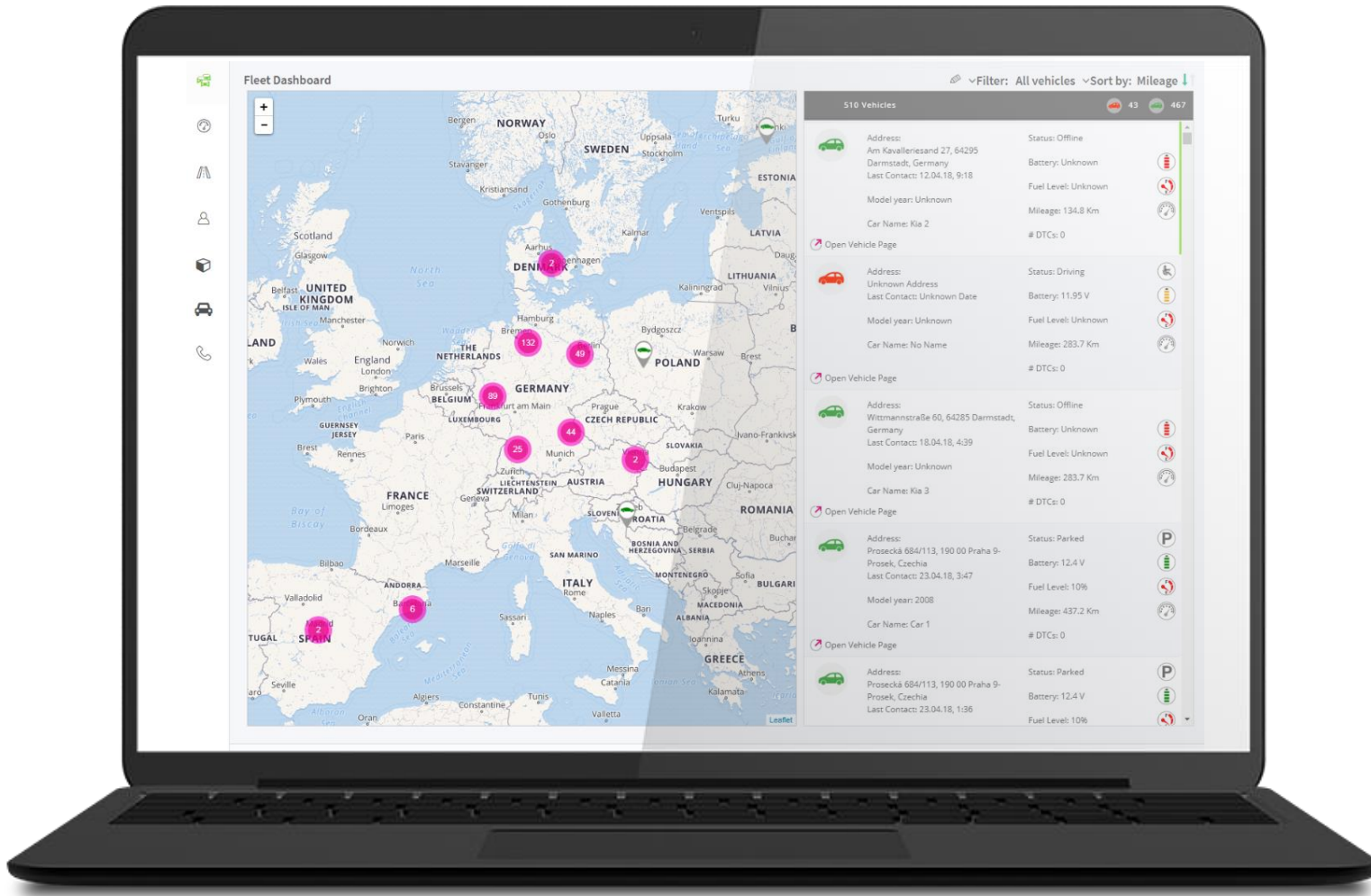
Volkswagen Group Logistics



LIFE IS FOR SHARING.



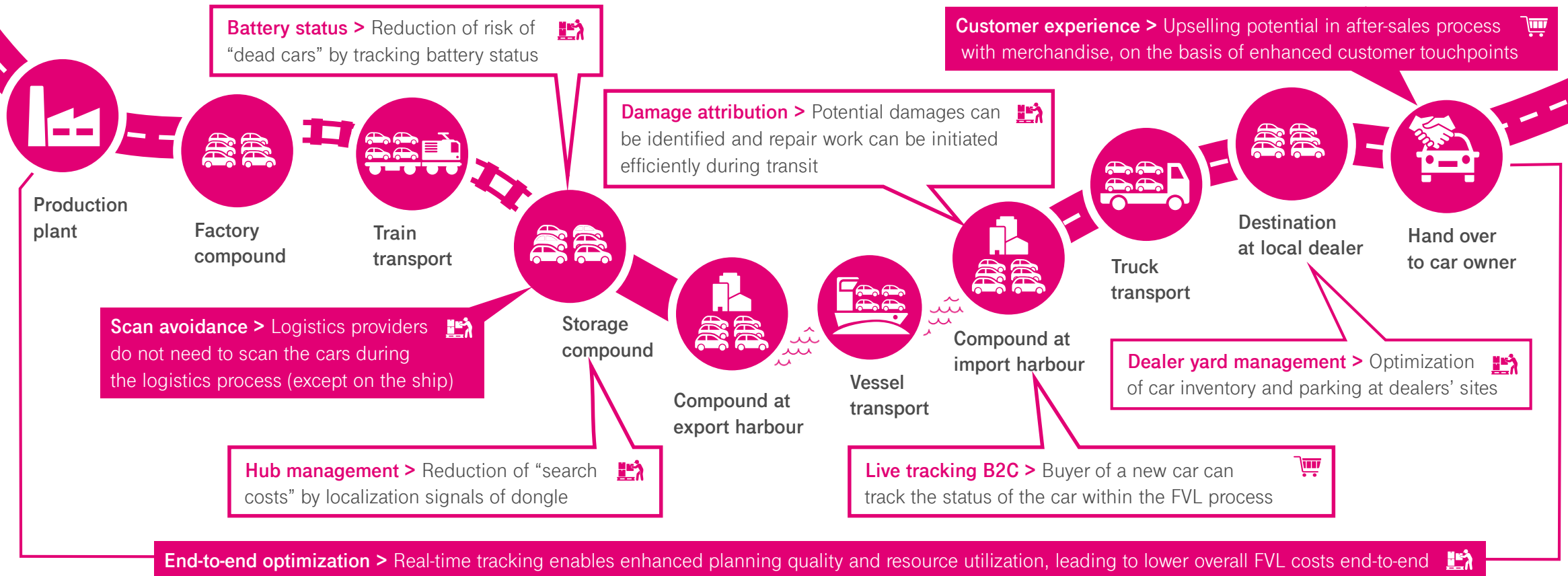
OBTAIN A DIGITAL TWIN OF VEHICLES IN THE SUPPLY CHAIN



- VIN
- Location
- Trips
- Status
- Battery voltage
- Diagnostic Trouble Codes



REAL-TIME VISIBILITY WITH DIGITAL DRIVE



LIFE IS FOR SHARING.

B2B lever

B2C lever

SURVEYS REVEAL HIGH INTEREST OF CAR BUYERS TO RECEIVE FREQUENT STATUS UPDATES DURING CAR SHIPMENT

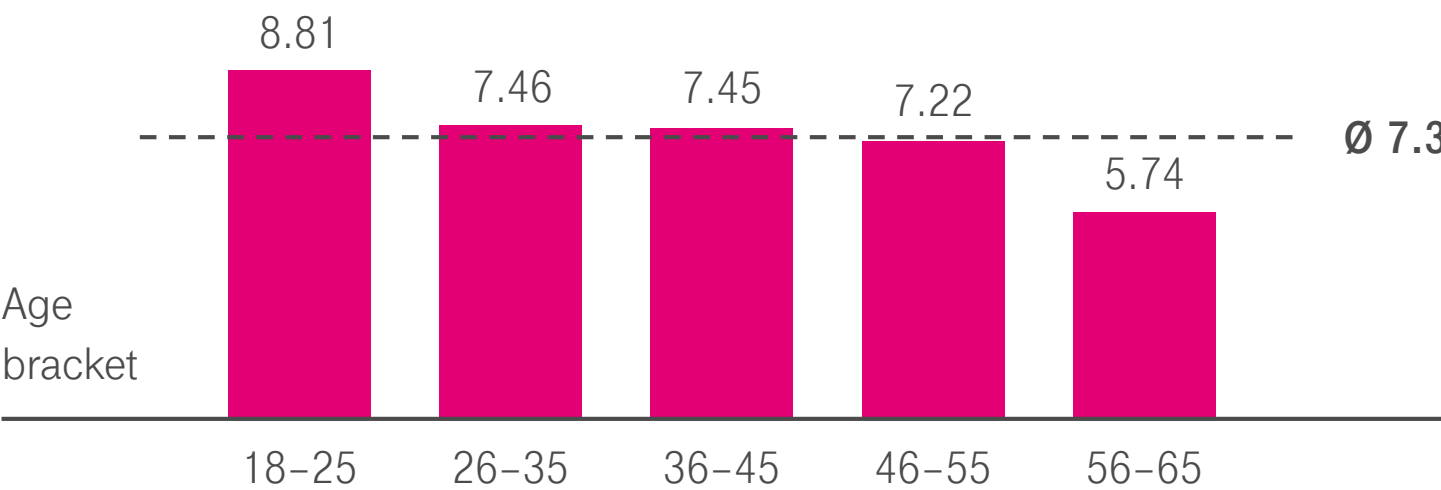
How interested are you in receiving delivery updates on a scale from 1 to 10 (10 being the highest interest)?

Drivers are very interested in frequent updates

The interest is particularly prevalent among younger customers



Results over all responses: n = 156



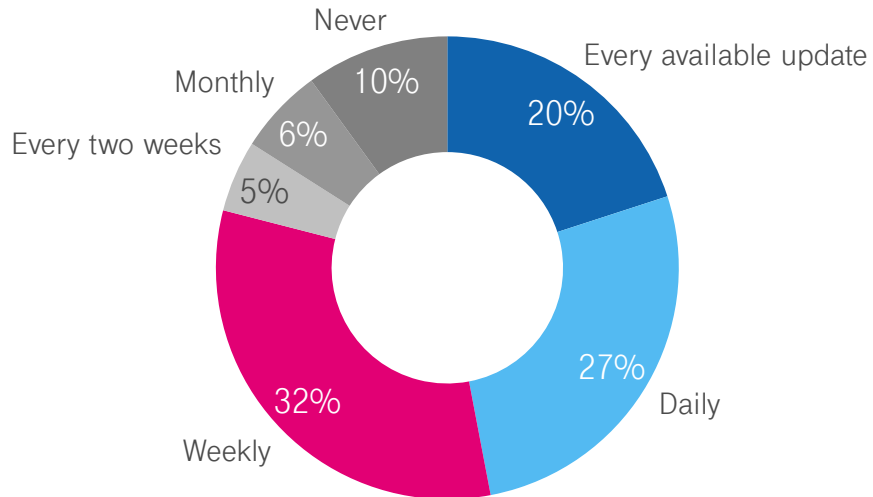
Results by age bracket: n = 156

CUSTOMERS PREFER AT LEAST WEEKLY STATUS UPDATES VIA INSTANT MESSAGING CHANNELS

Most customers would prefer at least weekly updates on their delivery status

How often would you like to be updated during the delivery phase of your car?

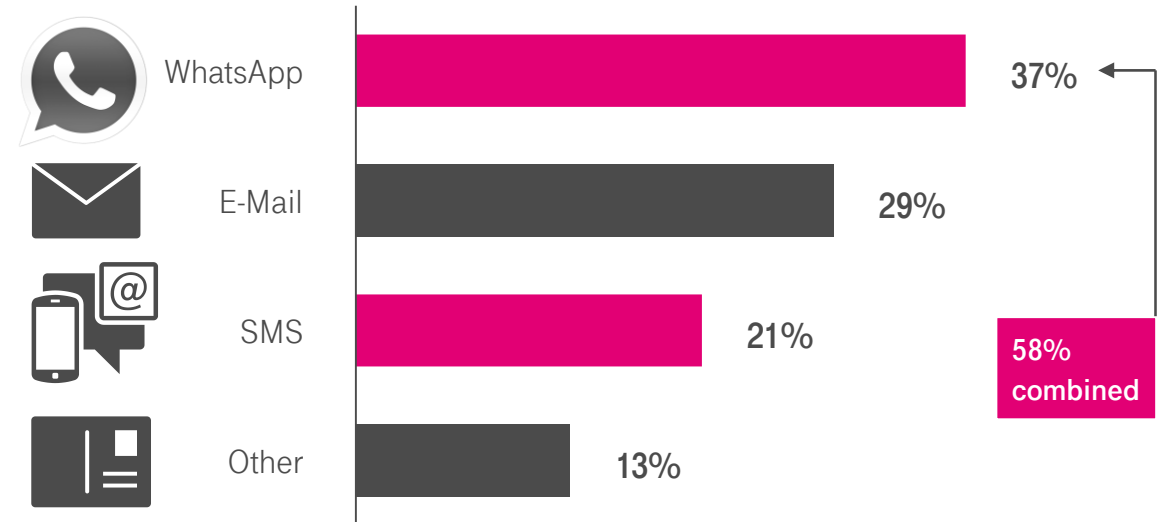
n=119



Customers prefer to be contacted via instant messaging services

Through what channel of communication (e.g. E-Mail, WhatsApp) would you like to be contacted during the delivery of your car?

n=120



Source: Results from small-scale surveys at car dealerships conducted in cooperation with ESIC Business & Marketing School Madrid, 2018



THE OBD2 ADAPTER: PLUG IN AND GO

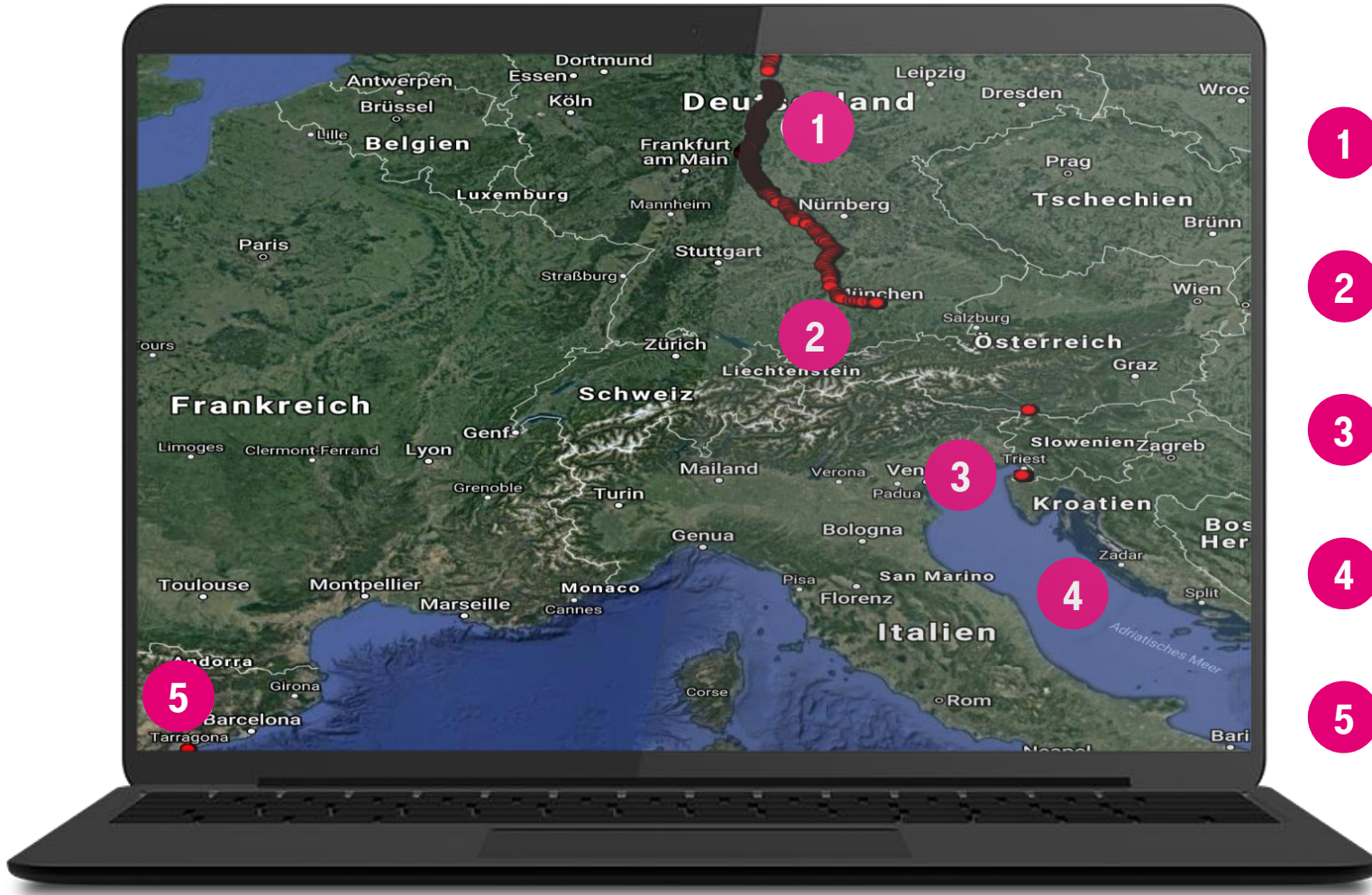


The OBD2 interface is available as **standard in all cars and light commercial vehicles.**

The adapter is **compact and hardly visible** in the driver's compartment (available with extension cable upon request).



FVL TRACKING RESULTS – GERMANY TO SPAIN



- 1 High frequency measurements triggered by G-force sensor event
- 2 Online configuration change (OTA) to reduce measurement intervals if engine is off
- 3 Higher frequency measurements with engine on (details see next page)
- 4 No mobile connectivity on vessel (works as expected)
- 5 Connectivity re-established, measurements continued



FVL TRACKING RESULTS – GERMANY TO SPAIN

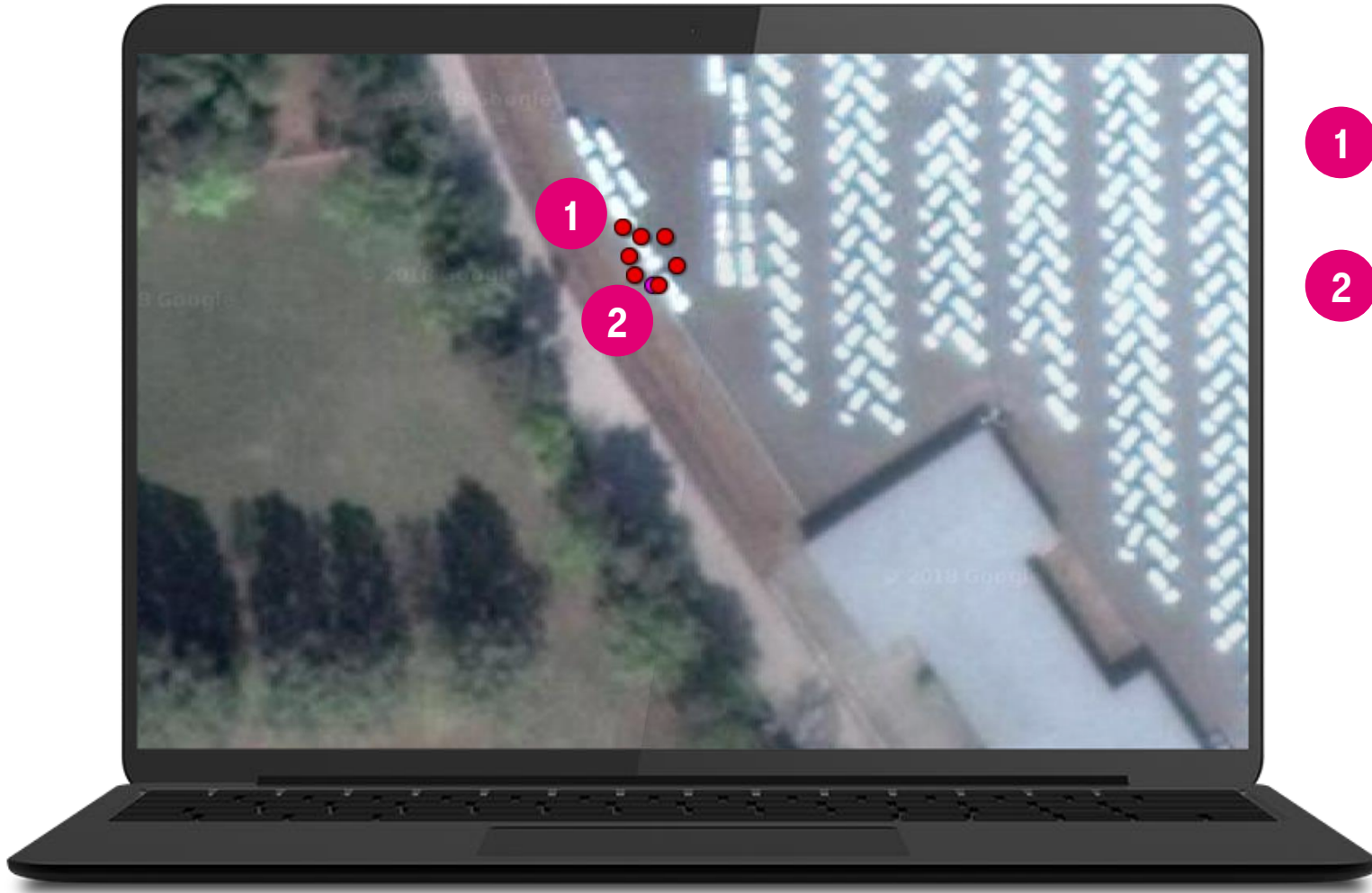


- 1 Offboarding from the train, higher frequency measurements with engine on
- 2 Arriving at the parking lot, duration of stay can be derived from timestamps
- 3 Onboarding to the vessel, timestamp is available



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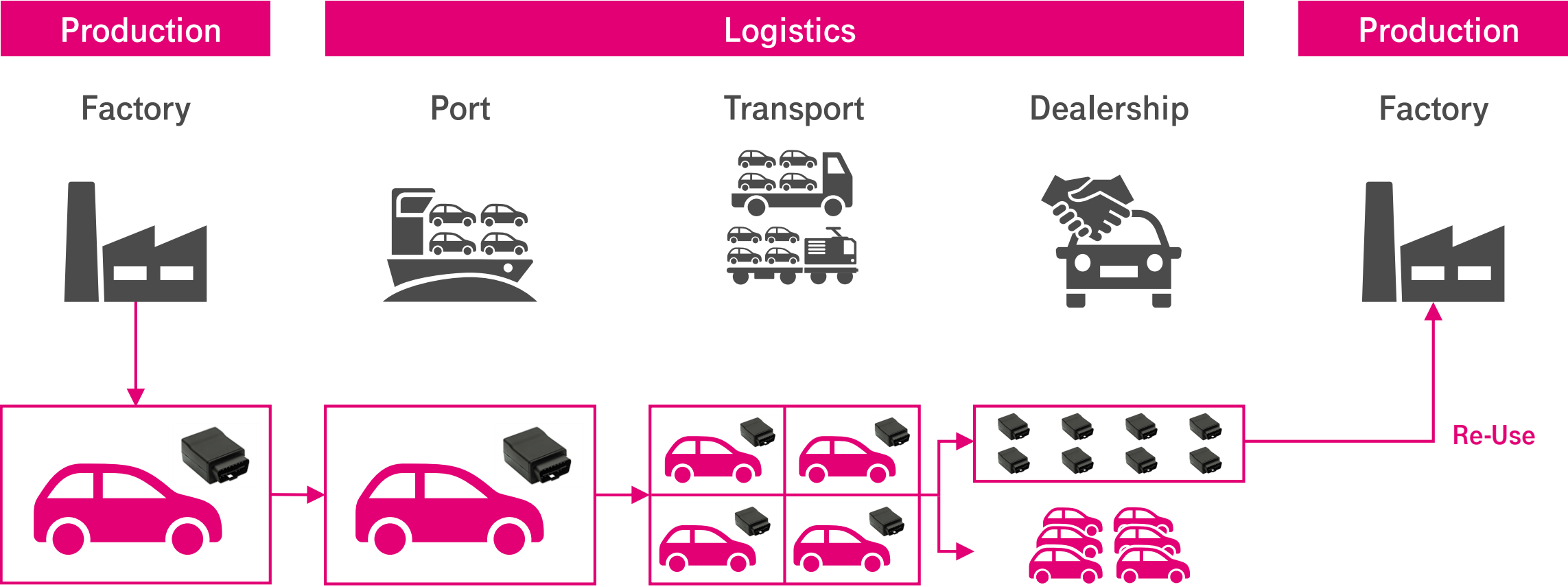
GPS ACCURACY FROM POSITIVE CONFIRMED MEASURE



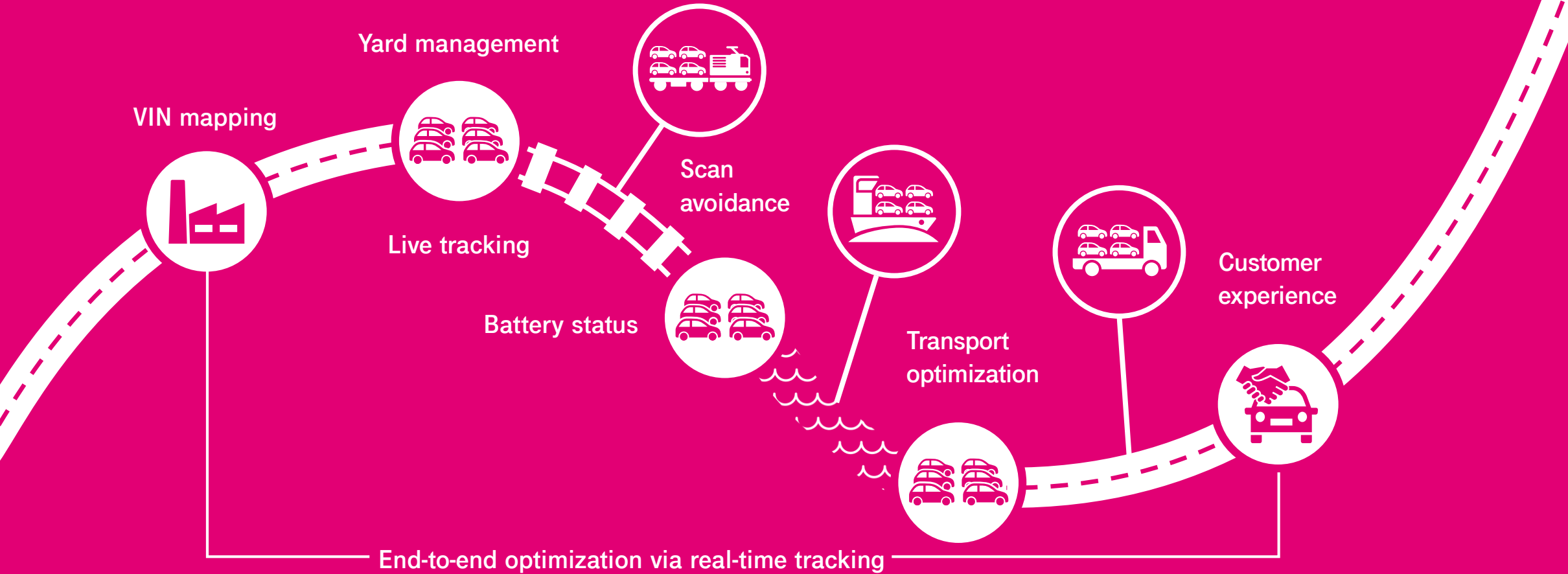
- 1 Scattering of GPS position from the OBD2 device during a long term stationary test
- 2 Reference measurement with external GPS device (Garmin)



OPERATIONAL PROCESS AND RE-USE



REAL-TIME MONITORING OF FINISHED VEHICLES – FROM FACTORY TO DEALER



THANK YOU

CONTACT

Veronika Söntgerath
Corporate Entrepreneur
IoT Connected Mobility

T-Systems International GmbH
Friedrich-Ebert-Allee 140
53113 Bonn, Germany

Mobile +49 151 61521805
E-mail veronika.soentgerath@t-systems.com
Twitter [@primaverae](https://twitter.com/primaverae)

Stefan Kretzer
Digitalisation & Process Optimisation
Volkswagen Group Logistics

Volkswagen Konzernlogistik GmbH & Co. OHG
Brieffach 911/6996
38436 Wolfsburg

Mobile +49 172 2356558
E-mail stefan.kretzer@volkswagen.de

