

WORKSHOP C

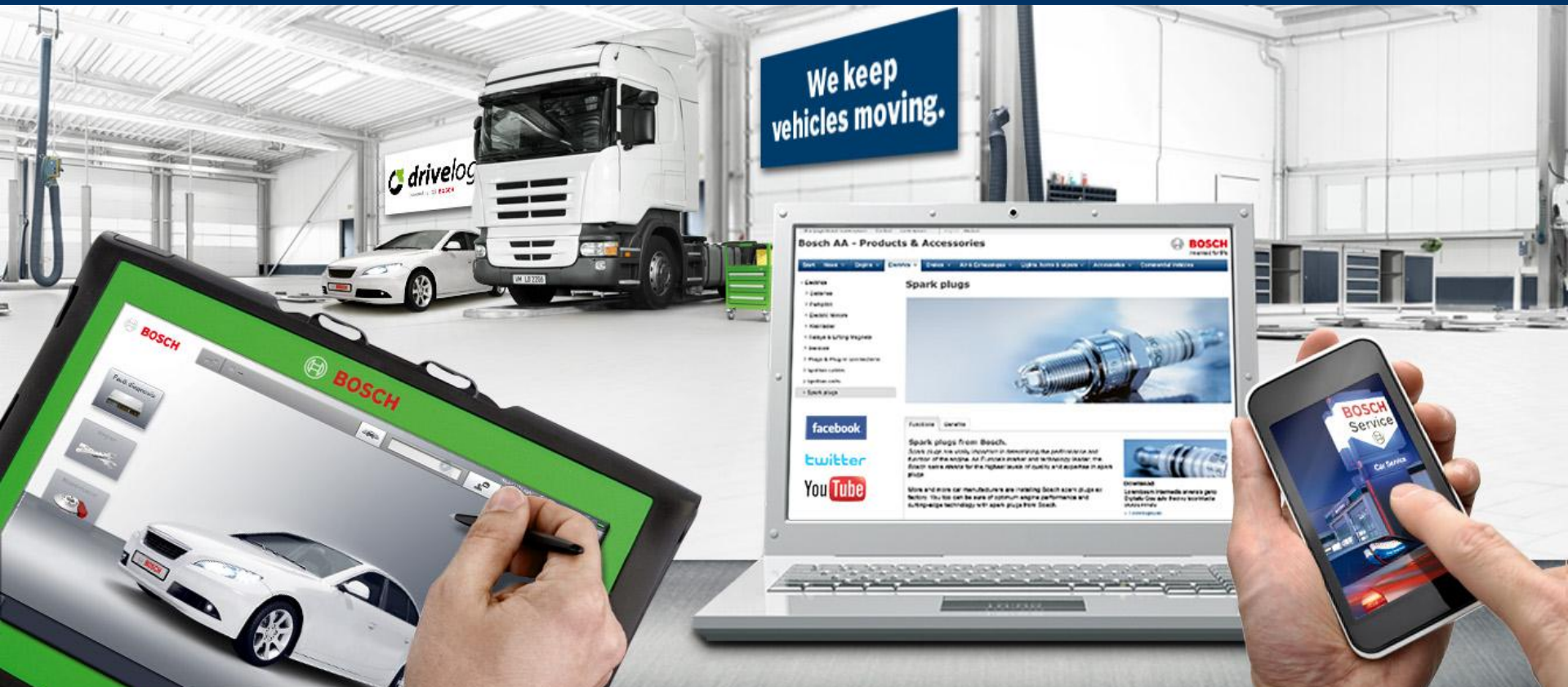
SESSION TWO

Presentation 3

Holistic approach to vehicle test station

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Holistic approach to vehicle test station

Dr. Harald Neumann

Vice President Engineering



BOSCH

Holistic approach to vehicle test station

Agenda:

- Facts and Figures
- “NEW” Automotive Service Solution
- Focus on PTI-Business
- Beissbarth ICperform
- Summary



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Robert Bosch GmbH – Facts and Figures

- Founded in 1886 by Robert Bosch
- Owned by the Robert Bosch Foundation
- One of the worlds largest innovative technology based companies
- Represented in more than 150 countries
- Sales 2012: 52.5 bn. EUR - (outside Germany: 77 %)
- Investment in R&D: 9 % of sales
- Employees: > 306,000



“NEW” Bosch Automotive Service Solution (AA-AS)

→ Acquisition of **SPX Service Solutions** in Dec. 2012

- Sales Turnover in 2011: 920 Mio. \$
- Approx. 2,700 Employees
- Additional Brands in the product portfolio



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Focus on PTI-Business

- NEW Department established at Beissbarth GmbH located in Munich
- World wide responsibility in the Bosch Group for
 - Business Development with Test Organisations
 - Project and Tender Business
- Representing the Bosch Group in Associations for Vehicle Testing
 - Germany: ASA / Europe: EGEA / World Wide: CITA
- Brands: Bosch, Beissbarth and OTC
- Cooperation with Capatest (Spain)

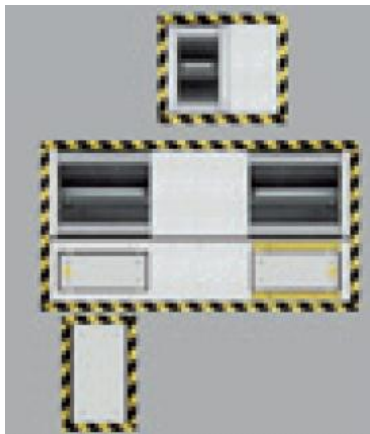
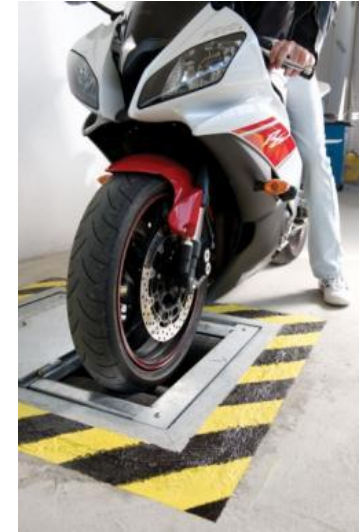


ICperform – Software for Inspection Center

→ Controlling the Brake Tester / Test Lanes for

- 2-Wheeler
- 3-Wheeler
- Passenger Cars
- Trucks / Buses

Sold: > 40.000



ICperform – Software for Inspection Center

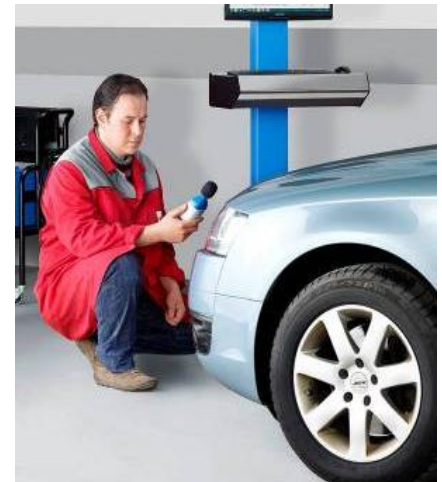
- Headlight Tester (Automatic and manual)
- Bosch BEA Emission Tester
- ASM (Acceleration Simulation Mode) for Emission Test under load



Sold: >
100.000

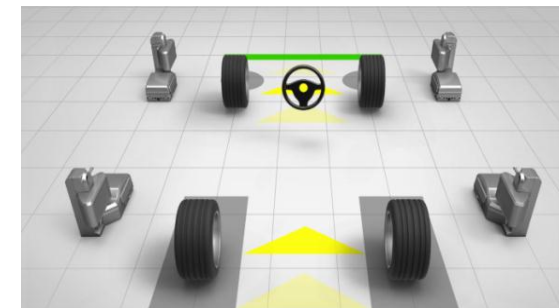
ICperform – Software for Inspection Center

- Sound Level Meter
- Speedometer Tester
- Template for easy input at Visual Inspection
- Handheld Devices (f. e. Bosch DCU 130)



ICperform – Touchless

- Connection to **Touchless** Wheel Alignment
 - Measurement in less than 10 seconds by measuring all 4 wheels live and simultaneously



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ICperform – Crash Data Retrieval (CDR)

→ Used to retrieve crash data from vehicle ECUs

→ Usage:

- Reconstruction of vehicle accidents
- Insurance claims settlement cases and vehicle safety research
- OEM's use it to get 'real-world' data from crashes to improve safety and performance-related functions

→ Pre-Crash data

- Vehicle Speed / Engine Throttle
- Accelerator Pedal / Brake Switch

→ Crash data

- Airbag configuration / Trouble codes at impact
- Status safety Belts / Tire Pressure

→ Post-Crash data

- Delta-V Longitudinal and Lateral
- Vehicle Speed / Engine RPM



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ICperform – Tire Pressure Monitoring System

- **All new models** of passenger cars in the **European Union** must be equipped with a **TPMS** (Tire Pressure Monitoring System) starting from **November 2012**.
- **From November 2014** all **new cars** in the **EU** must be equipped with a TPMS.
- For tire changes and vehicle checks **specific tools will be needed**
- Until 2016 > **16,8 Mio vehicles** with TPMS will be expected



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ICperform – Additional Equipment



- Bosch ECU Diagnostics
- GPS Taxameter
- Vehicle Lifts (2-Post / 4-Post / Scissors)
- Pit Jacks
- Paint Thickness Device



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ICperform – Optional Software Features

- Online-Booking via Internet
- Connection to Financial Software Modules
- Administration Modules
 - Inspectors
 - Defaults
 - Statistics
- Custom-made Print-out
- **Custom-made Solution**

GOVERNMENT OF DUBAI
 RTA

Vehicle Owner's Name	Plate Issue Source	Centre Name
Vehicle Type	Plate Category	Test Date
Vehicle Make	Plate Number	Test Type
Vehicle Model	Plate Code	Tested By
Model Year	No. Of Cylinders	Transaction No.
Vehicle Color	No. Of Seats	Fee Paid
Chassis Number	No. Of Doors	Fee Receipt No.
Engine Number	Fuel Type	

Visual Inspection—Fault Numbers

1	2	3	4	5	6	7
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Comments:

Exhaust Test

CO (< 4.5%)	CO2	O2	HC (< 800ppm)	NOX
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Headlight Test

	HDL	VDH	L I	E L	HDL	VDL	H E
Left							
Right							

Side Slip Test

Axle mm	1	2	3
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Suspension Test

Axle Left	1	2	3
Axle Right	1	2	3

Noise Level Test

Noise (dB)	
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Undercarriage Test—Fault Numbers

1	2	3	4	5	6	7
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Comments:

Exhaust Test

Axle MB L (n)	1	2	3
Axle MB R (n)	1	2	3
Axle HB L (n)	1	2	3
Axle HB R (n)	1	2	3
Diff. MB HB (n)			

Axle Weight

Axle kg	1	2	3
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Final Result: _____

BEISSBARTH ICperform


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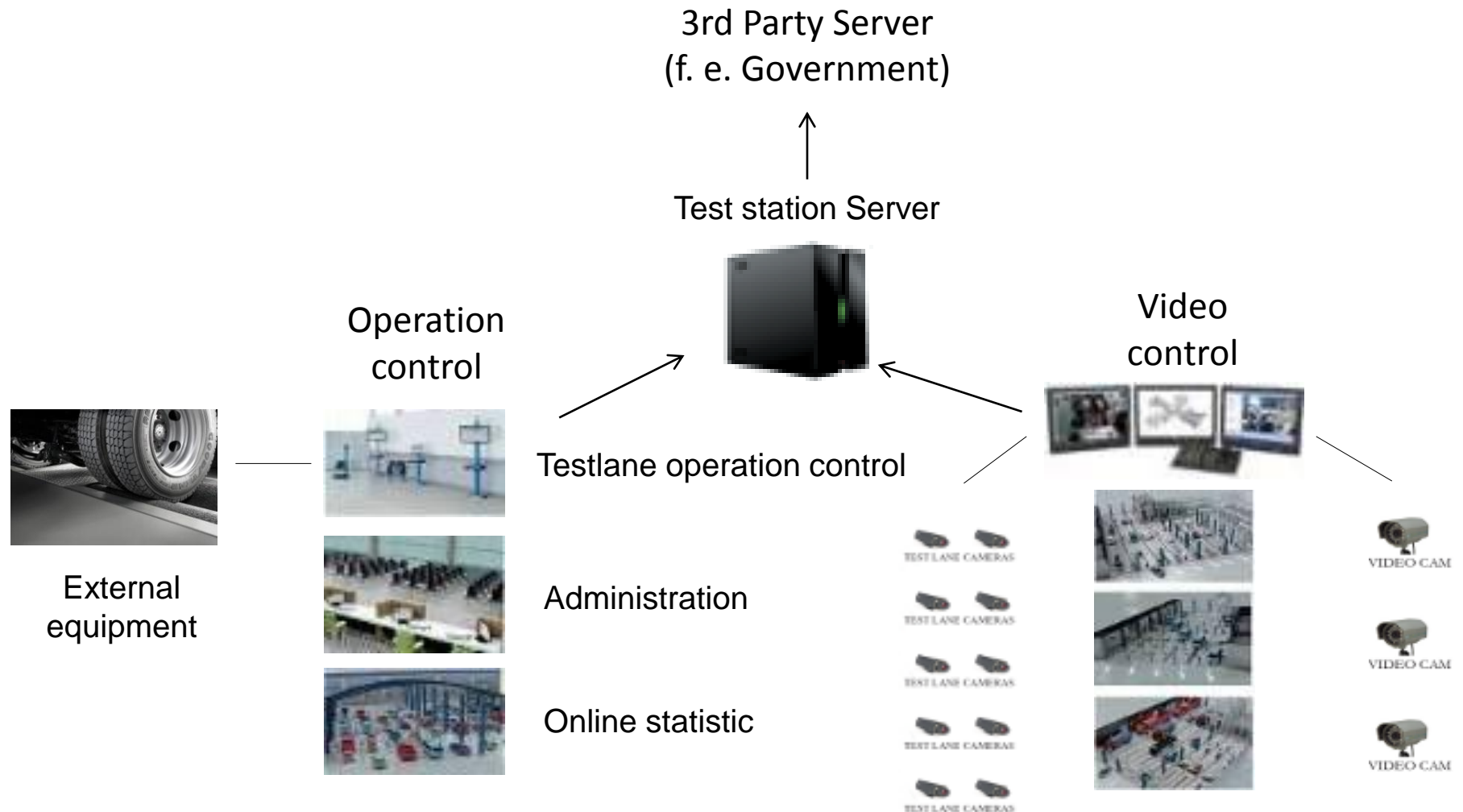
ICperform – Controlling System

- Online monitoring of ALL test lanes from the Headquarter
- Access to lane operating system
- **Bidirectional** Data-Exchange
- Control of test procedure
- Storage of test lane log
- Access to test results



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ICperform – Server System

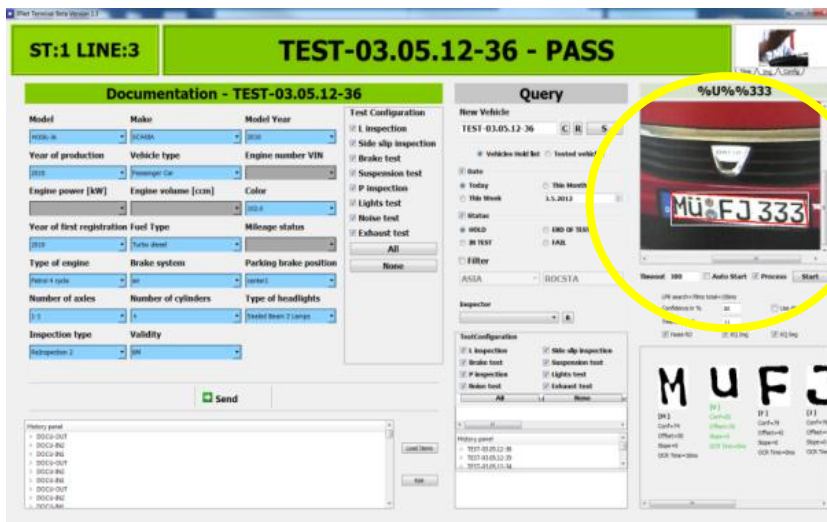


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ICperform – Camera Technology by

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- ➔ Automatic Plate recognition
- ➔ Vehicle image for evidence
- ➔ Test Lane Monitoring
- ➔ Triggering the next device (f. e. Headlight Tester)



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ICperform – Camera Technology (Possibilities)

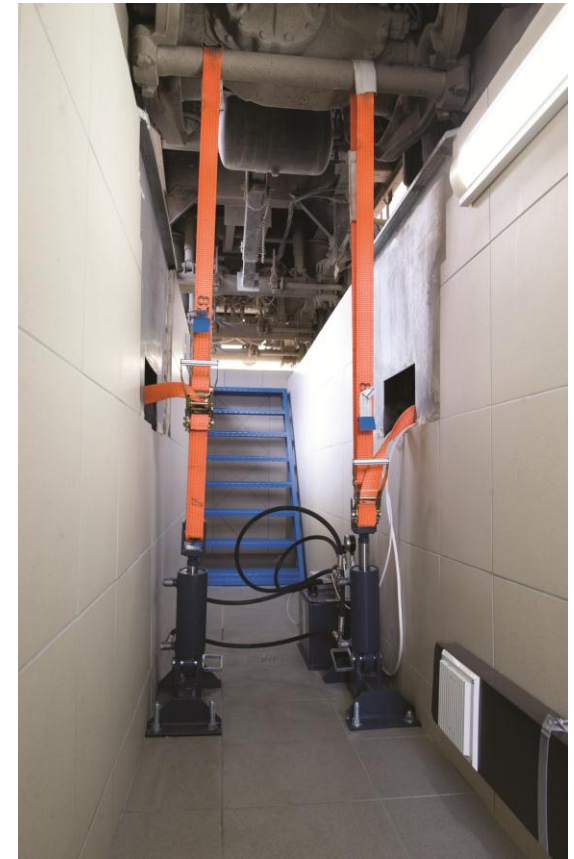
- Substitution of mirrors / additional employees (f. e. Light Test)
- Positioning of Vehicles for correct testing (f. e. Suspension Test)
- Monitoring of the outdoor activities (f. e. calculation of waiting time)
- Surveillance of the facilities (outside the opening time)



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ICperform – Camera Technology (Security)

- ➔ Automatic recognition of persons / bodies in the working area
 - Control of Pit while Brake Testing
 - Control of Vehicle Lift area
 - Automatic STOP of Headlight Tester



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ICperform – Optional Safety Features

- Fingerprint or RFID
 - Access control
 - Inspector verification
 - Working time tracking



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ICperform – Benefits for Inspection Center

- ➔ **HIGH Manipulation Protection thru different login levels and camera surveillance**
- ➔ Modular Solution → individual configuration for each customer
- ➔ Fully Automatic Tests and easy handling of Test equipment
(Autom. Start and Stop of the equipment, autom. Data Transfer)
- ➔ Time optimized test procedure → high throughput!
- ➔ Easy Data entry at visual Inspection
- ➔ Easy Maintenance / Controlling → Software for Remote-Mode
- ➔ Easy Modifications (Additional Equipment / New Test Procedure)
- ➔ **Connection of different kinds of equipment → All from one hand!!**



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Why Bosch??

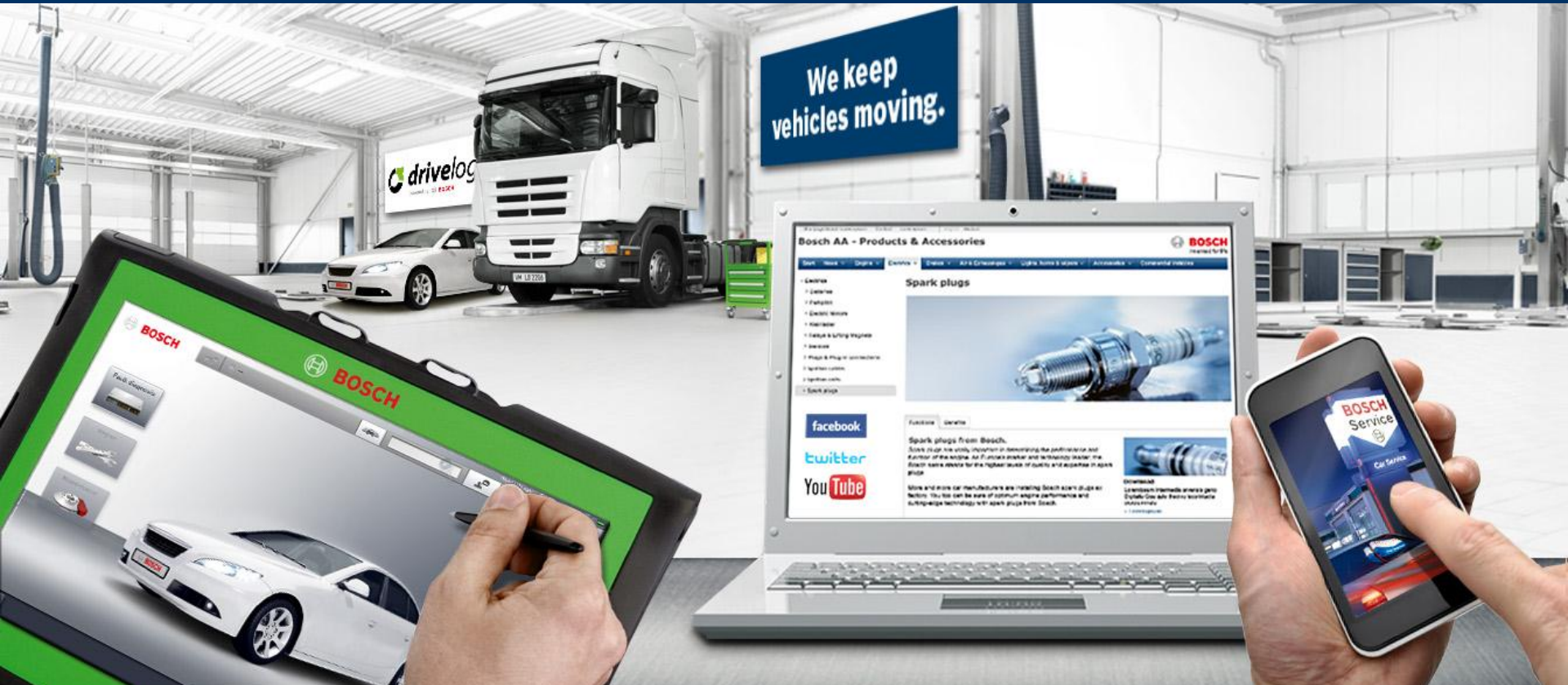
- **Future and Result Focus** – our innovations bring changes in markets and technology solutions for our customers
 - **Responsibility** – We place our products and services in the interests of safety, economic use of resources and environmental sustainability
 - **Initiative and Determination** – our corporate constitution ensures our entrepreneurial independence
 - **Openness and Trust** – we inform our associates, business partners and investors in a timely and open fashion of important developments
 - **Fairness** – we view mutual fairness as condition of corporate success when dealing with each other and our business partners
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Why Bosch??

- **Reliability, Credibility and Legality** – We promise only what we can deliver, accept agreements as binding and respect and observe the law in all our business transactions
- **Cultural Diversity** – We are aware of our company's regional and cultural origins and regard diversity as an asset and a precondition of our global success
- **Competence** – Bosch – globally known technical innovative company and Beissbarth – specialist in test equipment for vehicle inspection combine to bring their expertise to provide Test Organisations with a customised solution



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