



Trends of Vehicles Testing Technology

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Automotive Aftermarket

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BOSCH

Agenda

- Bosch Group
- Beissbarth
- ECU Diagnosis
- ICperform – NEW Automatic Test Lane



- **Bosch Group**
- Beissbarth
- ECU Diagnosis
- ICperform – NEW Automatic Test Lane



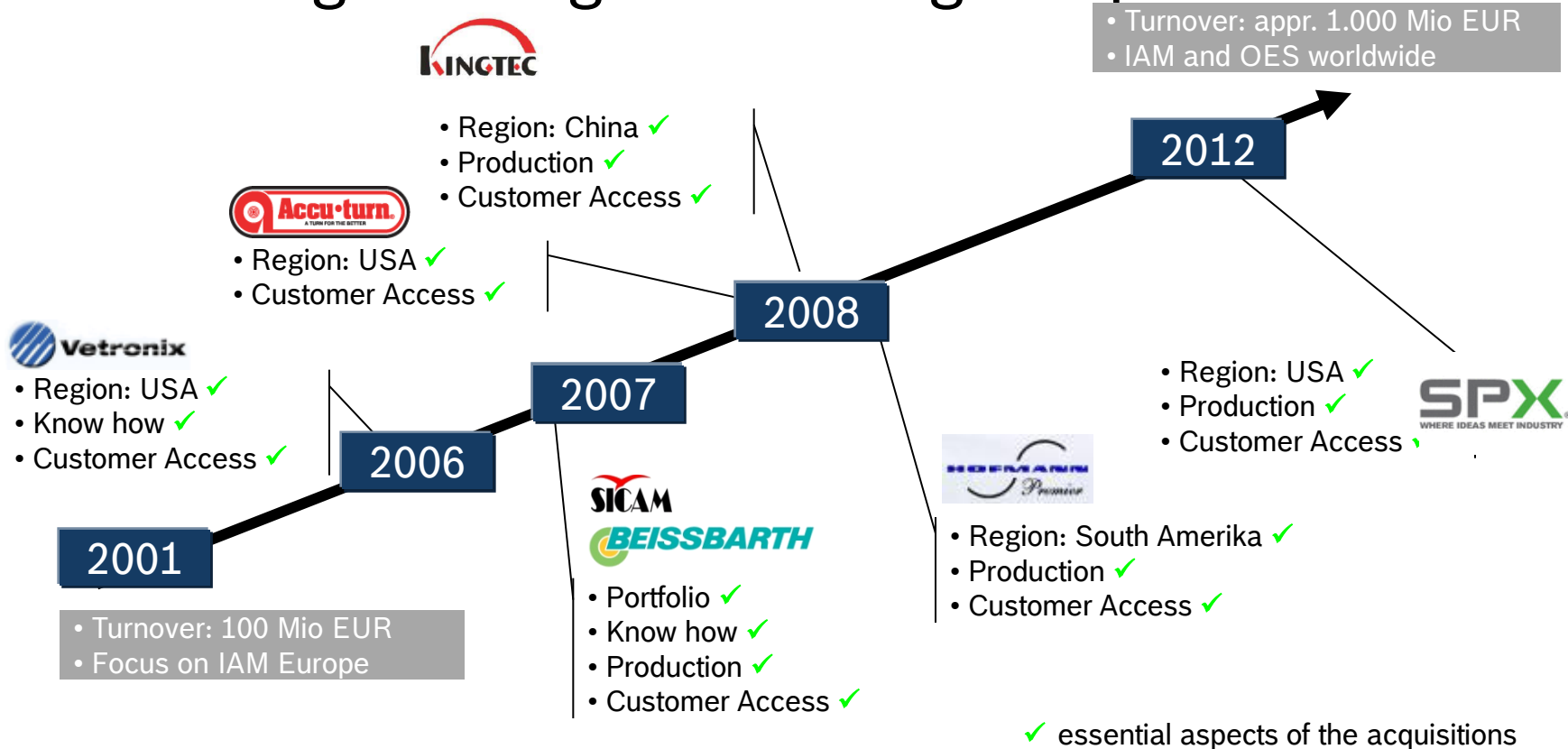
Bosch Group

Facts & Figures

- Founded in 1886 by Robert Bosch
- One of the worlds largest innovative technology based companies
- Owned by the Robert Bosch Foundation
- Represented in more than 150 countries
- Sales 2011: 51.4 bn. EUR - (outside Germany: 74 %)
- Investment in R&D: 9 % of sales
- Employees: 303.000
- Operates a total of over 350 subsidiaries and regional companies in over 60 countries



Bosch Diagnostics growth through acquisitions



Continuous improvement of product portfolios, sales channels
and the international setups through past acquisitions

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3D wheel alignment



ECU Diagnosis

Also for
R1234yf



Air conditioning
service



Battery service



Emission analysis



Vehicle analyzer



BOSCH

Wheel balancer / Tire changer



Test lanes



ESI[tronic] software



Lifts



Diesel test bench

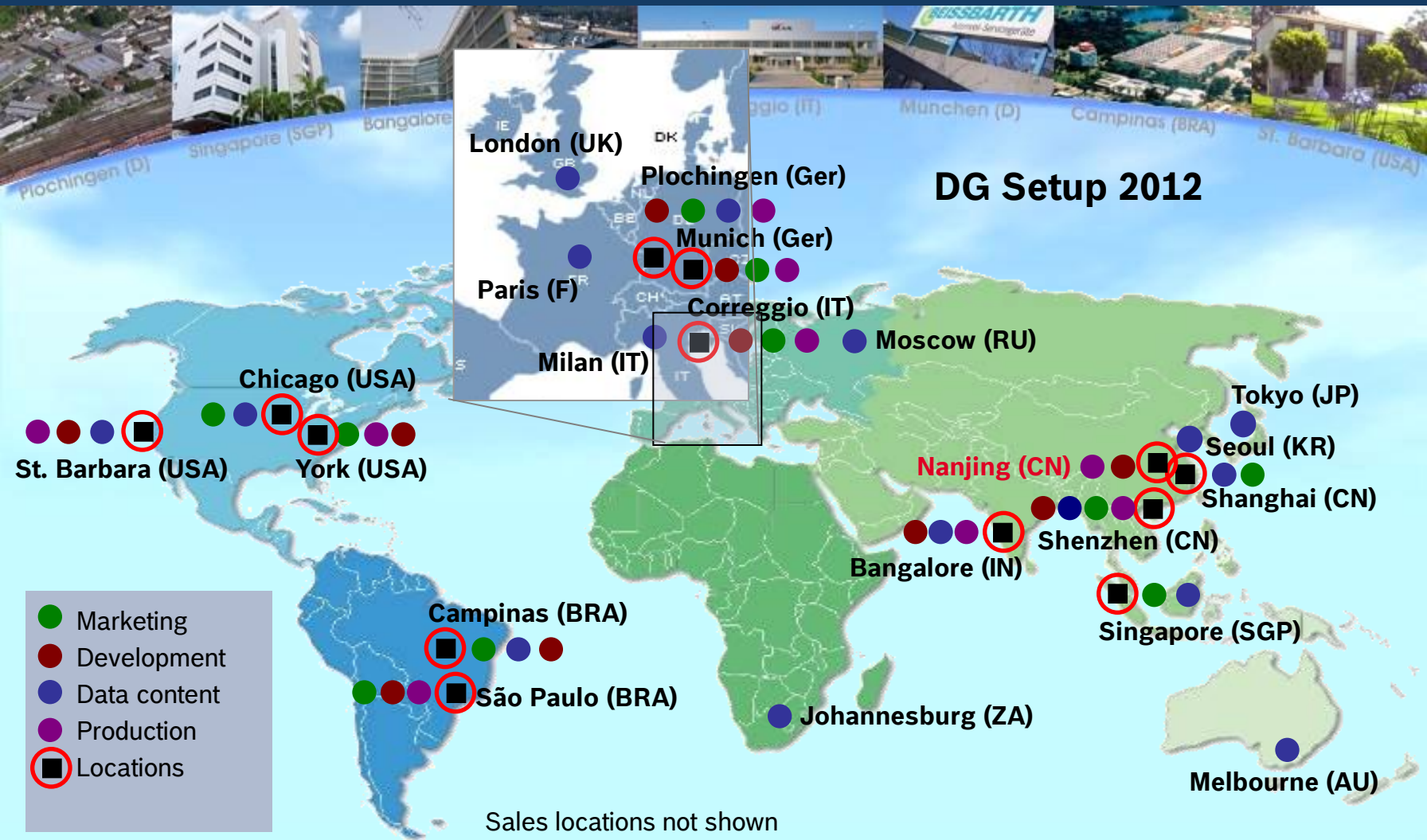


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BOSCH

46 Service Training Centers in 37 countries



Europe

23 Training Centers
in 22 countries

America

6 Training Centers
in 4 countries

Africa

5 Training Centers
in 3 countries

Asia Pacific

13 Training Centers
in 7 countries

Australia

1 Training Center
in 1 country

Our Customers

- Bosch Service Network
- Independent Workshops
- Wholesalers
- Vocational Schools
- Local institutions (TÜV)
- Key Accounts (Road Assistance, Tire Specialist, Fast Fitters)

Training Centres in India

- Four regional Training Centre
- Local Training Centre in all the states
- Centralized Training Centre in Bangalore

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BOSCH

- Bosch Group
- **Beissbarth**
- ECU Diagnosis
- ICperform – NEW Automatic Test Lane



Beissbarth GmbH (A Bosch Group Company)

Facts & Figures

- Founded in 1899 by Daniel and Herrmann Beissbarth
- Headquarter Munich / Germany
- World Wide Responsibility for Bosch Group:
 - Wheel Alignment
 - Vehicle Testing
- Approx. 230 Employees
- Owned by the Robert Bosch GmbH since 2007
- Same Robert Bosch Quality Standards / Development Process



Concentration on PTI-Business

- NEW product/business area established at Beissbarth GmbH
- World wide responsibility in the Bosch Group for
 - Business Development with Test Organisations
 - Project and Tender Business
- Brands: Bosch and Beissbarth
- Representing the Bosch Group in Associations for Vehicle Testing
(Germany: ASA / Europe: EGEA / World Wide: CITA)



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Bosch/Beissbarth: From the Expert to the Generalist



→ Complete Product Portfolio for Test Organisation!

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The new KTS 340: its strength – your success

Performance Feature overview

Complete
ECU-diagnosis

Trouble-
shooting-
instructions

Maintenance
Information

Uniform user
Interface

Only one
Identification

Simple to use

Immediately
useable

Integrated
measurement
technology

Integrated
WLAN

Commercial
accumulator



Easy to use

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Why always more electronics?



Consumer-driven tendencies:

- ➔ Comfort needs
- ➔ Safety needs
- ➔ Economy and ecology



Industry-driven tendencies:

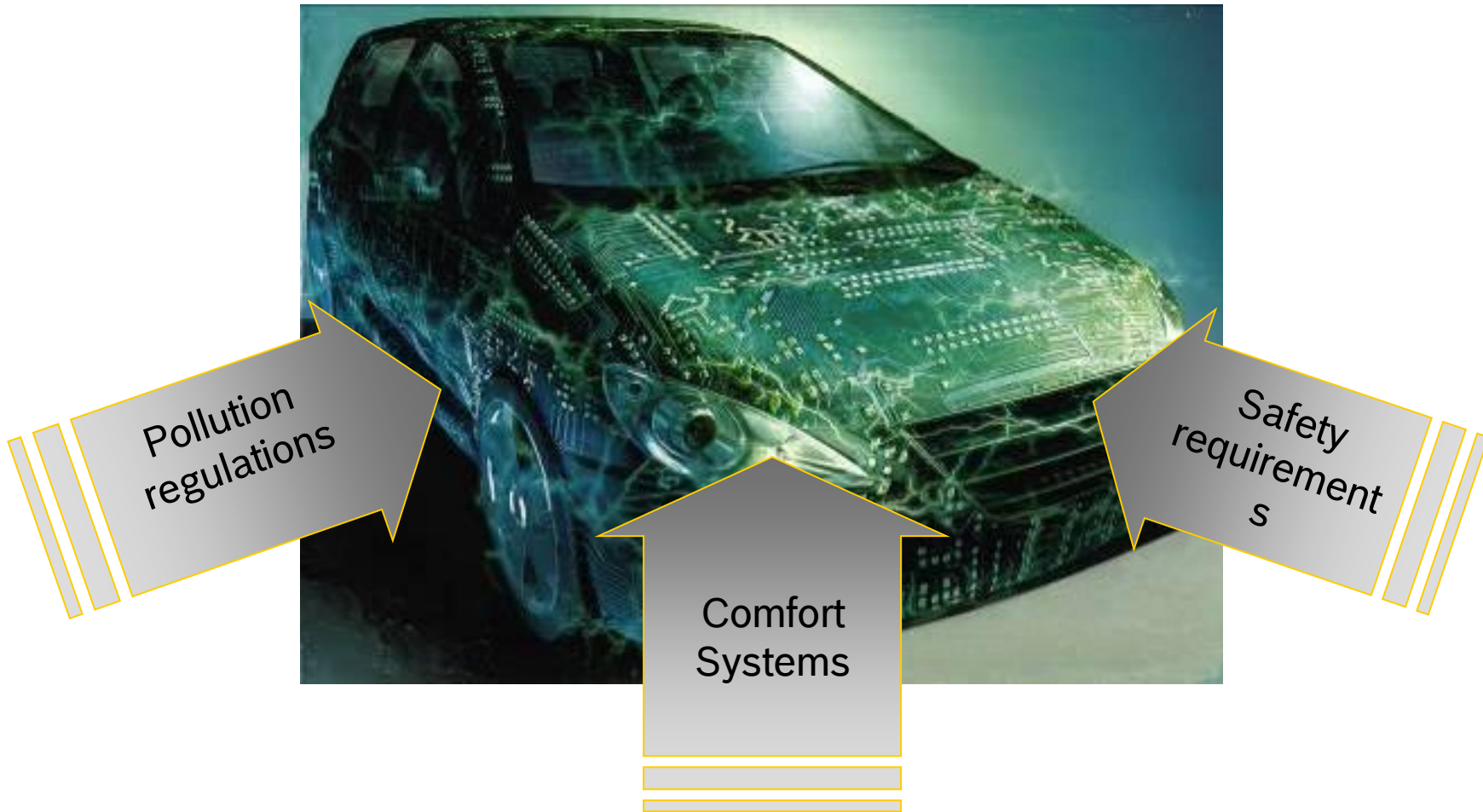
- ➔ Brand image
- ➔ Create USPs
- ➔ Added value



Politically driven tendencies:

- ➔ Mandatory standards
- ➔ Initiatives and campaigns (e. g. by the EU commission)

Why always more electronics on vehicles?



Comfort systems



Park assistant

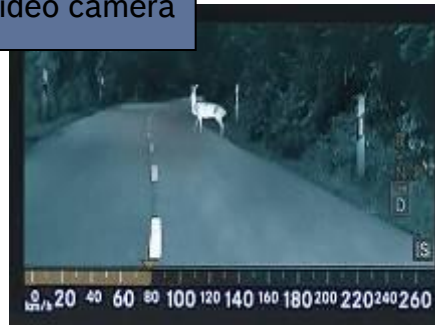


Tracking control system by video camera

ACCplus long range radar



Driver's assistance by video sensing:
Road sign recognition

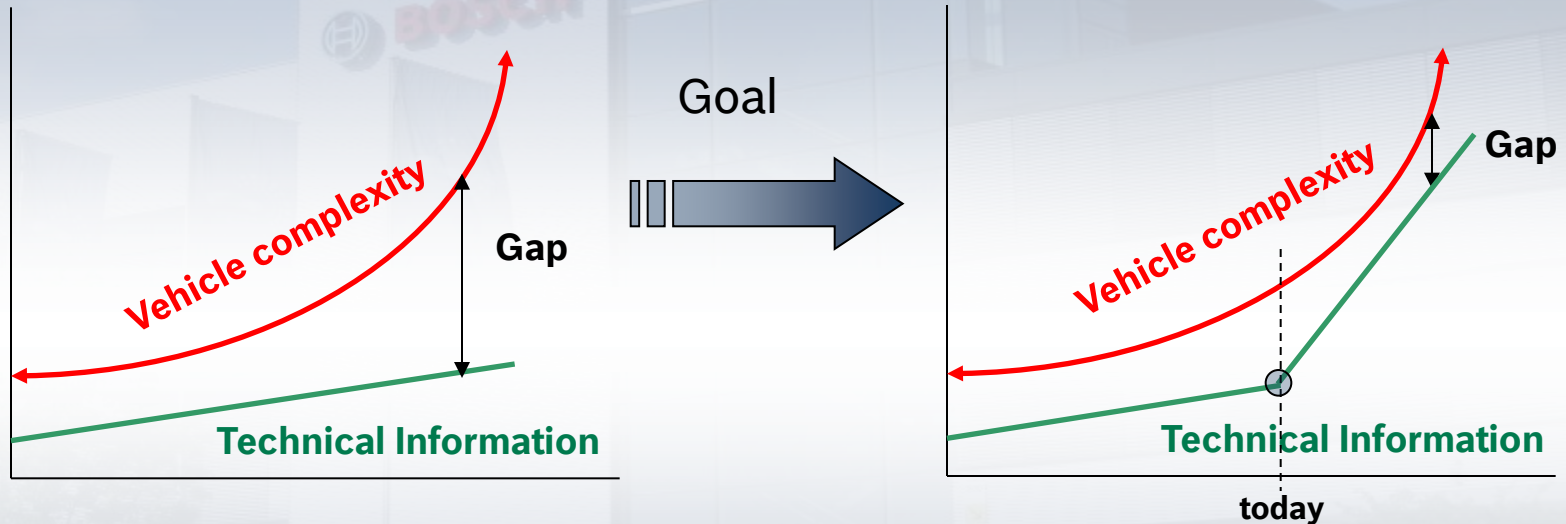


Night sight system „Night Vision“



Market trends – technological focus

Knowledge in Test Stations



Knowledge in Test Stations can not cope with increasing complexity

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„KTS“ from BOSCH

The complete solution for the Test Station

- Bosch Group
- Beissbarth
- ECU Diagnosis
- **ICperform – NEW Automatic Test Lane**



Goals of Vehicle Testing Organisations

- Optimized procedures
 - Automatic Start / Stop of Test
 - Automatic Data Transfer
 - Quicker Tests
 - More vehicle tests per day
 - Reducing the waiting time for customers
 - User friendly and easy for employees
- Easy Retest procedure

→ **“Fully Automatic Test Lanes”**

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NEW Automatic Test Lane Concept for Inspection Center



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Terminal 1: Data entry & visual Inspection 1

- Terminal with LCD 22“-Screen
- Industrial PC
- Barcode Reader
- or
- Automatic Number Plate Detection with integrated Camera



Terminal 2: Emission- and Headlight Test

- Terminal with LCD 42“-Screen
- Camera for Recording and / or pictures
- **Automatic** Headlight Tester (approx. 35 s per Test)
- Emission Tester regarding local specifications



Terminal 3: Track, Suspension and Brake Test

- Terminal with LCD 42“-Screen
- Brake Tester (Special Version for Inspection Center)
- Suspension Tester
- Side Slip Tester



Term. 4: Sound level Check & Visual Inspection 2

- Terminal with LCD 22“-Screen (in Pit or beside the Lane)
- Sound Level Meter
- Visual Inspection above a Pit



Data Server in Inspection Center

→ Equipment:

- Protected HP Server
- Back-Up-Solution

→ Tasks:

- Test Value-Storage
- Database-Administration



Terminal 5: Main Terminal

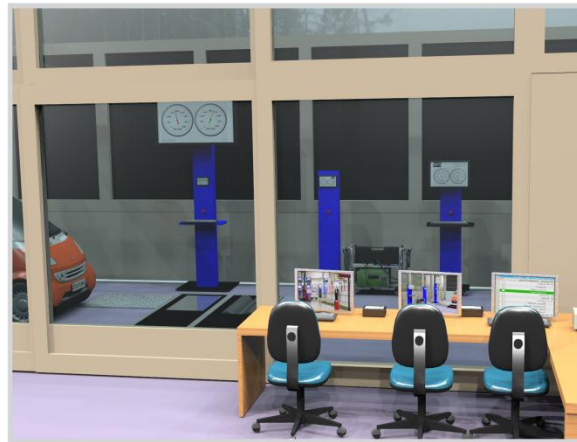
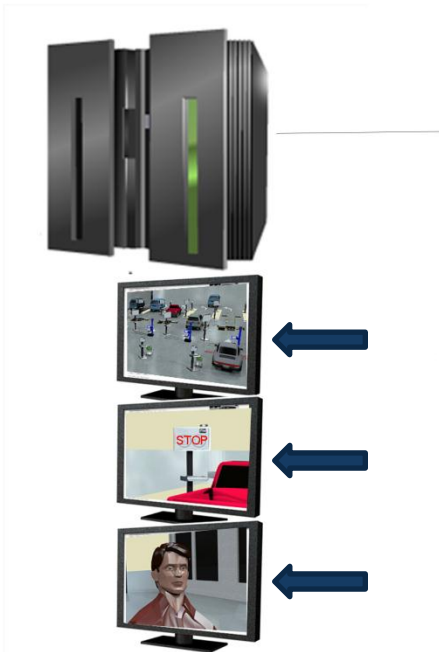
→ Tasks:

- .Test Lane Administration
 - .Inspector Controlling
 - .Visual Inspection
 - .Error Codes
 - .Vehicle Categories
 - .Reference values
- .Protocol-Print Out (Customer specific)
- .Test Value Storage
- .Data base (back up)

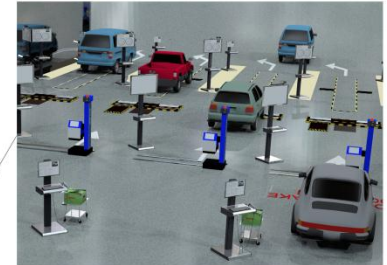


CENTRAL SERVER

LOCAL SERVER



1. Inspection center
2. Staff
3. Equipment & procedures



Overview of an Inspection Center

- ➔ Max. 10 Lanes
- ➔ Up to 8 Vehicles
- ➔ 80 Vehicles at same time
- ➔ Testing time:
< 2.5 min / Veh.
- ➔ >1,000 Vehicles per day



ICperform control – Controlling System

- On-line monitoring of ALL test lanes
- Access to line operating system
- Control of test procedure
- Storage of test lane log
- Access to test results



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Cameras by Bosch Security Systems

- 360° Cameras with 10x Zoom (Test Station can be controlled by Government)



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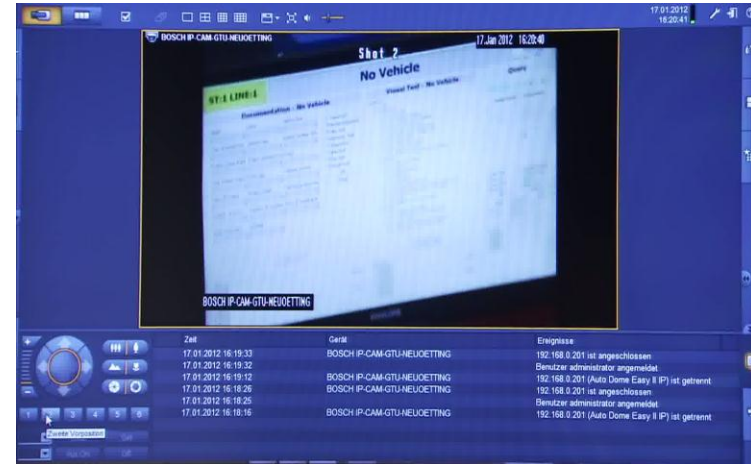
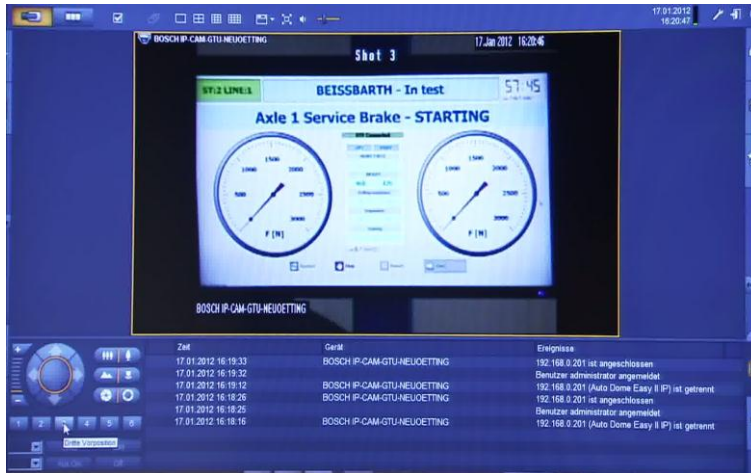
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ICperform control – Controlling System

- Positions of lane terminals are saved
- Each terminal can be monitored by the Bosch Security Management Software



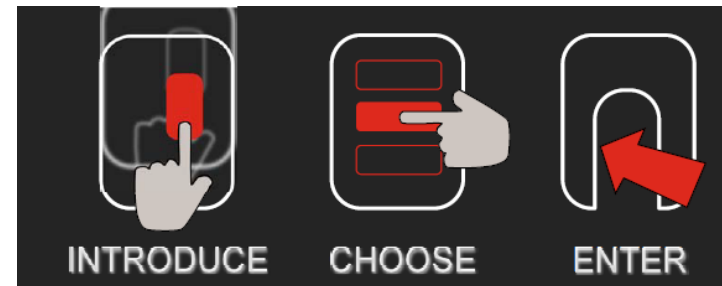
- Test lane can be controlled by an officer of a governmental institution
- Complete test lane can be deactivated by found of improper testing

NEW: Controlling the Main Terminal



Additional Features

- Online-Booking
- Finger print
- Inspector verification
- Time & attendance
- Administration Modules
 - Inspectors
 - Statistics
- Custom-made Print-out



Advantages of ICperform

- Two tests in the same terminal can be done in parallel
- No need to activate each single test to start it
- Bar code reader to prevent any manipulation
- Automatic Car Plate detection
- Picture of the care to be saved in the test result
- Video Camera system



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„ICperform“ from Beissbarth
The complete solution for the Test Station

www.icperform.com



**Thank you very much
for your attention**