



DSC 2018 EUROPE VR
Driving Simulation & Virtual Reality Conference & Exhibition

dSPACE

**dSPACE – Technology Provider
(not only) for Autonomous Driving**

Holger Krumm

Product Management

dSPACE GmbH, Germany

dSPACE

Who we are

- **dSPACE** = **d**igital **S**ignal **P**rocessing **A**nd **C**ontrol **E**ngineering

What we do

- Development of tools (hardware and software) for developing control systems and electronic control units
 - From single ECUs to large-scale virtual vehicles

Who Uses dSPACE Tools to Develop Control Systems?

- Automotive industry (80% of our customers) → Development partners

dSPACE -14-rack HIL system simulating ECUs of a truck



TOP 15 Customers in the Automotive Industry



Audi

DAIMLER



HONDA



FCA

FIAT CHRYSLER AUTOMOBILES



TOYOTA



RENAULT
Passion for life



BOSCH



dSPACE Worldwide

- **1,093** employees at dSPACE GmbH, Paderborn
- **113** in Pfaffenhofen, Böblingen, and Wolfsburg
- **294** employees in other countries
- **1,500** in total (full-time)



dSPACE Inc.
USA | Detroit



dSPACE Ltd.
United Kingdom |
Cambridge



dSPACE SARL
France | Paris



**dSPACE Mechatronic
Control Technology Co.**
China | Shanghai



dSPACE Japan K.K.
Japan | Tokyo,
Nagoya, Utsunomiya

Trends with autonomous driving

Environment sensors

- New technologies
- Resolution, range, costs
- 360° view, day & night

Data processing

- High performance and efficiency
- Fusion of sensor raw data
- Scalability from ADAS to AD

Artificial Intelligence

- Deep-Learning
- Self-learning systems



Vehicle networks

- Increasing bandwidth
- Service-oriented communication
- Automotive Ethernet Some/IP

Validation

- Hundreds of millions of test kilometers
- Sensor-in-the-loop Simulation
- SIL tests on PC clusters and in the cloud



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Thank you!

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