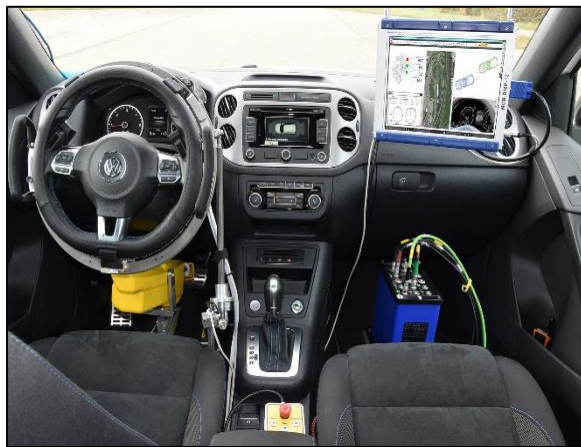


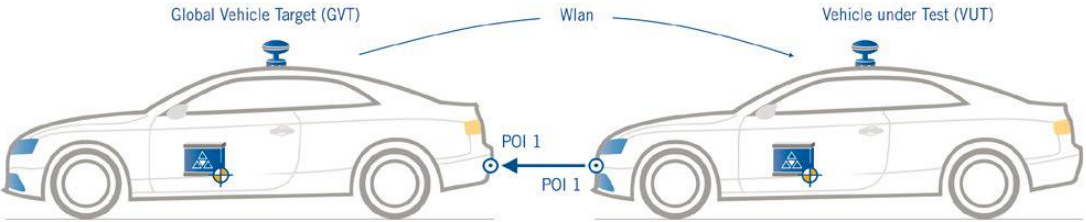
17_Driveability Testing Alliance





<p><u>Driveability Testing Alliance (DTA)</u></p> <ul style="list-style-type: none"> • Partnership consisting of 4 companies (AMFD, Dewetron, Genesys-Offenburg, Stähle) • Consortium to ensure the best environment for automated real-driving tests (e.g. EuroNCAP and active car safety systems) • Comparison of active car safety systems under standardised test methods • Plug & play solution with universal hardware and software • Easy installation into almost every vehicle class and high process stability 	<p>Setup</p> <p><u>AMFD</u></p> <ul style="list-style-type: none"> • Development of test methods • Execution of the real-driving tests • Post-processing of the measuring data with dedicated evaluation methods <p><u>Dewetron GmbH</u></p> <ul style="list-style-type: none"> • Data acquisition system incl. synchronous data acquisition software with multiple interfaces (analogue signals, CAN, FlexRay, temperatures etc.) <p><u>GeneSys Elektronik GmbH</u></p> <ul style="list-style-type: none"> • Fiber optic gyroscope platform • DGPS • G-sensors • 7 POIs (Point of Interest) <p><u>Stähle GmbH</u></p> <ul style="list-style-type: none"> • Automated self-driving system (actuators)
<p>Driving Maneuvres</p> <ul style="list-style-type: none"> • Forward Collision Warning (FCW) • Autonomous Emergency Braking (AEB)/Car-to-Car • Vulnerable Road Users (VRU) • Lane Departure Warning (LDW) • Lane Support Systems (LSS) • Emergency Lane Keeping (ELK) • ... (https://www.euroncap.com/en/for-engineers/technical-papers/) 	<p>Technical Data</p> <p><u>SFP-Hybrid from Stähle</u></p> <ul style="list-style-type: none"> • Steering robot: SSP-FrontFree <ul style="list-style-type: none"> • CAN, LAN, RS232, Dig IN/OUT • Nominal steering moment: 60 Nm @ 1280 °/s • Max. steering torque: 75 Nm • Max. control speed: 1700 °/s. • Brake pedal: AP-FF-B-Hybrid <ul style="list-style-type: none"> • Max. stroke: 150 mm • Max. Force (optional extendable): 350 N • Max. control speed: 0,4 m/s • Gas pedal: AP-FF-G-Hybrid <ul style="list-style-type: none"> • Max. control speed: 900 °/s <p><u>ADMA-G PRO+ from GeneSys</u></p> <ul style="list-style-type: none"> • 3 closed loop fiber optic gyroscope • Angle range yaw / roll / pitch: +- 180 / 60 / 60 ° • 3 servo G-sensors • Measuring range: +- 5 g • Position accuracy: 0,01 / 0,2 / 0,4 / 0,6 / 1,2 / 1,5 m (depends on GPS receiver) • DGPS • Max. measuring frequency: 1000 Hz <p><u>DEWE2601 from Dewetron</u></p> <ul style="list-style-type: none"> • 64 channels real-time (G-values, forces, positions, strain-gauges, CAN, ...)



Specimens <ul style="list-style-type: none">Cars, trucks and motorcycles	Features <p>Short installation and commissioning time plus modular adjustments to any specific car</p>
Location <p>Fahrzeugtechnisches Versuchszentrum Dresden Chair of Automotive Engineering August-Bebel-Straße 32 01219 Dresden (https://goo.gl/maps/QwMGh6A6cjm)</p>	
Functional Principle <ul style="list-style-type: none">Setting the target values for each test scenario by the driving program (Stähle Drivermodule)Actual values gathered by sensor platform (ADMA-G PRO+)Sensor data recorded and processed by the central measuring box and computer (DEWE2601)Variance analysis of real and target values (velocity, position, G-values, ...) through controllerClosed loop controlling of the car with actuators (SFP-Hybrid-Stähle)Car to car, car to infrastructure and car-VRU (Vulnerable Road Users) communication via sensor platform  <p>The diagram illustrates the functional principle of the test setup. It shows two cars: a 'Global Vehicle Target (GVT)' on the left and a 'Vehicle under Test (VUT)' on the right. Both cars are equipped with a sensor platform (represented by a blue box with a triangle) and a communication antenna (represented by a blue dome). A 'Wlan' connection is shown between the two cars. Both cars are positioned near a 'POI 1' (Point of Interest 1), which is marked with a blue circle and a triangle. The cars are shown in profile, facing each other.</p>	
Software for Controlling and Data Acquisition <ul style="list-style-type: none">DEWESOFT-7-DAS SoftwareDEWESOFT-OPT-CANDEWESOFT-OPT-CAN-OUTPLUGIN-ADMAPLUGIN-POLYGONPLUGIN-CAM-GIGEStähle Drivermodule	
Reference Projects <p>Various tests for OEM</p>	
Contact <p>Dipl.-Ing. (FH) Axel Gerhard Driving dynamics, Driving Comfort Email: axel.gerhard@tu-dresden.de Tel.: +49 (0) 351 / 647 51944 Fax.: +49 (0) 351 / 463 37066</p>	