



TEST CENTER
IDIADA CZ

April 2024



TEST CENTER IDIADA CZ - MLADÁ BOLESLAV

- Complete solutions for automotive engineering
- 60 Engineers from CAS, CAD, CAE and Testing departments in one location
- Offices 1.400 m², Workshop 2.200 m²
- Prototypes protection audit – TISAX participant ID PF2T6Y
- Prototypes laboratory accreditation ISO 17025:2018



TEST CENTER IDIADA CZ - MLADÁ BOLESLAV

- Next to the highway between Prague and Liberec
- Large parking spots for cars and trucks next to the workshop
- Prague airport - 70 km (1 hour)
- Address

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- Complex tests of bumpers, dashboards, central consoles, e-motors, batteries, compressors, side doors, tailgates, headlamps, airbags, sun visors, arm rests, interior trims, electronic components, ...
- ISO 16750, ISO 20653, VW 80000, MIL-STD-810, RTCA DO-160G, ...
- Development and production of the measuring and testing jigs
- Design and development of the new test methods and procedures



- Environmental tests
 - thermal, climatic and solar simulation
 - salt spray, dust, water splash/spray
 - muddy water spray, condensation
 - pressure, air and water leakage
 - stone impact, free fall/impact
- Vibration and vibration-climatic tests
- Functional, misuse and durability tests
- Electrical tests – operation and parametric
- Testing of batteries and transport packages



TESTING

BODY AND COMPONENTS

- Walk-in climatic chambers
 - 2x 14m³ 3100x2200x2000mm, -60 to +150°C, PV 1200, PV 2005
 - 2x 8m³ 2000x2000x2000mm, -60 to +150°C, PV 1200
- SoSi chamber 3600L, 1995x1150x1510mm, -40 to +120 °C, MH 2 x 4 kW, PV1200
- Climatic chambers 250L up to 3600L, -70 to +180°C, 5 K/min., PV 1200, PV 2005
- Shock chambers
 - 770x650x610mm, Hot +50 to +220° C, Cold -80 to +70° C
 - 410x470x650mm, Hot +50 to +220° C, Cold -80 to +70° C
 - manual replacement for big and heavy samples between walk-in chambers
- Heating ovens 250 to 750L, +30 to +300° C



- Corrosion chambers 450L, 1250L and 2000L
- Dust and sand chambers 500L, 1000L and 2000L
- Water spray, splash, immersion, muddy water, ...
- ISO 20653 – all IP codes (e.g. IPX6K, IPX9K, ...)
- Vacuum chambers 750L and 6500L
- Water condensation tests, Icing tests
- Chemical resistance tests, Leakage tests
- Explosive atmosphere tests
- 3D SLS printer Fuse 1 – 159x159x295mm

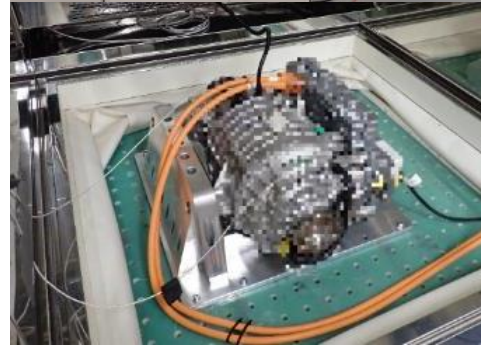


- Vibration system LDS V8 58kN
 - displacement 63,5mm (pk-pk)
 - load support capability 700 kg
 - horizontal slip table 1200x1200mm
 - guided head expander 1200x1200mm
 - VR Controller and SW
- Vibration climatic chamber Vötsch 12m3
 - test space
2500x2450x2000mm (d x w x h)
 - PV 1200, temperature range -70 to +180°C
 - additional thermal emitters for local increasing of temperature



- Vibration system Dongling 40kN
 - sine force 40kN
 - shock force 120N (100G/11ms)
 - displacement 100mm (pk-pk)
 - two horizontal slip table 900x900mm + 400x400mm
 - head expander 900x900mm
 - silent mode
 - VR Controller and SW

- Vibration climatic chamber Vötsch 1,2m³
 - test space 1100x1100x950mm (d x w x h)
 - PV 1200, temperature range -70 to +180°C



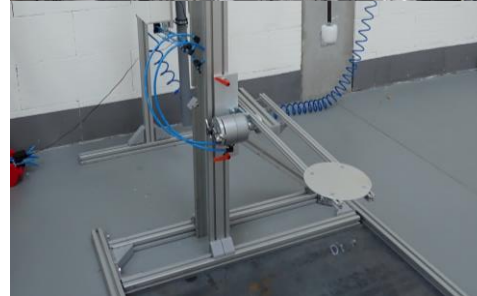
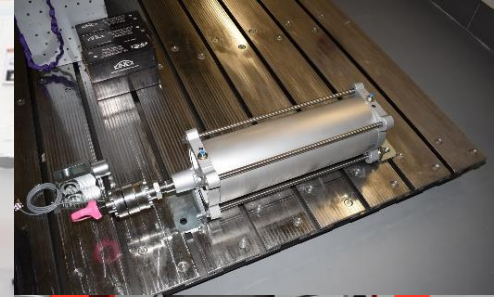
TESTING

BODY AND COMPONENTS

- Vibration system Dongling 120kN
 - sine force 120kN
 - shock force 360kN (100G/11ms)
 - displacement 75mm (pk-pk)
 - two horizontal slip table 1200x1200mm + 600x600mm
 - guided head expander 1200x1200mm
 - VR Controller and SW



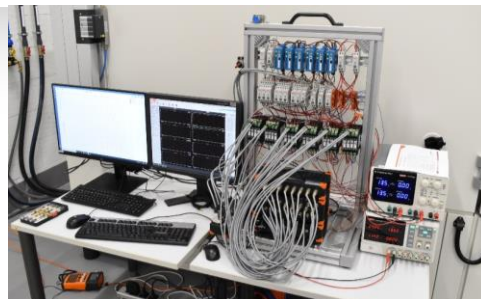
- Wide range of actuators and sensors
- PLCs for pneumatic and electric actuators
- Drop tower for free fall tests
- Ball drop and drop towers
- Photogrammetry GOM Tritop
- 3D laser scanner with arm Hexagon
- Spectrophotometer Konica Minolta
- High speed and thermal cameras
- Precision fastening systems INSIGHTqcx



TESTING

BODY AND COMPONENTS

- Wide range of electrical tests
- Vector VN1610/1640, CANalyzer and CANoe
- Programmable power supplies up to 1000V/15kW
- Voltage and Current DAQ Keysight and OM
- Laboratory multimeters, DC milli-ohm meter
- AC safety and insulation resistance testers
- Function generators, oscilloscopes, DC loads
- Signal generators for airbag testing



TESTING

BODY AND COMPONENTS

- Complex tests of e-motors, inventors, power management and batteries
- Cooling/heating system design and manufacturing
- Back-to-back test in cooperation with Applus IDIADA Spain

Environmental (example)

- K-01 High/Low Temperature Aging
- K-03 Low Temperature Operating Test
- K-05 Thermal Shock Test
- K-06 Salt Spray Test
- K-09 Damp Heat, Cyclic (with frost)
- K-11 High Pressure Cleaning
- K-12 Thermal Shock with Splash Water Test
- K-13 Thermal Shock Immersion Test

Mechanical

- M-02 Stone Impact Test
- M-03 Dust Test
- M-04 Vibration Test
- M-05 Mechanical Shock Test

Parameter Tests

- P-03 Large Parameter Test
- P-02 Short Parameter Test
- Physical Analysis

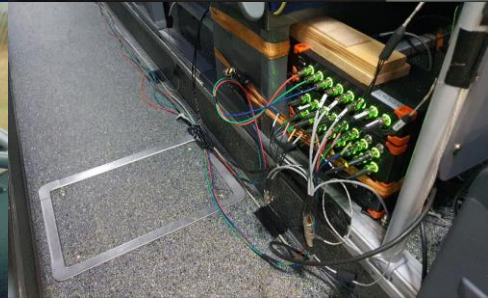
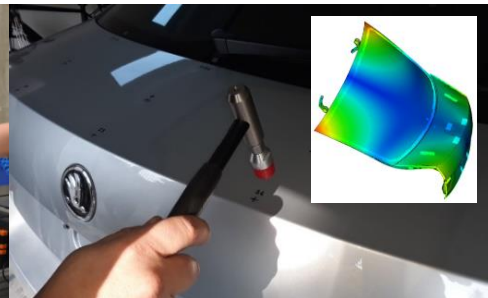


TESTING

BODY AND COMPONENTS

- Accredited environmental tests for wide range of products – climatic, solar, vibration, corrosion, ...
- Accredited tests of batteries
 - vibration tests UN R100 – 9A, UN 38.3 – T3, GB 38031 – 8.2.1
 - thermal tests UN R100 – 9B, UN 38.3 – T2
 - mechanical shock tests UN R100 – 9C, UN 38.3 – T4, GB 38031 – 8.2.2, SAE J2464 – 4.3.1
 - altitude tests UN 38.3 – T1
- Accredited tests of packages according to ASTM D4169-16
 - pre-conditioning, conditioning,
 - handling (drop test), vehicle stacking (compression test), concentrated impact
 - loose load vibration (repetitive shock test), vehicle vibration
 - low pressure hazard

- Modal measurements
- Full vehicle and component instrumentation
- Vehicle dynamics measurements
- Noise and vibration measurement
- Suspension analyses and optimization
- Engine mountings analyses and optimization
- Tests in public roads and proving grounds
- Multi body dynamics simulations
- Correlation with FEM and MBS



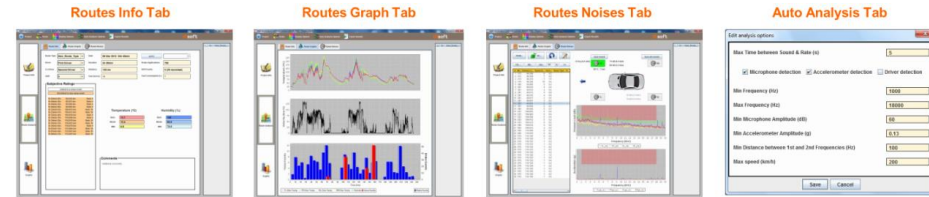
- DAQ Dewetron SIRIUS and DEWE 43 - 40 ICP and 32 universal channels
- postprocessing FlexPro, DIAdem, Beta CAE Meta
- Analog output, counters, GPS, cameras
- Vibration system K2100E100 (modal shaker)
- Sensors
 - accelerometers, microphones, modal hammer, gyroscope
 - load cells from 10N up to 50kN, strain Gages
 - displacement sensors (laser, potentiometer, LVDT, rope)
 - pressure sensors and flow meters
 - thermal and humidity sensors



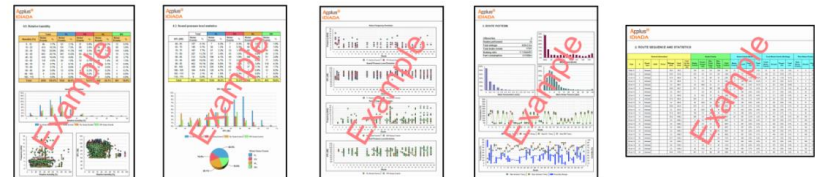
TESTING

BRAKES NVH AND DURABILITY

- dB soft (software tool)
- dB brake (data acquisition system)
 - environmental temperature and humidity
 - GPS with IMU, speed and distance
 - disc, pad and fluid temperature
 - brake pressure
 - capacity sensors for run out and DTV
 - accelerometers and microphones
 - pedal effort and stroke
 - steering wheel angle
- Brake regeneration research



Final Report Generation and Comparison of Data



- Long time durability tests in public roads
- Quality tests – highway, district roads, city
- Vehicle inspections, market driving assessment
- Driver activity assistant, adaptive frontlight and multifunction camera system tests
- ADAS tests - VN1610/1640, CANoe, CANalyzer
- Vehicle service and tire changing
- Management of the BMW proving ground in Sokolov





THANK YOU
FOR YOUR KIND ATTENTION



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