



YOUR DEVELOPMENT PARTNER

Test Center IDIADA CZ

5/2018

OVERVIEW

■ BASIC INFORMATION'S

■ DURABILITY, NVH, VEHICLE DYNAMICS, POWERTRAIN

- Activities
- Available Equipment

■ BODY AND COMPONENTS

- Planned activities
- Planned equipment and expected start of operation

BASIC INFORMATION'S

- Start of operation 4/2018
- Workshop 2.200 m², Testing offices 220 m²

OBJECT CHARACTERISTICS

- A-class industrial property with two drive-in and one dock entry to workshop
- Developed with modern energy efficient construction materials/methods

DEPARTMENTS

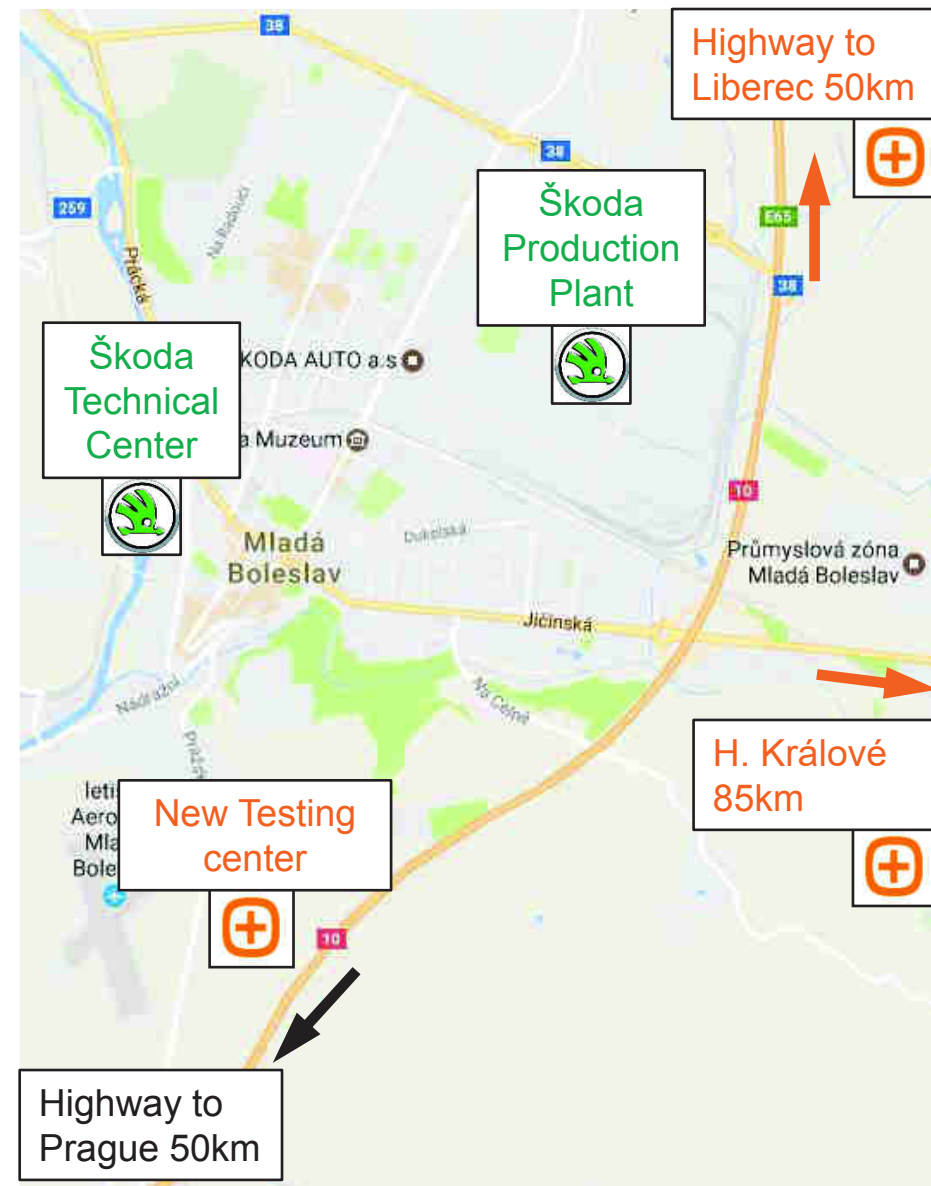
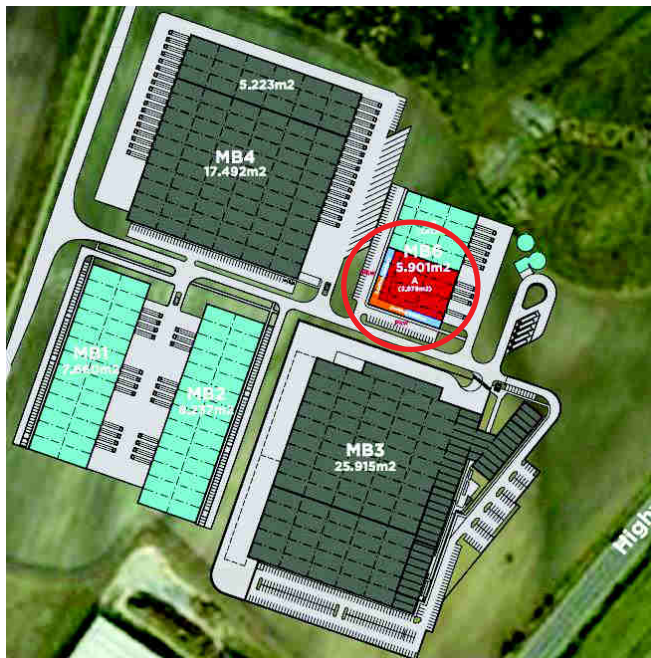
- CAS
- CAD
- CAE
- Testing



Test center IDIADA CZ

LOCATION

- Mladá Boleslav – Bezděčín, CZ
- Next to the highway between Prague and Liberec
- Large parking spots for cars and trucks next to the object
- Prague airport at 70 km (1 hour)



TESTING DEPARTMENT LAYOUT

I. Durability, NVH, Vehicle Dynamics, Powertrain

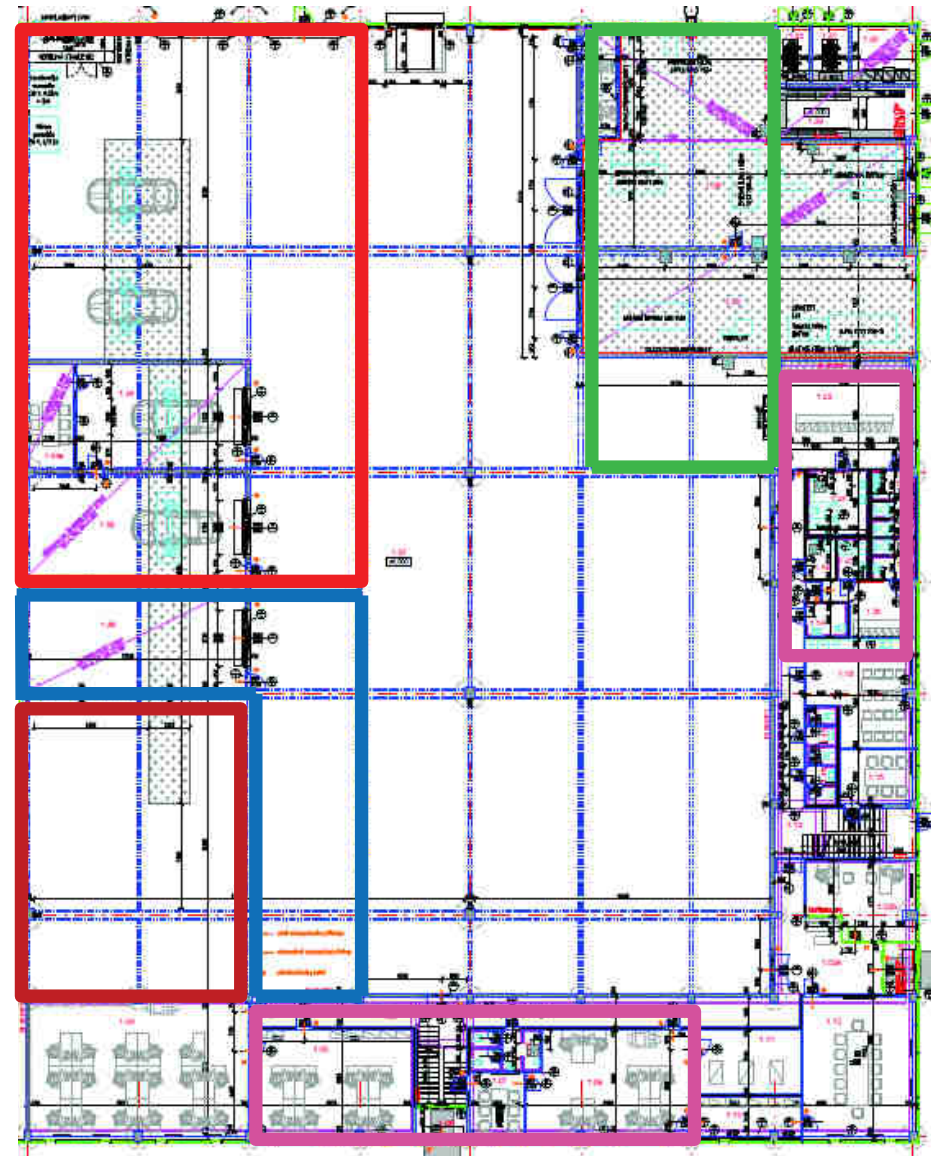
- Complete vehicle instrumentation and testing (preparation for outdoor testing)

II. Body and Components

- Shakers, climatic chambers, SoSi, ...
- Static and dynamic loading with pneumatic actuators and NVH component testing

Common Areas

- Storage area
- Office + sanitary



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I. Durability, NVH, Vehicle Dynamics, Powertrain

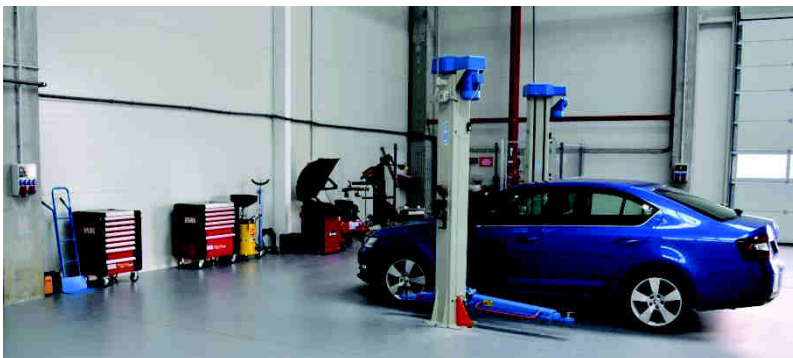
- Workshop with lifts, tire changing equipment and exhaust gas extracting unit available for all products listed above
- Common DAQ and sensors available for all products
- Business cases details available in below slides
- **Fully operational 6/2018**

OTHER PRODUCTS

- **Active systems** – testing of active systems
- **ADAS** – instrumentation and driving tests, tiredness, radar, MFK, ...
- **Brakes** – driving tests in cooperation with IDIADA Spain
- **Electronics** – driving tests of light and components, office and testing area available
- **Design Engineering** – collateral projects CAS+CAD+CAE+Testing, correlation activities (CAE + testing), 3D scanning, 3D printing, ...

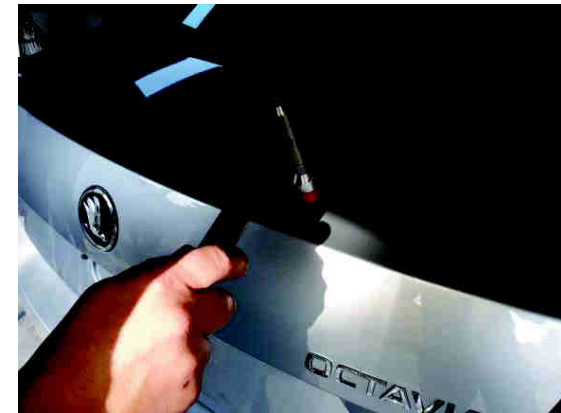
DURABILITY

- Outdoor long-time durability tests in public roads
- Quality tests – Highway, District roads, City
- Market driving assessment
- Testing in Mladá Boleslav and Liberec area
- Testing center in MB will be used for vehicles check and as a base for customers
- Customers:
 - Škoda Auto – Durability, Driver Activity Assistant, Adaptive Frontlight System
 - Hyundai – Durability
 - HQ Spain – Durability (Lexus, Toyota, Alfa Romeo, Nissan)



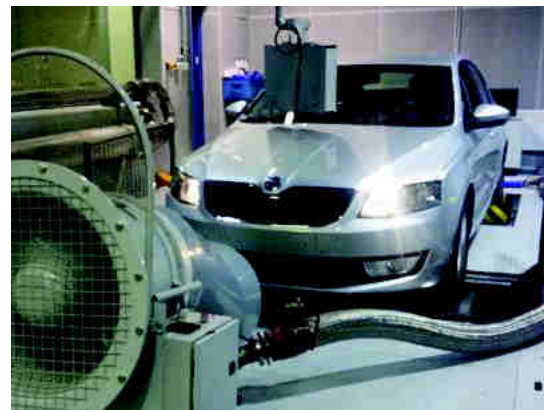
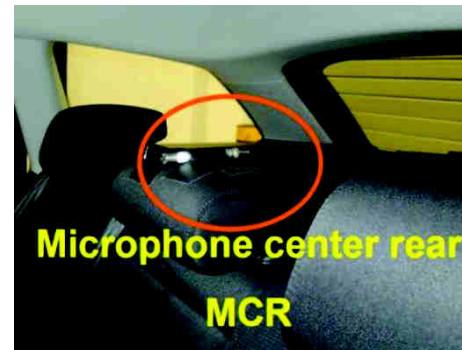
NVH

- Modal analyses of components – steel, plastic and composite (e.g. composite tailgate),
- Complete vehicle vibration and acoustics measurements,
- Vibration and vibro-climatic tests of components.



VEHICLE DYNAMICS AND POWERTRAIN

- Complete vehicle instrumentation for outdoor testing – ride and handling in proving grounds (Úhelnice, Ehra, ...) and public roads
- Suspension testing – problem identification and proposals
- Durability of suspension and engine mountings – force/acceleration measurement



AVAILABLE EQUIPMENT

DAQ Dewetron SIRIUS

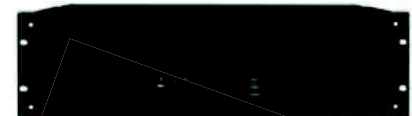
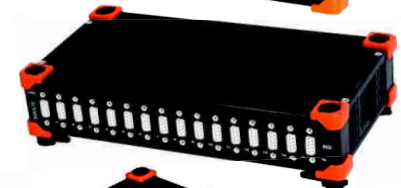
- 24 IEPE High density channels – 120dB dynamic range
- 16 STGS universal channels (strain gage, IEPE, ...)
- High density 1x24 bit ADC @ 200 KHz 120dB dynamic range
- S-BOX DAQ module with CPU and HDD
- 100Hz GPS module
- Additional 16 channels available from component testing

K2100E100 Modal Shaker Kit

- 2100E11 modal shaker 440 N, 25,4 mm
- 2100E18 power amplifier and cooling package

Modal Hammer Kistler

- 5000 N (250 g)
- Frequency range 0..6900 kHz, sensitivity 2mV/N



AVAILABLE EQUIPMENT

Accelerometers

- 12x 3-axial Kistler 8766A100BT, 3D IEPE PiezoStar®, 100g, 0.5...8000Hz, -55...120°C
- 1x DS-GYRO1
- 1x 3-axial MEMS Kistler K-Beam ±2g
- 6x 1-axial MEMS 8305 ±2g
- 3x 1-axial MEMS 8305 ±50g
- 6x 3-axial MEMS ADXL325(7)BCPZ
- 1x Seat pad KB103SV-100



Other sensors

- Microphone Microtech Gefell M370-0318
- Additional microphones B&K4942 expected
- Thermal sensors – standard a HI TEMP
- Strain gages HBM



Camera DS-CAM-600c

- Camera for Dewetron DAQ system



AVAILABLE EQUIPMENT

2x 2-poster lift OMCN 199/ALFA - 4t

Tire changing set TECO 36 Special + 680WP + UPH4



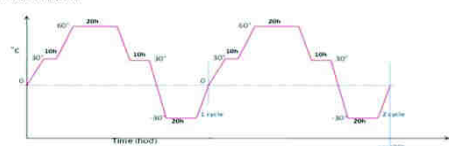
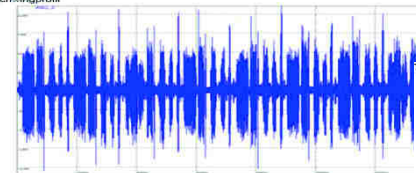
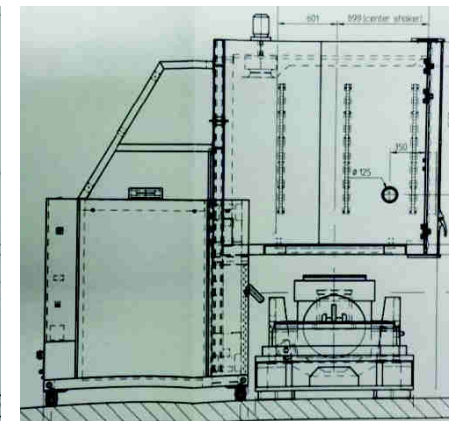
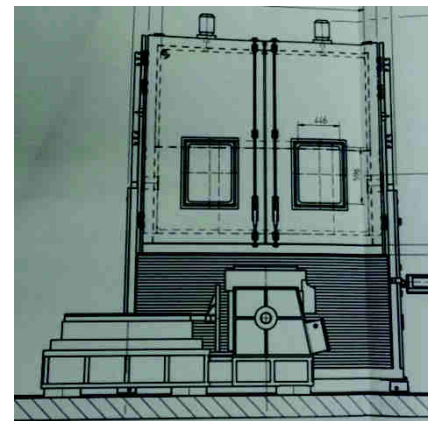
EXPECTED EQUIPMENT

Scissor lift OMCN 822+853/A - 4 t

Exhaust extraction FILCAR ARCA - 100/10 PB



- Target: provide complex development process in one location
- Close cooperation between CAS, CAD, CAE and testing departments
- Universal equipment which could cover wide range of automotive component testing
- Focused on complex vibration, thermal and force loading tests for dashboard, bumpers, ...



AVAILABLE EQUIPMENT

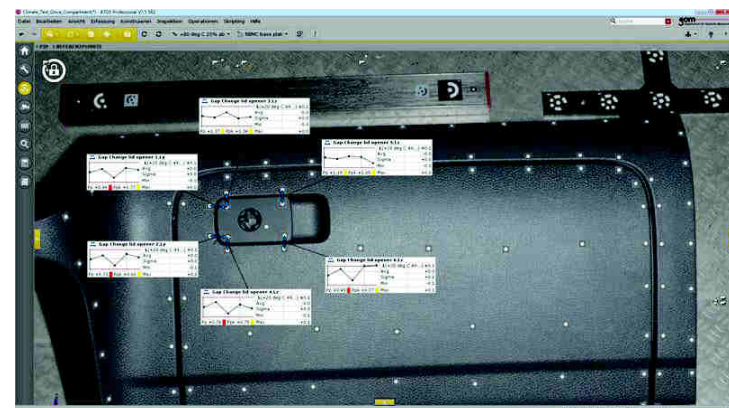
DAQ Dewetron DEWE-101 and 43 – available

- 8+8 universal channels (strain gage, IEPE, ...)
- Available for component testing



Photogrammetry GOM Tritop – available

- Digital measuring camera with full frame sensor (based on Canon EOS-1DX)
- Tritop Professional Software



EXPECTED EQUIPMENT

Vibration system LDS V8-440-HBT1220-SPA-40K with guided head expander

- Sine force peak 60 kN, max. acceleration sine peak 50 g
- Internal load support capacity 700 kg
- Horizontal slip table 1200x1200mm
- Guided vertical head expander 1200x1200mm
- Thermal barrier kit for connection with climatic chamber
- **Expected availability 11-12/2018**



Vibration climatic chamber Votsch 12m³

- Internal dimensions 2300x2300x2000mm
- Max. component dimensions approx. 2000x2000x1800mm
- PV 1200, temperature range -70/+180°C
- Additional thermal emitters for local increasing of temperature
- **Expected availability 4/2019**



- Wide range of vibration and vibration-climatic tests in vertical or horizontal direction
- Suitable for dashboard and bumper tests with segment of body, fuel tank, ...

Walk-in climatic chamber Votsch VK 14'/60-150

- PV 1200, PV 2005, temperature range $-60 \div +150$ °C
- Internal dimensions 3100x2200x2000mm (14m³)
- **Expected availability 12/2018**



Climatic chamber Votsch ClimeEvent C/1500/70/5

- PV 1200, PV 2005
- Temperature range $-70 \div +180$ °C, 5 K/min.
- Internal dimensions 950x1100x1475mm (1,5m³)
- **Expected availability 9/2018**



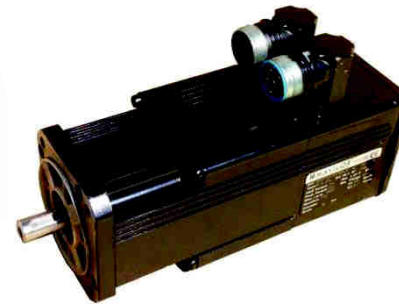
SoSi climatic chamber Votsch SUN 3600

- MH emitter 2 x 4 kW
- Temperature range $-30 \div +100$ °C
- Internal dimensions 1995x1150x1510mm (3,6m³)
- **Expected availability 9/2018**



Pneumatic/electric actuators

- Wide range of pneumatic actuators, control system (PLC), testing beds, modular system of AI-profiles and sensors for dynamic, durability and static tests
- **Expected availability 7-8/2018**



Thank you very much for your kind attention



YOUR DEVELOPMENT PARTNER

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