



**AURELCZ**  
GROUP

AMZ Cooperation Workshop with Czech Republic: Automated  
Driving 29. - 30. April 2021



### Czech company

Family ownership

### Business Premises

Mladá Boleslav



Liberec

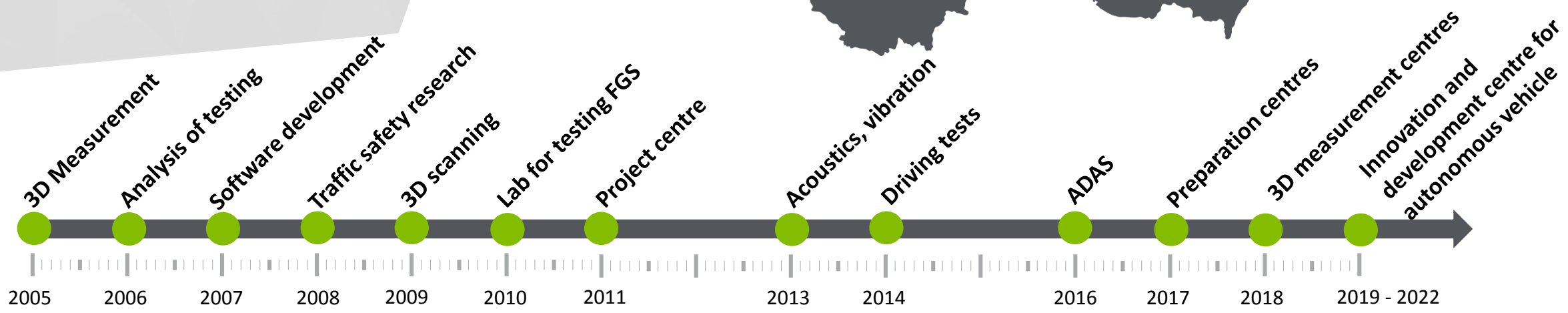
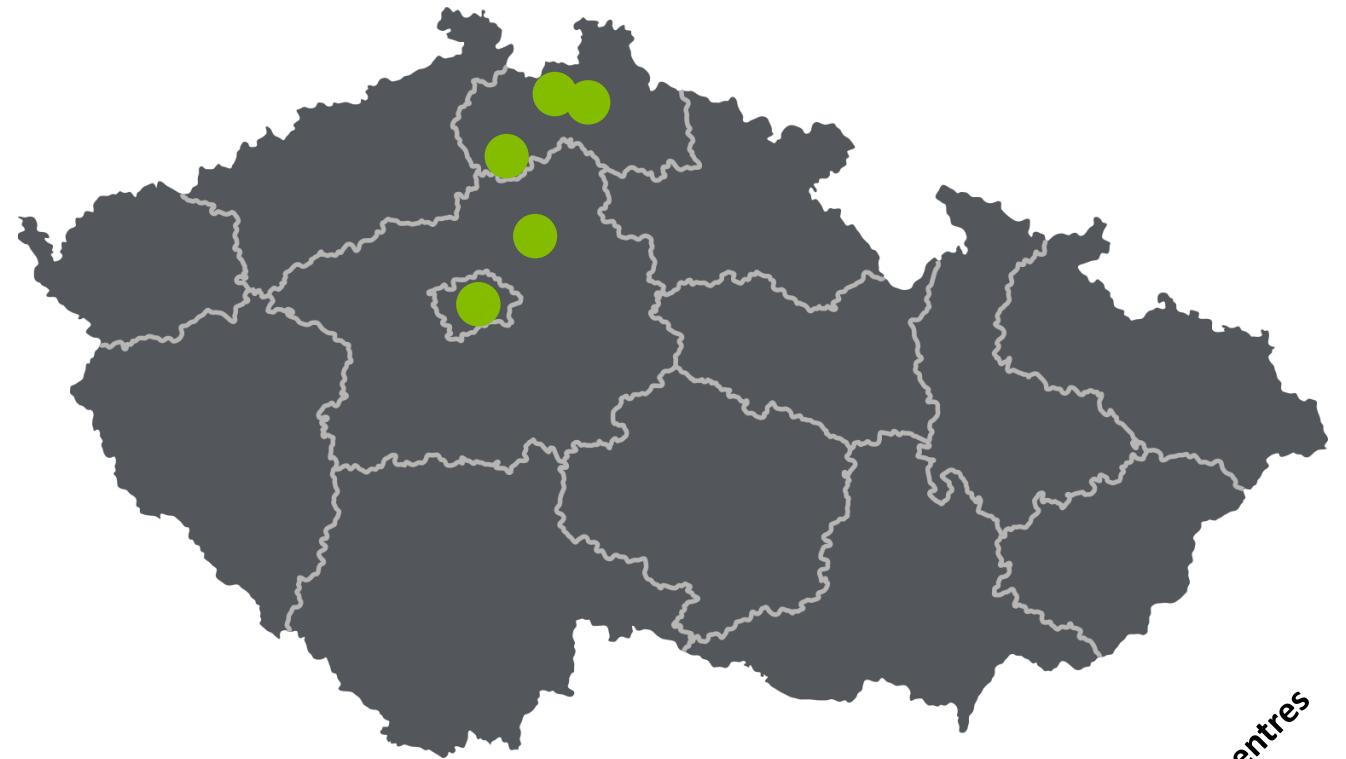
Břehyně

Chrastava



### Extensive team of specialist

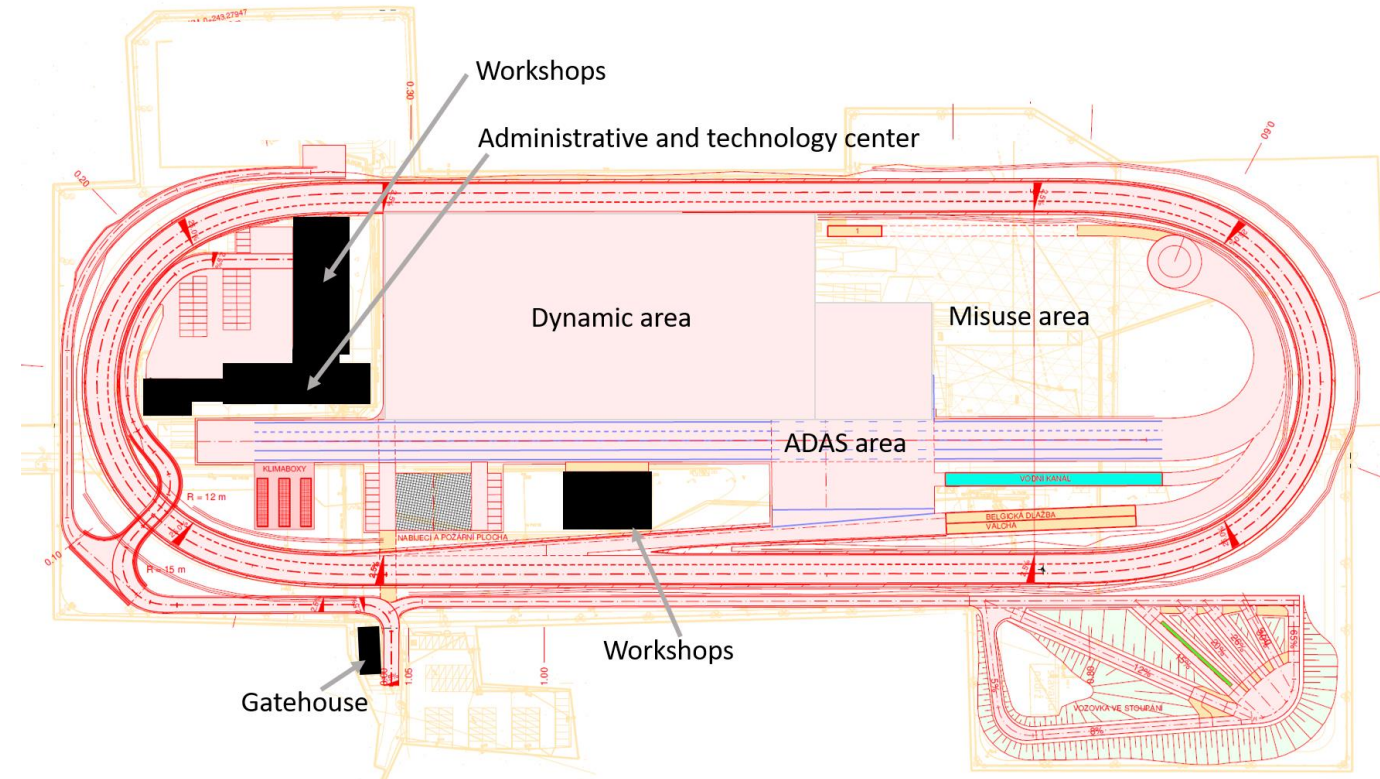
More than 230 employees



# Innovation and development center for research of autonomous vehicles Břehyně

## Area development – status 2022

- Asphalt area and lock paving
- Small and large oval
- Crossroads and different turns
- Secure halls for testing parking systems, lights, etc.
- Climate box for 2 vehicles ( -40 °C to + 80 °C)
- TISAX Security Clearance (ISO 27,001)
- 5G network, BTS installed on facility



# DRIVER ASSISTANCE SYSTEMS TEST

## Experience

- ADAS testing since 2016
- ABdynamics and 4Active systems
- Complete active safety tests - current ENCAP protocol (C2C, VRU, LSS, SAS)

## Development

- ENCAP 2022 - (PTW), V2X
- Driving tests component for robots  
e.g.: er control characteristics, airbag unit – function MKB, PreCrash

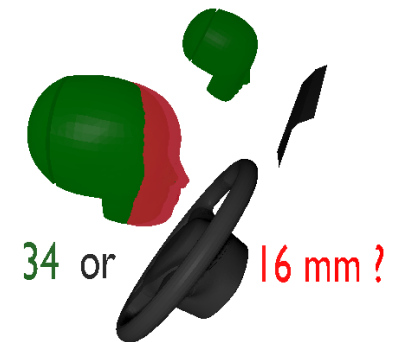
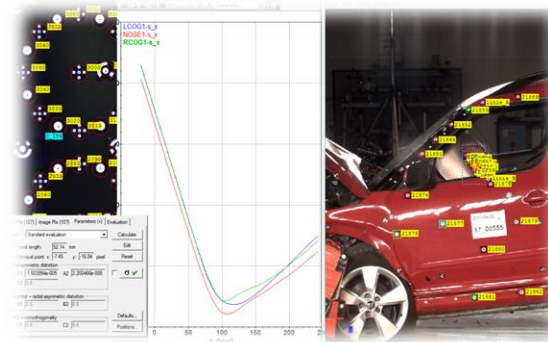
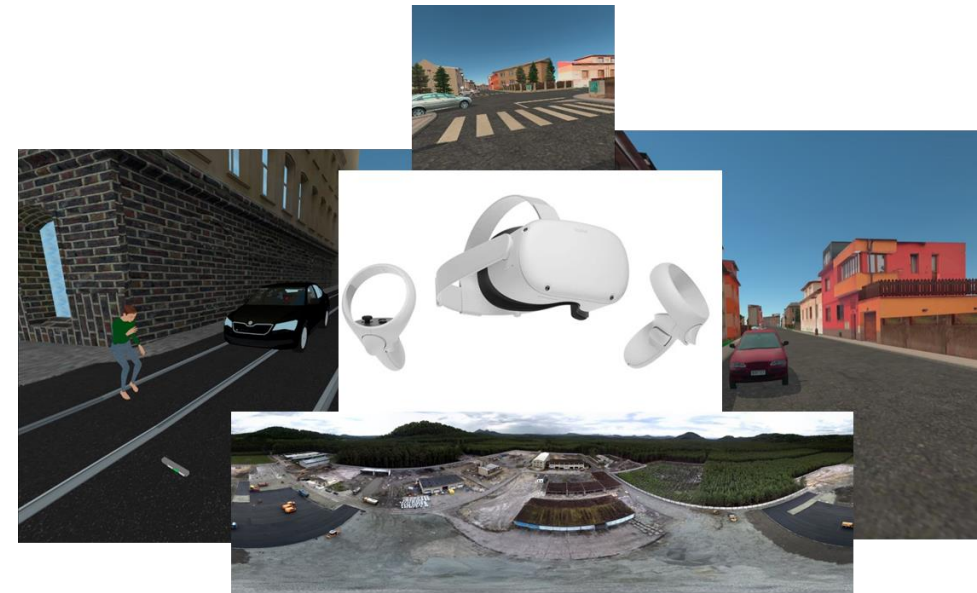






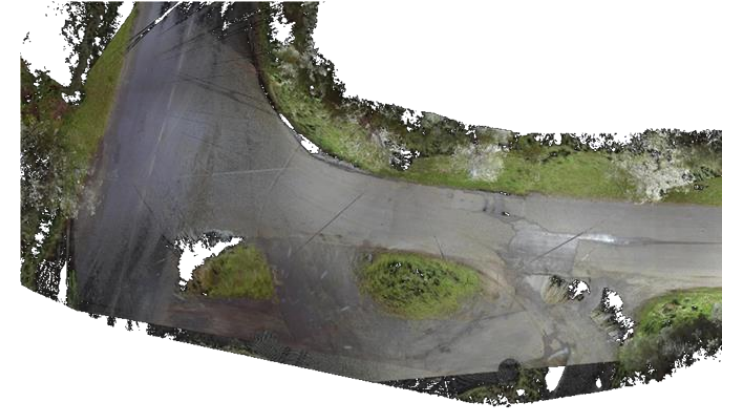
# 3D MEASUREMENTS & VIRTUAL REALITY FOR SIMULATION

- **3D photogrammetry** - static and dynamic
  - Clouds Points
  - Deformation vectors
  - Trajectory
- **Scan**
  - polygon models
  - color maps
- **Visualization and virtual reality**
  - evaluation for all measurement methods and obtaining additional information
  - scripting and solving individual requirements
  - creating a scene

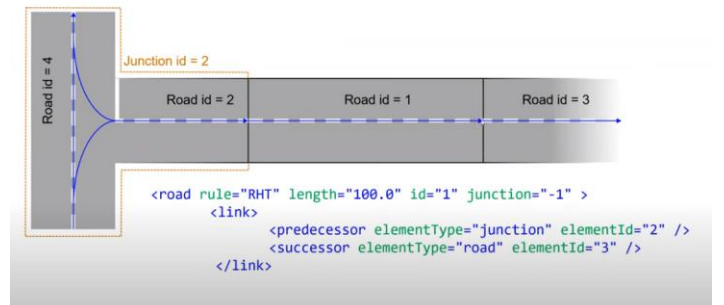


# ACCIDENT RESEARCH

- Accident situation
- Track's recording
- Investigation
  
- Outputs
  - Orthophoto map (non-prospective projection with scale)
  - Accident resimulation 3D simulation model (Virtual Crash and PC Crash)
  - OpenDrive ( xodr)
  - Open Scenario (xosc)



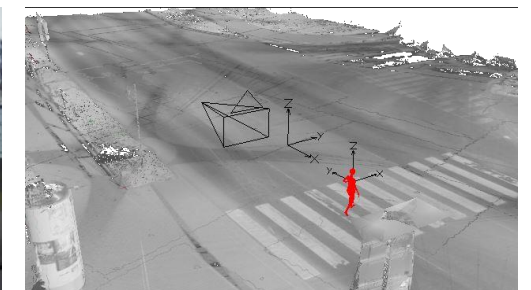
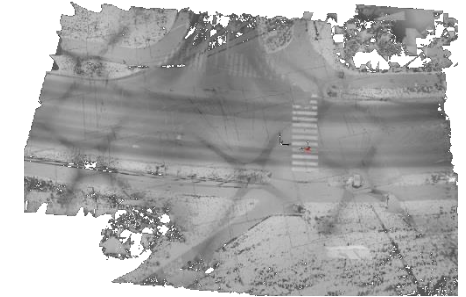
ASAM OpenDRIVE: Road Definition





# USE VIDEO FOOTAGE TO ANALYZE THE PROGRESS OF A TRAFFIC ACCIDENT

- Visualization of Accident progress
- Dynamic analysis of Accident participants
- Conversion to Virtual Reality
- Public cameras or dash cams (on-board)
- Quality vs. accuracy





# Research & Developmnet

**2020** Memorandum of Cooperation between  
Faculty of Transportation Sciences , Department Děčín  
and Aurel s.r.o.

**FACULTY OF  
TRANSPORTATION  
SCIENCES**



# Thank you for your attention!

For any questions please contact me :

**Jan Ritter**

AUREL CZ s.r.o.

**Tel:** +420 739 539 114

**Web:** [www.aurelcz.eu](http://www.aurelcz.eu)

**Mail:** [jan.ritter@aurelcz.eu](mailto:jan.ritter@aurelcz.eu)





**Ing. Petr Šimák**

Company director and officer



+420 602 305 830



petr.simak@aurelcz.eu



**Ing. Vojtěch Šimák**

Company director and officer



+420 774 048 400



vojtech.simak@aurelcz.eu



**Ing. Michal Mrkvička**

Head of development



+420 774 148 401



michal.mrkvicka@aurelcz.eu



**Bc. Tomáš Zahrádka**

Deputy head of development



+420 723 756 460



tomas.zahradka@aurelcz.eu



**Ing. Jan Cón**

Head of Innovation and  
Development Center



+420 730 575 651



jan.con@aurelcz.eu



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Thank you