

CITA SubWG1 on Brake Testing  
webmeeting, 1st October 2020

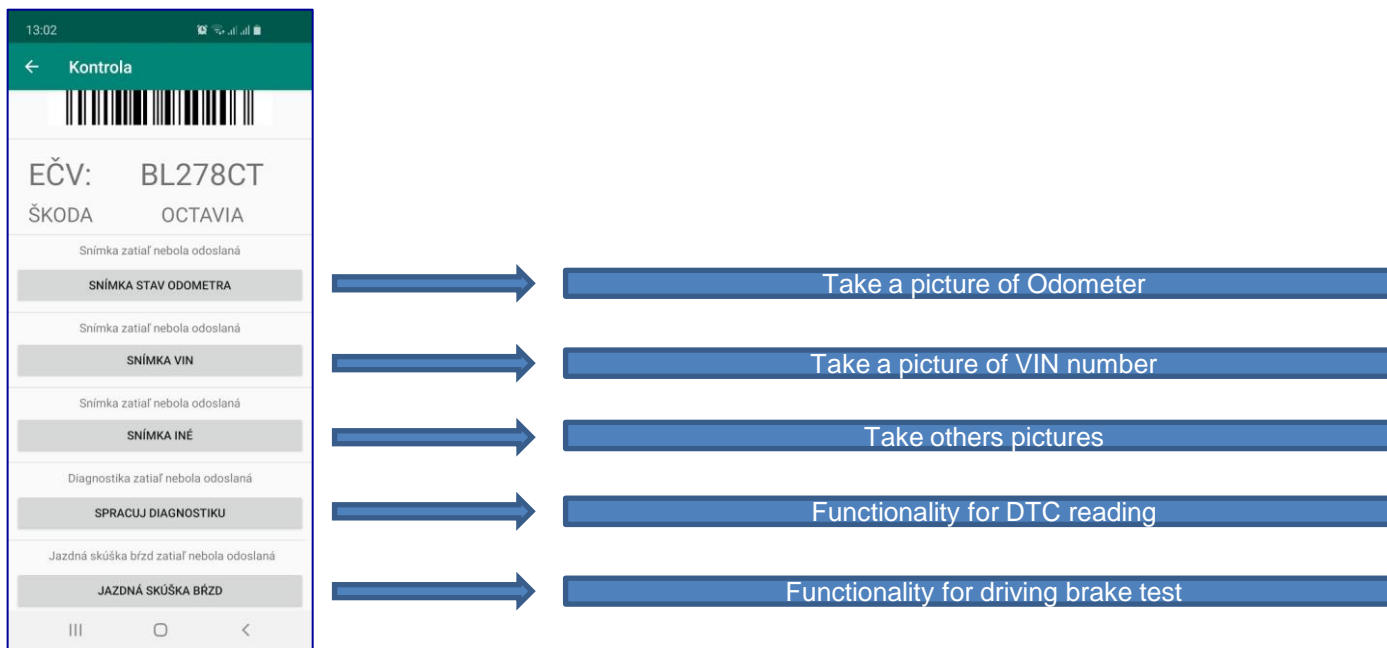


# **TESTEK's mobile application replacing decelerometer approved by the Slovak MoT**

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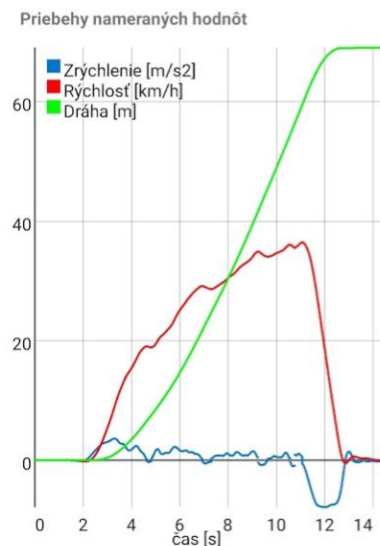
# Mobile application

- Developed by TESTEK with the Institute of Automotive Mechatronics
- Free application for PTI Inspectors
- Application takes and transfers pictures of VIN number, Odometer and other to the information system
- Application reads and transfers DTC to the information system (mentioned in the previous SubWG Brake Testing meeting)
- Functionality for driving brake test is available to use from June 2020



# Mobile application – driving brake test

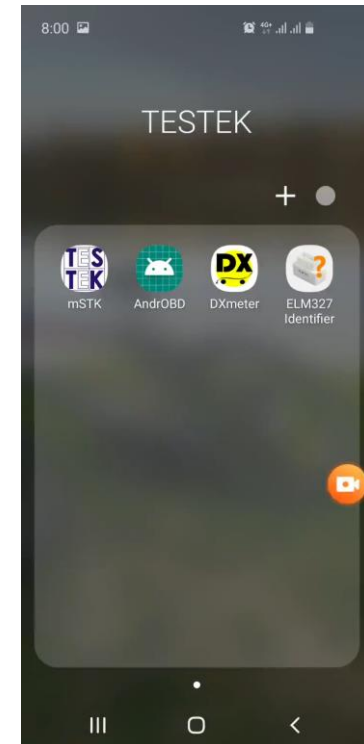
- Mobile device with application must be in a holder in a tested vehicle in any position
- Application uses an accelerometer in mobile device to calculate
- A longitudinal acceleration of vehicle is calculated by the accelerations of mobile device
- The mean fully developed deceleration is calculated by longitudinal deceleration
- From the mean fully developed deceleration brake efficiency is calculated



# Mobile application – driving brake test

## Video from a driving brake test

- Launch the application and put the mobile device to a holder
- Selection of tested vehicle
- Choosing functionality for driving brake test
- Press the start button to start calculation
  - Yellow light – measuring preparation, correction of mobile device position
  - 1st gear
  - 2nd gear
  - braking
- Press the stop button to stop calculation
- Press the button to transfer data
- Data were transferred to information system

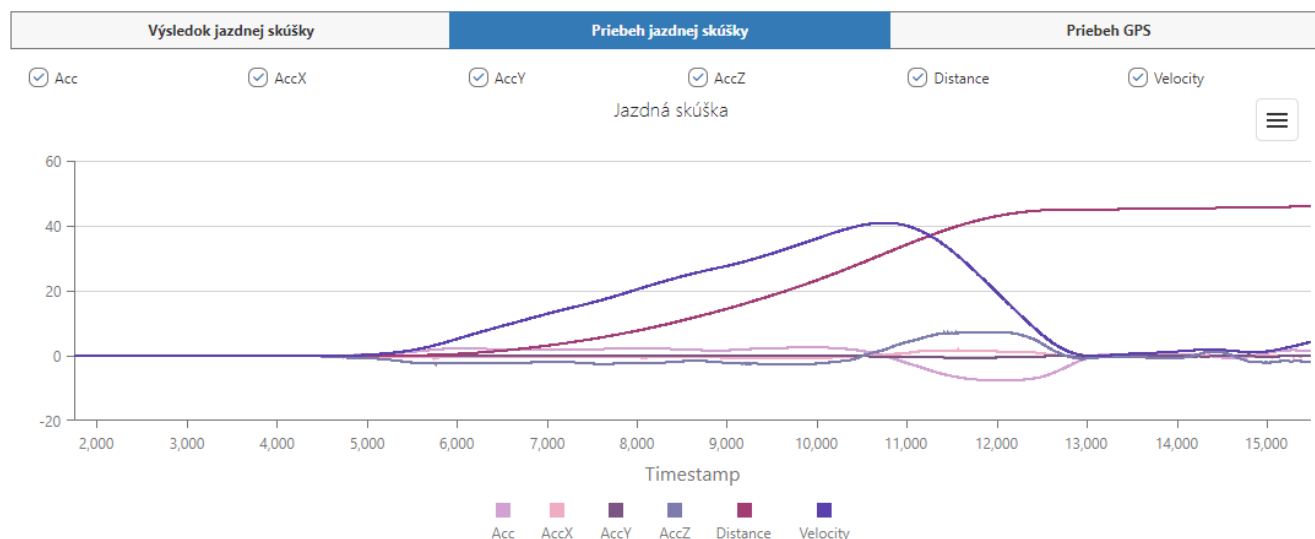


# Mobile application – transferred data

Transferred data from the driving brake test to the information system:

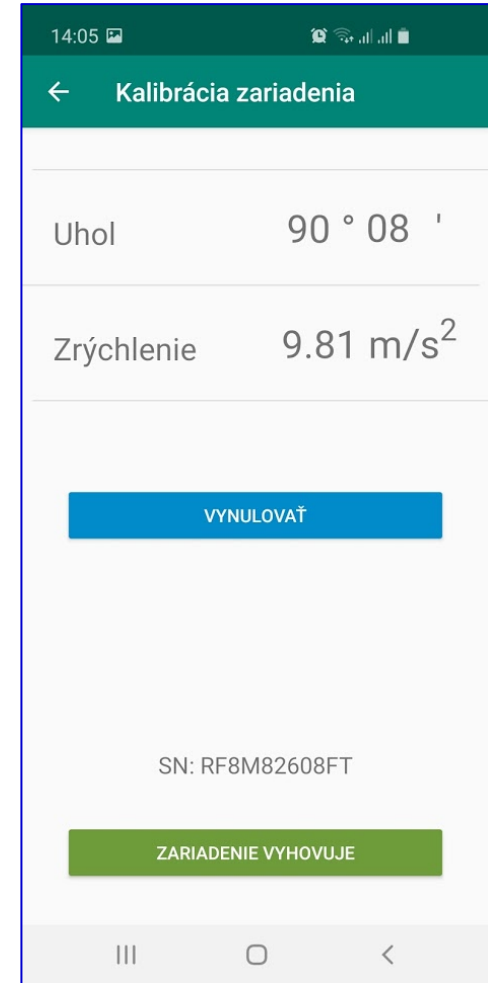
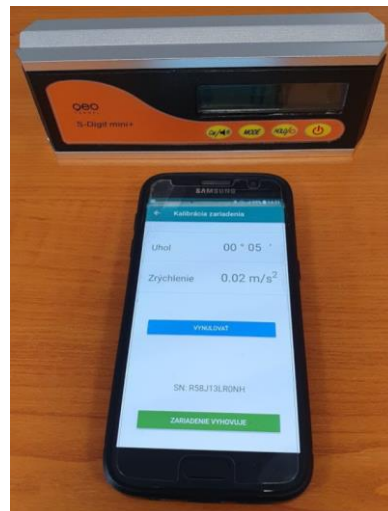
- Mobile device serial number
- The mean fully developed deceleration ( $m/s^2$ )
- The brake efficiency (%)
- Graph of vehicle longitudinal acceleration
- Graph of vehicle velocity
- Graph of travelled distance
- GPS coordinates from driving brake test

Decelerometer - 5WH6R19B13018346



# Mobile application – calibration process

- Calibration is performed by comparison with inclinometer in 6 position from 0° to 90° (in 2 planes to capture all 3 axis)
- Mobile device with successful calibration is paired with the information system by the special QR code generated in information system
- Without successful calibration it is not possible to transfer data to the information system



Thank you for your attention

For more information do not hesitate to contact Juraj Matej  
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