XIX Konferencja „Problemy Rekonstrukcji Wypadków Drogowych”

Bukowina Tatrzańska, 15.-17.10.2025

Wykorzystanie aplikacji mobilnej TESTEK Expert w praktyce biegłego

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TESTEK

TESTEK was founded in 2004 and is acting as

- *Technical Service for Technical Inspections accredited by the Slovak Ministry of Transport – a central organization assisting the Ministry of Transport in periodic vehicle inspection matters*
- *Expert Organisation for Road Vehicles accredited by the Slovak Ministry of Justice – road traffic accidents analysis, assessment of technical state and evaluation of road vehicles*
- *both roles include R&D in vehicle inspections and testing*

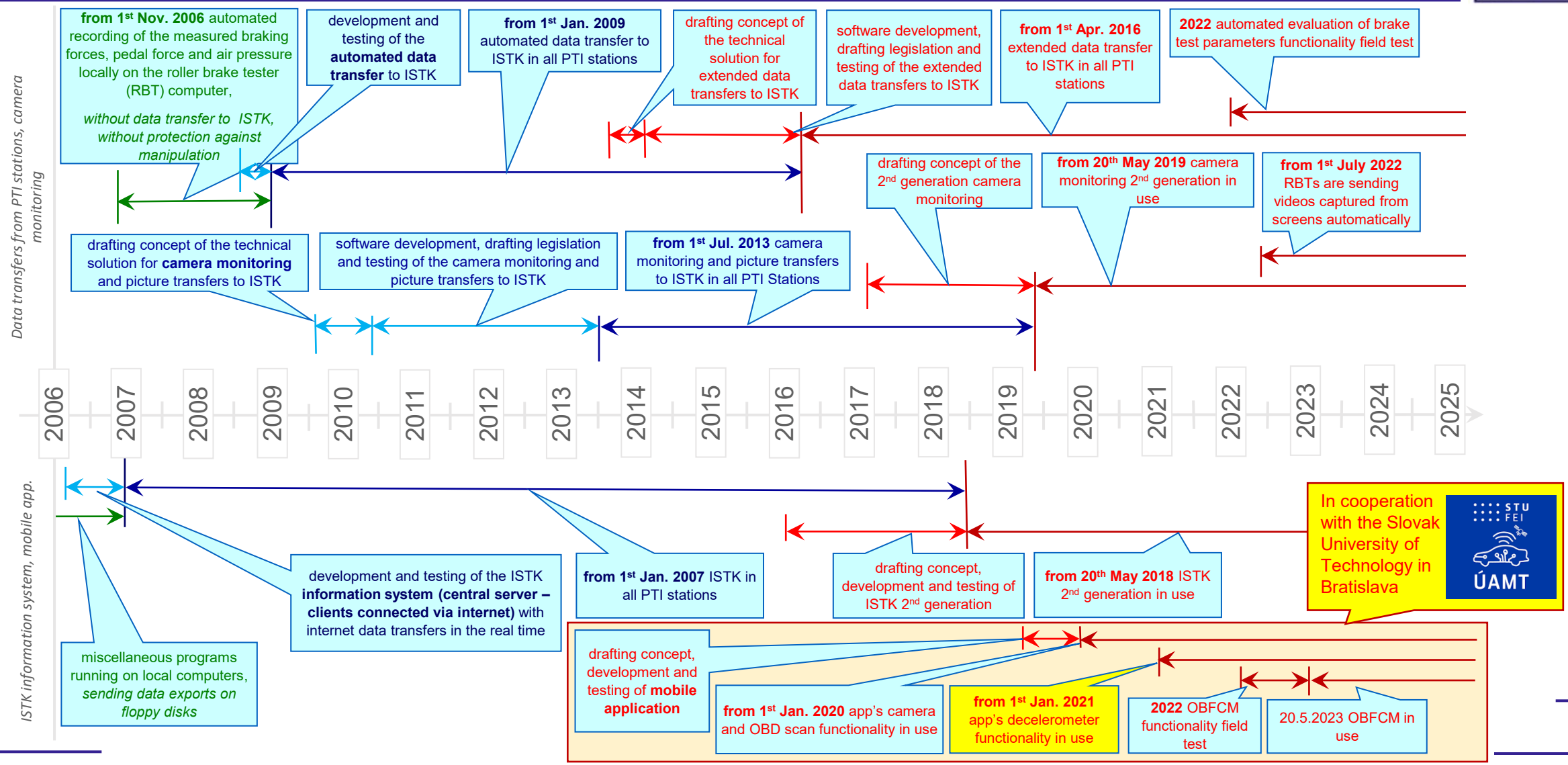
TESTEK is

- *accredited as ISO/IEC 17020:2012 types A and C Inspection Body*
- *ISO 9001:2015 certified (Quality Management System)*
- *ČSN EN ISO/IEC 27001:2014 certified (Information Security Management System)*
- *ISO 37001:2016 certified (Anti-bribery Management System)*

TESTEK is member of international associations

- *International Motor Vehicle Inspection Committee (CITA)*
- *Confederation of Organisations in Road Transport Enforcement (CORTE)*

Developing IT tools for vehicle inspections and testing since 2006



TESTEK Expert mobile app

Originally developed for periodic vehicle inspections, it is approved for this purpose as mSTK in Slovakia, mPTI in Belgium and HU adaptér in the Czech Republic

For periodic vehicle inspections, it includes various functions:

- *OBD scan tool (using ELM 327 Bluetooth adaptor)*
- *Taking photos of odometer, VIN, manufacturer plate or significant defects*
- *Document scanner*
- *On-Board Fuel Consumption Meter (OBFCM) reader (using ELM 327 Bluetooth adaptor)*
- *Decelerometer*
- *Linked with the central vehicle inspection information system on the Internet*

In 2021, TESTEK Expert, a version independent of the vehicle inspection information system, was launched. It is designed mainly for automotive technology experts, traffic accident analysts, and other professionals.

Decelerometer

The decelerometer combines an Android mobile device (phone) with the TESTEK Expert mobile app installed

No minimum hardware requirements are specified; common standard mobile phones are sufficient

The device with the installed app can undergo regular metrological calibration by authorized calibration service providers using a flat surface with an adjustable slope and a standard inclinometer



Measurement data can be uploaded and analyzed using tools on the dedicated webpage https://testekexpert.testek.sk/

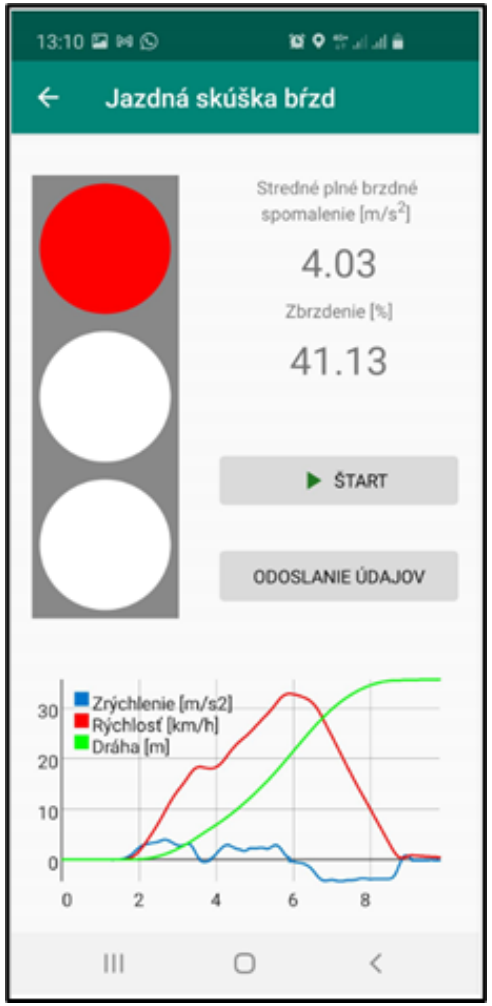
Measurement

The app features a clear, intuitive user interface, enhancing its user-friendliness.

It measures acceleration along the x, y, and z axes using a mobile device's built-in accelerometer (not GPS) to calculate the vehicle's total longitudinal acceleration.

The mobile device should be securely attached to the vehicle, preferably with a phone holder, to maintain a fixed relative position during measurement. It is not necessary to preset specific position or level the device before measuring.

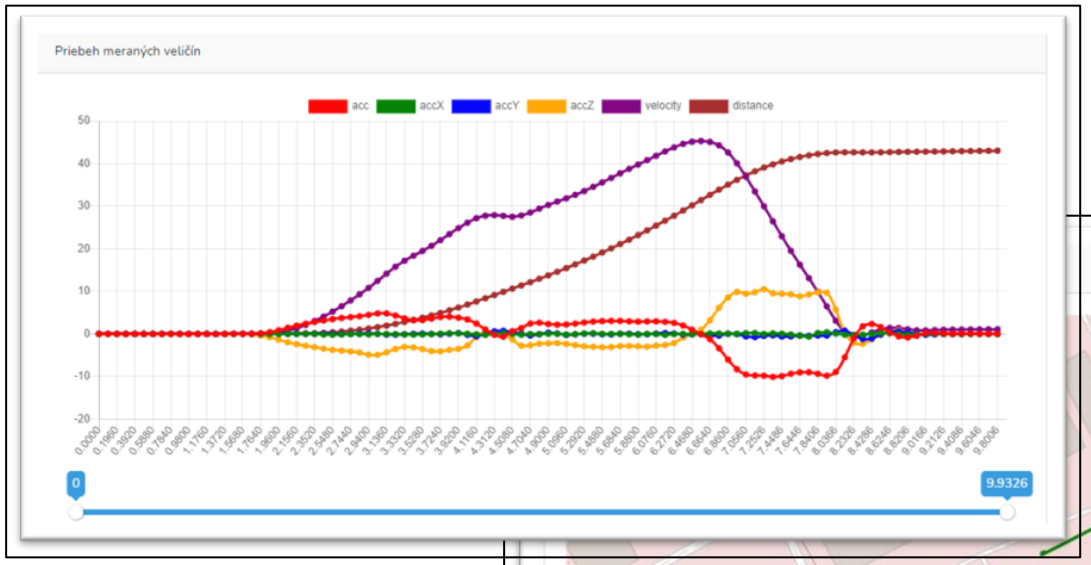
Immediately after the measurement, the app calculates the brake test results — the mean full braking deceleration (MFDD) as defined by UN ECE Regulation No. 13, and the service brake efficiency, known as the braking rate.

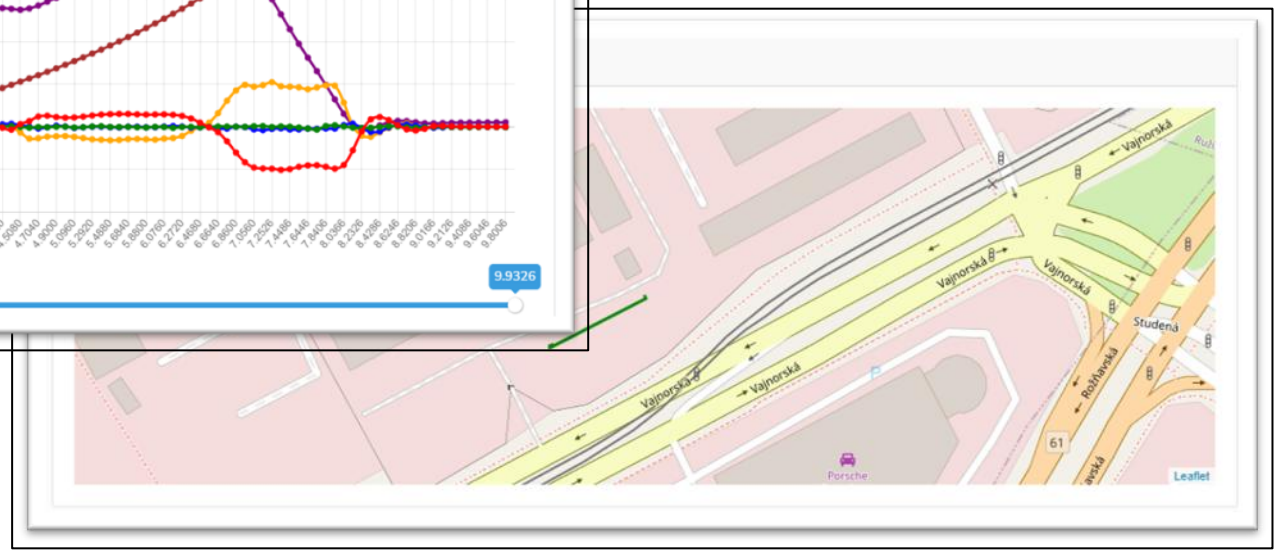


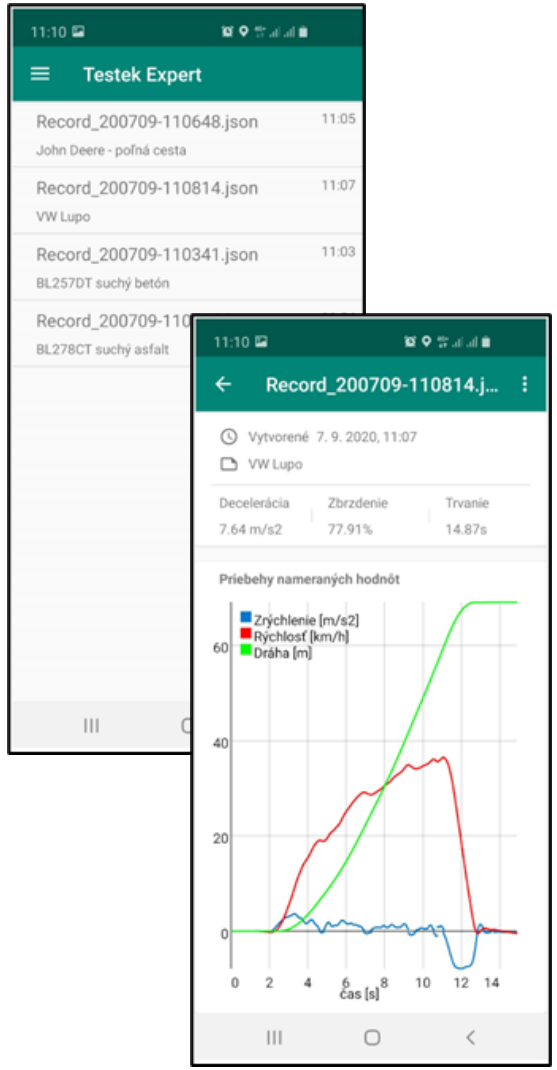
Reporting results

Measurements are stored on the phone and can be viewed directly in the app (at no cost)

For a more detailed and convenient analysis, use the application's website: https://testekexpert.testek.sk



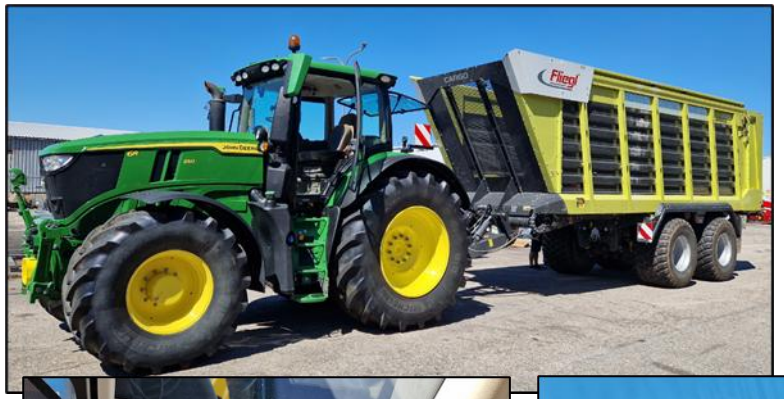




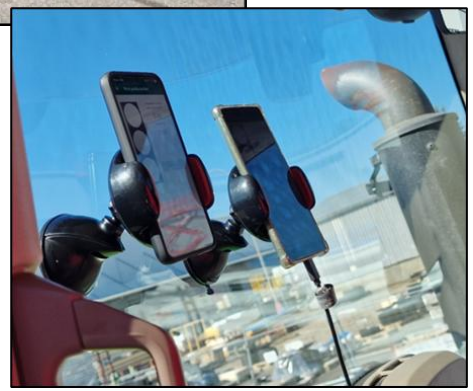
Comparative measurements

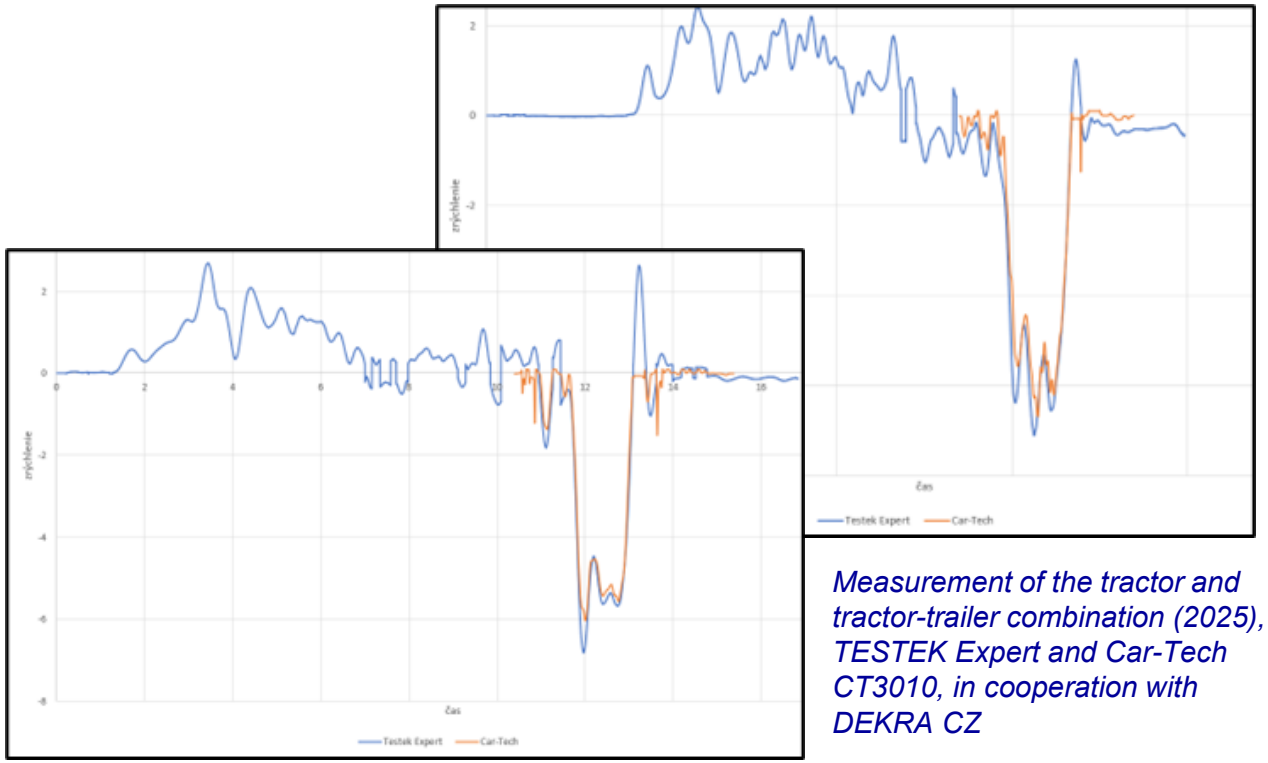
During development, numerous measurements were taken on various vehicles and road surfaces using different mobile devices mounted in various positions relative to the vehicle

The final algorithm was validated through comparative measurements, showing high accuracy against various calibrated decelerometers





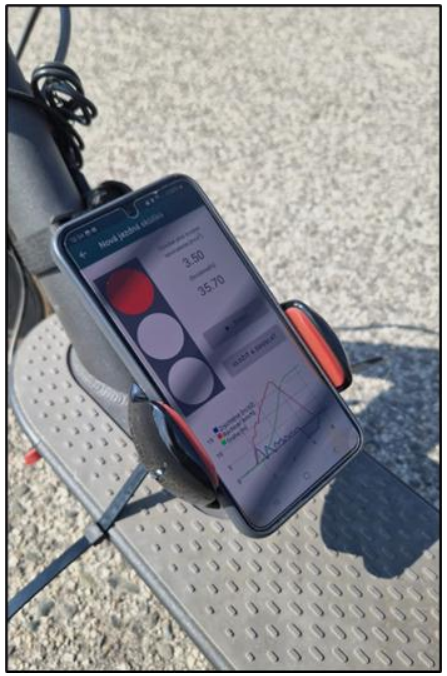




Measurement of the tractor and tractor-trailer combination (2025), TESTEK Expert and Car-Tech CT3010, in cooperation with DEKRA CZ

Micromobile vehicles

The options for verifying the proper function and efficiency of micro mobile vehicle brakes are limited. Using the TESTEK Expert provides an accessible and affordable alternative.

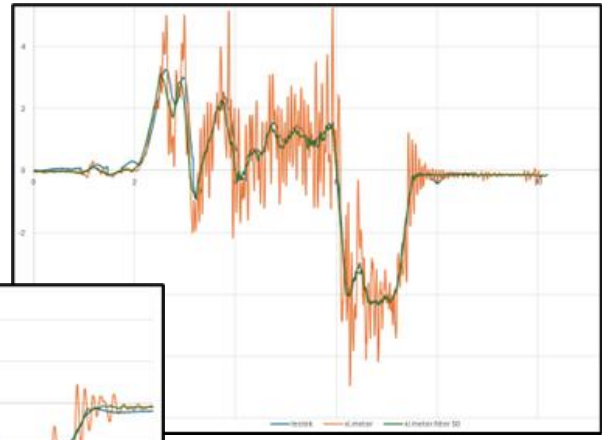


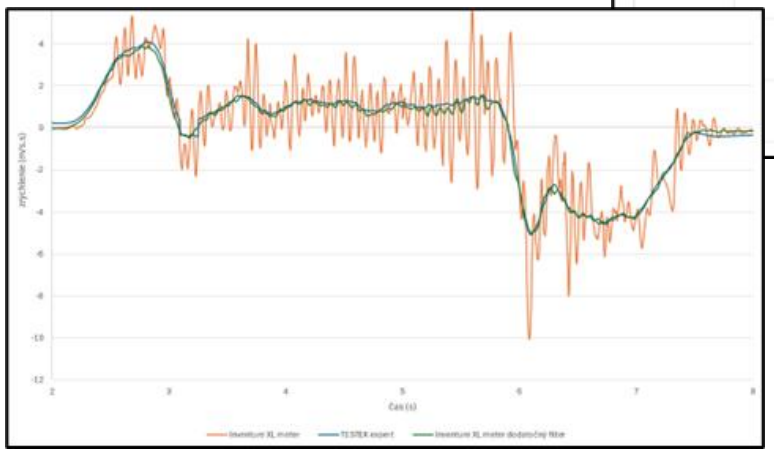


It is recommended to secure the smartphone to the scooter's floor to prevent unwanted tilting during acceleration and riding. Placing it higher or on the handlebars may seem logical but increases the risk of parasitic oscillations and tilts, compromising the accuracy of longitudinal deceleration measurements.



Comparative measurement on the e-scooter (2025), TESTEK Expert and Inventure XL meter





Using the TESTEK Expert mobile application

- Freely downloadable from the Google Play Store – **W języku polskim**
- Measurements without saving and sending to the server are available free of charge



Using the TESTEK Expert mobile application

To save the measurement to the phone and send the measured data to the server, you need to be signed in to a Google account.

For the initial login, you need to follow these steps :

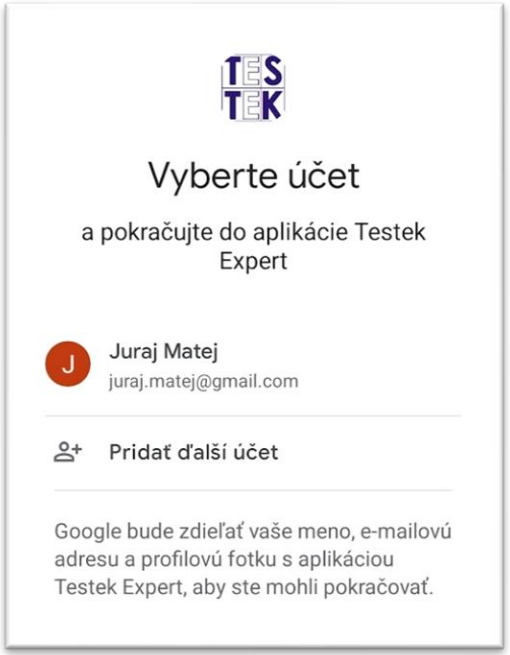
1. Sign in at testekexpert.testek.sk using your Google account credentials (one-time login) – **W języku polskim**

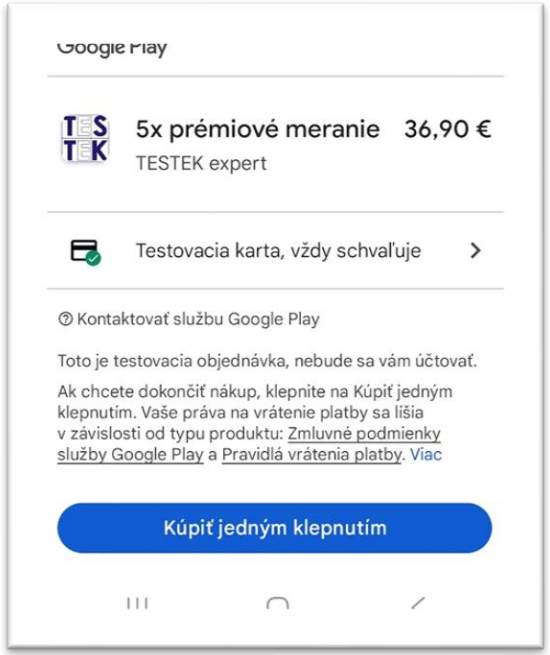
https://testekexpert.testek.sk/

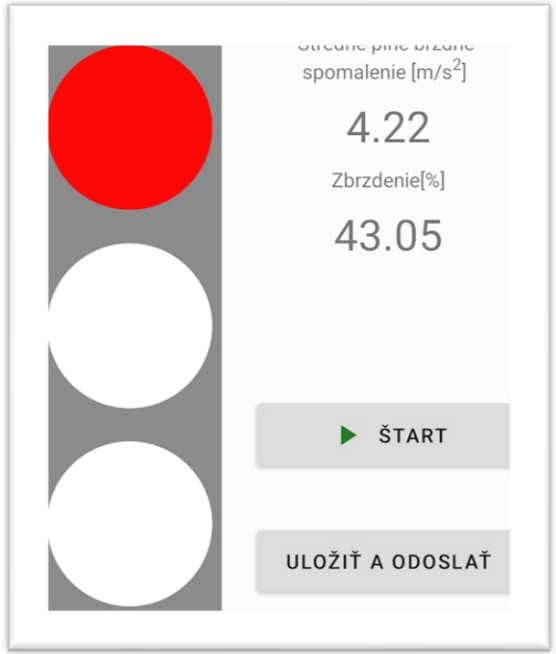


Using the TESTEK Expert mobile application

2. Sign in to the TESTE Expert mobile app using the same Google account
3. In the account and payment section, make a one-time payment for 5 measurements
4. After that, it will be possible to save the performed measurement, send it to the server, and perform a deeper analysis of the measured waveforms

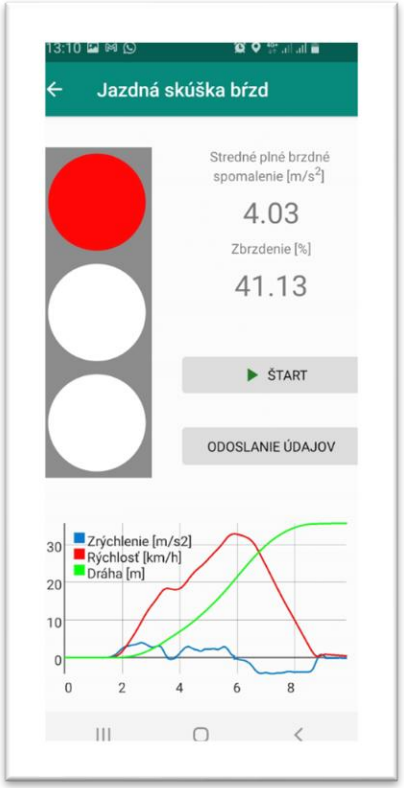


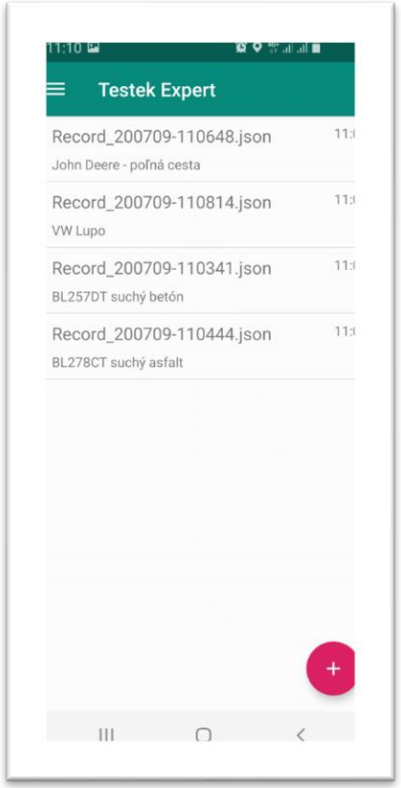


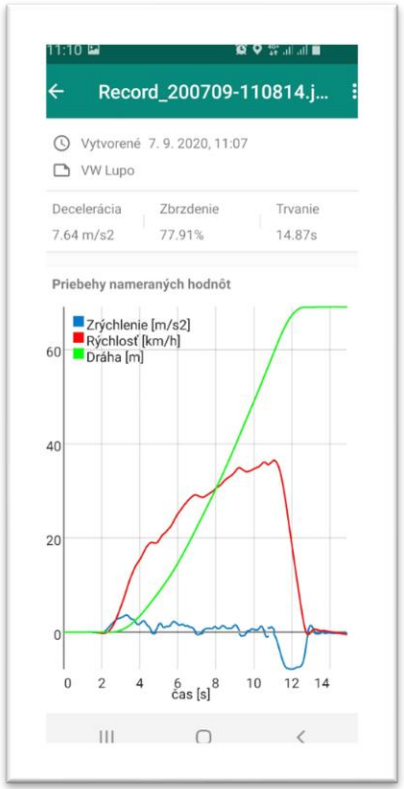


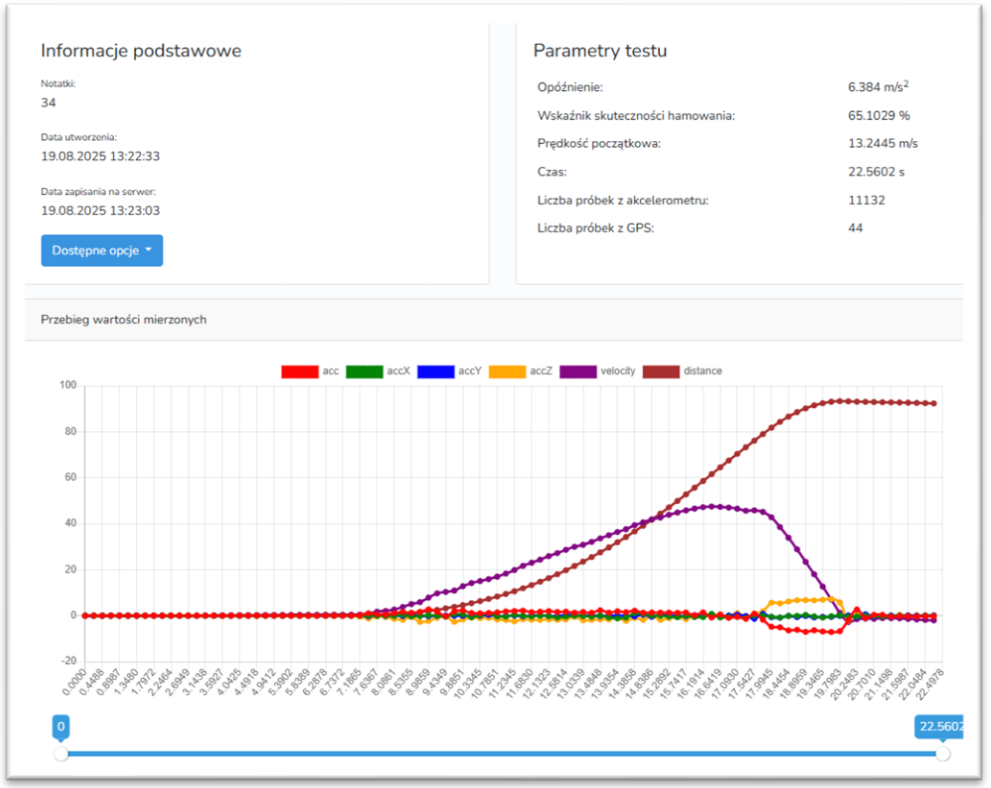
Using the TESTEK Expert mobile application

Each saved and sent measurement is stored not only on the phone but also on the website testekexpert.testek.sk.



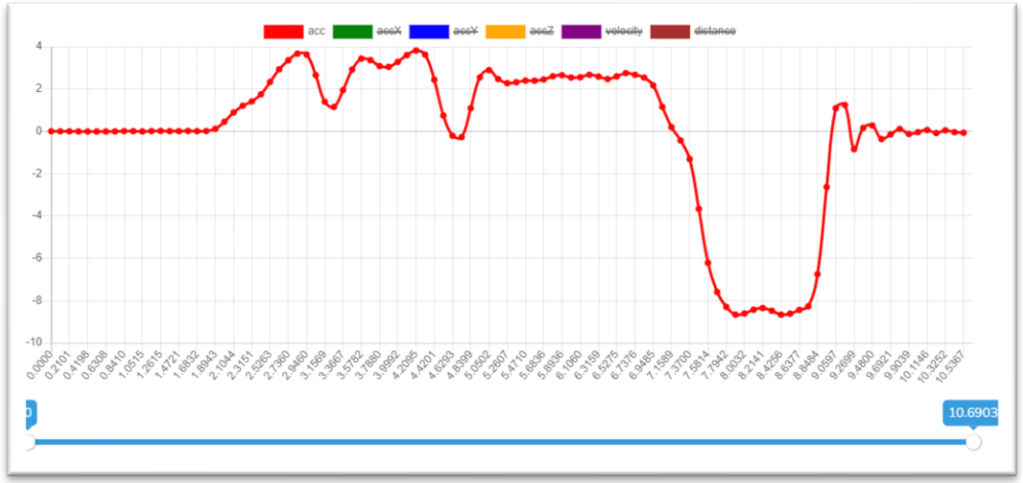


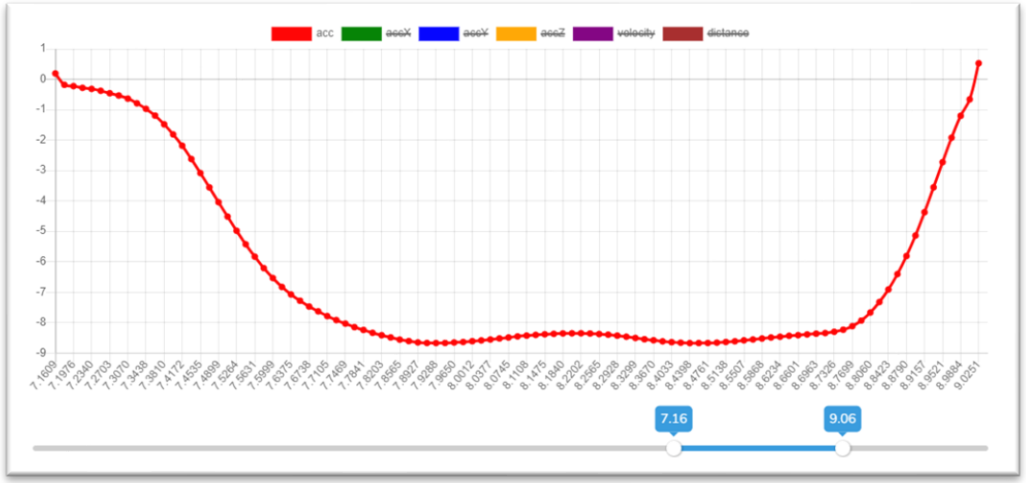


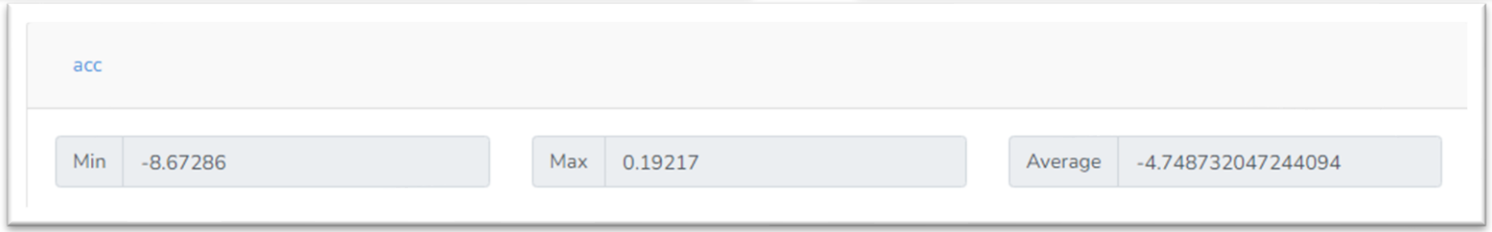


Using the TESTEK Expert mobile application

- The measurement sent to the website can be analyzed in detail, with options to create various selections of chosen waveforms, or perform simple mathematical operations within a selected section, such as identifying maximum and minimum values or calculating the average value.

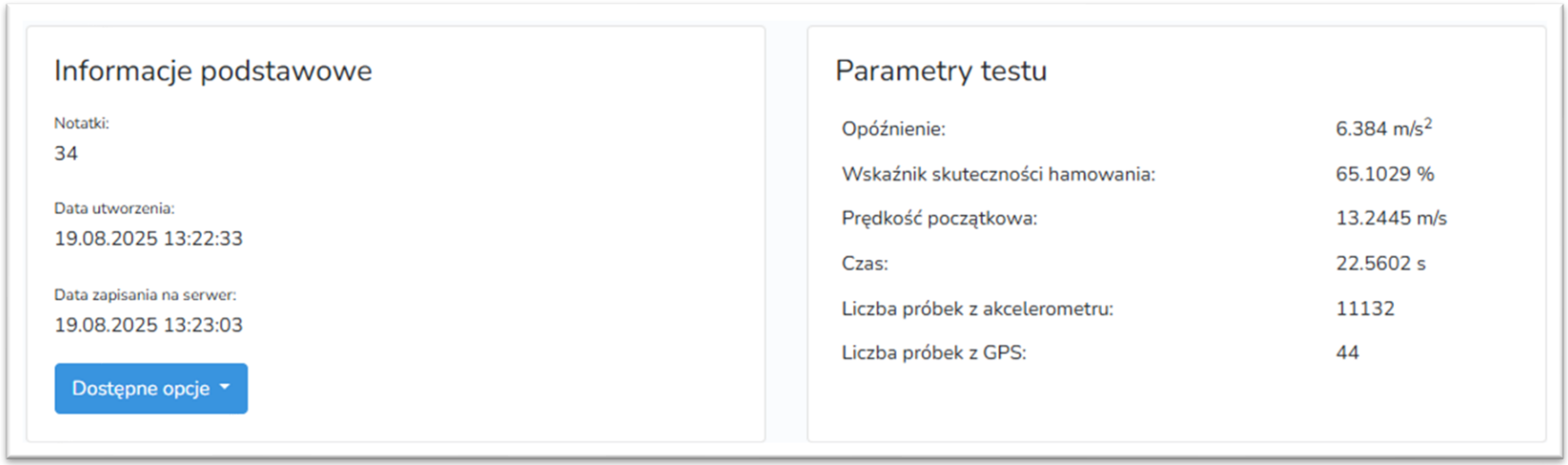


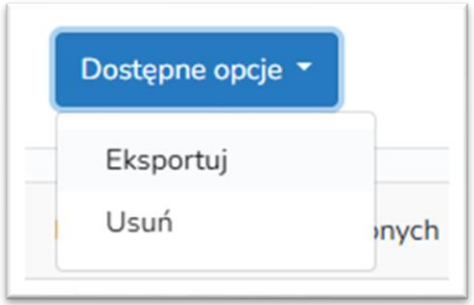




Using the TESTEK Expert mobile application

- The measured data can be exported to a .csv file and opened, for example, in MS Excel, where further custom analyses and modifications can be performed.





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