OBFCM reading as part of vehicle periodic technical inspections (PTI) in the Slovak Republic

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Who we are

Main Vehicle Authority:

MINISTRY OF TRANSPORT OF THE SLOVAK REPUBLIC

Technical Service for Technical Inspections of Vehicles:

- *is assisting the Ministry and providing expert support in the field of vehicle periodic technical inspections (PTI)*
- *to avoid the conflict of interests it is not allowed to directly perform the PTI, nor to be related to the entities performing the PTI*

- *is responsible for:*
  - *research and development of new inspection methods*
  - *verification and inspections of workplaces and equipment*
  - *supervision over workplaces*
  - *education, training and exams of inspectors*
  - *inspection data collection, transmission and analyzing...*

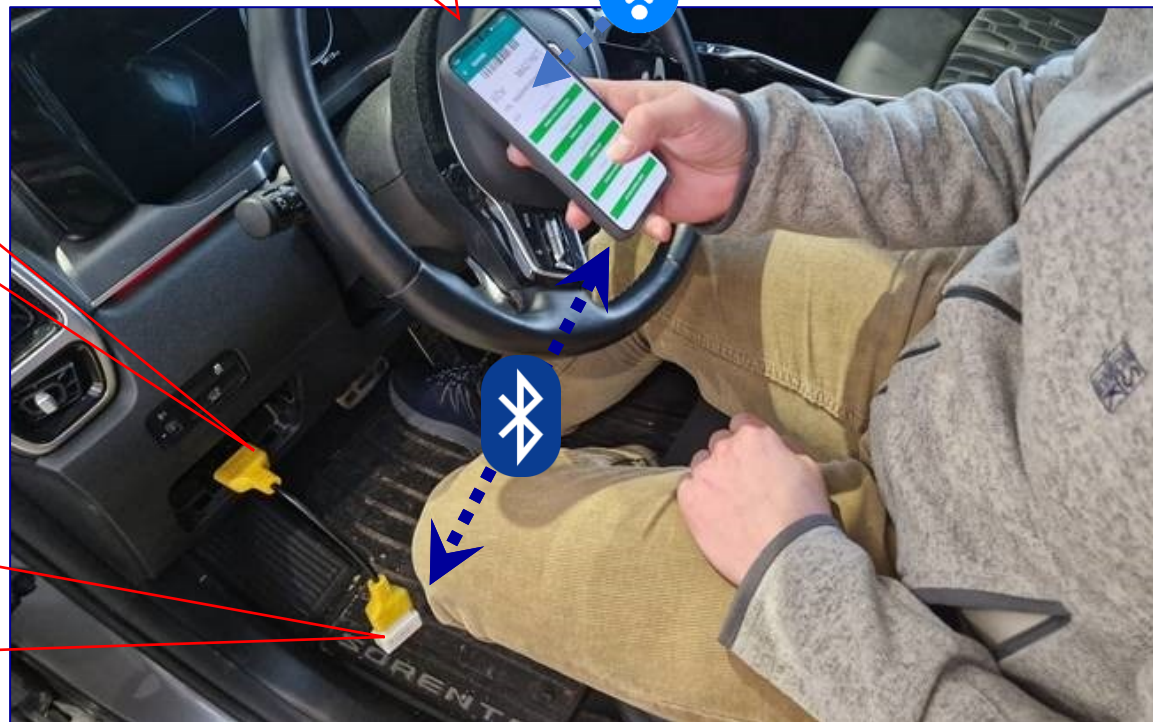# mSTK - a mobile application for PTI developed by TESTEK

mobile device (phone) with mSTK application running

data storage on the Internet

optional OBD extension cable (for easier plugging into the OBD connector)

ELM 327 (Bluetooth OBD adaptor) worth approx. 10 €

ELM 327
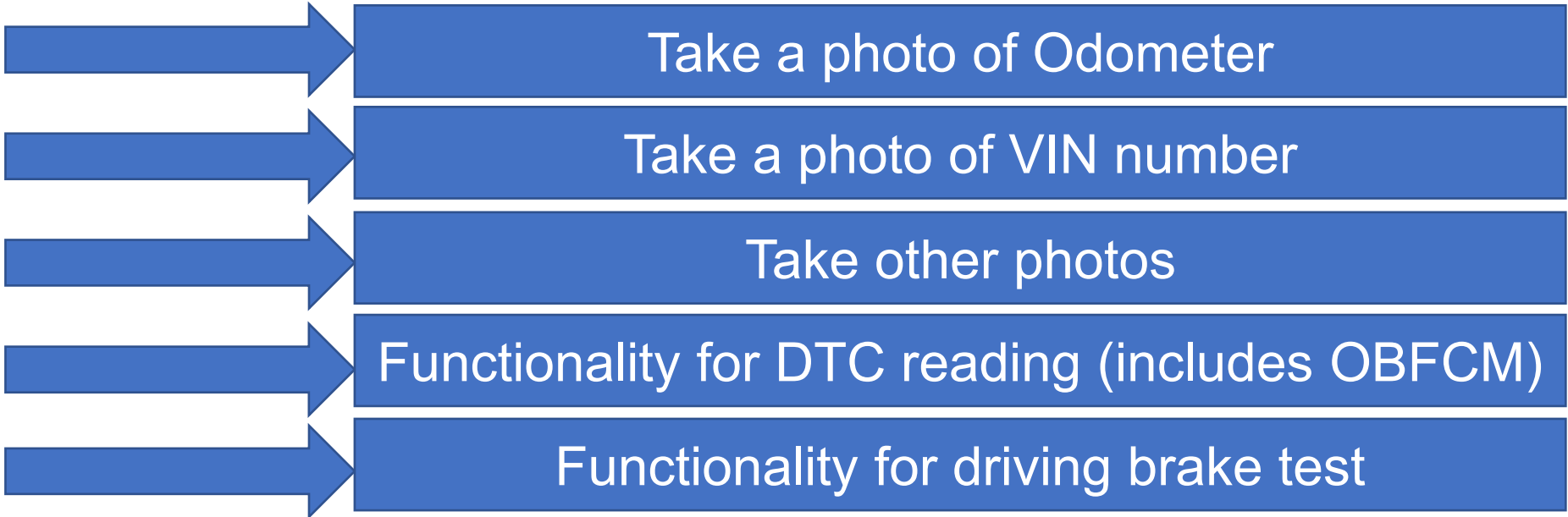Interface
Supports all OBDII protocols

mSTK - a mobile application for PTI developed by TESTEK

- mSTK has been introduced into PTI in Slovakia in January 2020

- mSTK is used for taking photos of VIN number, manufacturer's plate, odometer or other problematic parts of inspected vehicles; photos are being sent to the central information system via internet automatically

- mSTK reads DTCs via ELM 327 (Bluetooth OBD adaptor); data are being sent to the central information system via internet automatically as well

- mSTK also includes the functionality for the driving brake test evaluation and fully replaces decelerometer (for this reason it is possible to calibrate the build-in accelerometer of the mobile device)

- **mSTK's OBFCM reading functionality (using ELM 327) is in field test these days**

Very simple and practical GUI (graphical user interface)

Take a photo of Odometer

Take a photo of VIN number

Take other photos

Functionality for DTC reading (includes OBFCM)

Functionality for driving brake test

OBFCM reading in the Slovak Republic

Functionality for DTC reading – includes OBFCM

VIN and information about transferred DTC

Automatic process without inspector's intervention

Bluetooth ON

Connection to OBD interface

Connection to ECU

Data reading

Data transferred - **includes OBFCM**

What we can read with the OBFCM functionality

Combustion engine vehicle:

- Total fuel consumed (lifetime)
- Total distance travelled (lifetime)

Hybrid vehicle:

- Total fuel consumed (lifetime)
- Total distance travelled (lifetime)
- Total distance travelled in charge depleting operation with engine off (lifetime)
- Total distance travelled in charge depleting operation with engine running (lifetime)
- Total distance travelled in driver-selectable charge increasing operation (lifetime)
- Total fuel consumed in driver-selectable charge increasing operation (lifetime)
- Total fuel consumed in charge depleting operation (lifetime)
- Total grid energy into the battery (lifetime)

It is functioning. In general, the OBFCM data can be read as part of the vehicle inspection.

We have categorized the findings into 4 typical cases (explained on following slides).

We have identified problems which are typical for vehicles made by some manufacturers (similar types of problems occurring on various vehicle types by the same manufacturer).

OBFCM reading in the Slovak Republic

1st case – exact data read from OBFCM

OBFCM electronic message:

Obfcm správa:

{raw:'013 0: 49 17 01 00 00 48 1: 55 00 00 48 90 00 00 2: 2D 5E 00 00 2D E5 00 , NO DATA , NO DATA , NO DATA ', obfcm:'km:1857.6000000000001, litres=117.49000000000001, kmEOff:-1, kmEOn:-1, kmEONDC:-1, litresCD:-1, litresDSCD:-1, kwhGIB:-1'}

Dashboard indication:

1857 km

2nd case – almost exact data read from OBFCM

OBFCM electronic message:

Dashboard indication:

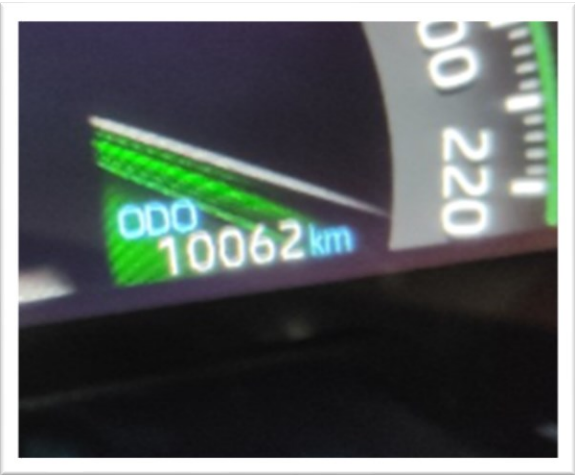Slight difference in odometer reading

3rd case – inaccurate data read from OBFCM

OBFCM electronic message:

Obfcm správa:

{raw:'013 0: 49 17 01 00 00 00 1: 25 00 00 00 39 00 00 2: 00 89 00 00 00 AB 00 , NO DATA , NO DATA , NO DATA ', obfcm:'km:5.7, litres=1.71, kmEOff:-1, kmEOn:-1, kmEONDC:-1, litresCD:-1, litresDSCD:-1, kwhGIB:-1'}

Dashboard indication:

Significant difference in odometer reading

4th case – no data read from OBFCM or incomplete data in hybrid vehicles

OBFCM electronic message:

Obfcm správa:

{raw:'013 0: 49 17 01 FF FF FF 1: FF 00 01 3A FD FF FF 2: FF FF 00 00 BB D4 AA , NO DATA , NO DATA , NO DATA ', obfcm:'km:0.0, litres=0.0, kmEOff:-1, kmEOn:-1, kmEONDC:-1, litresCD:-1, litresDSCD:-1, kwhGIB:-1'}

Obfcm správa:

{raw:'013 0: 49 17 01 00 00 44 , NO DATA , NO DATA , NO DATA ', obfcm:'km:-1, litres=-1, kmEOff:-1, kmEOn:-1, kmEONDC:-1, litresCD:-1, litresDSCD:-1, kwhGIB:-1'}

Obfcm správa:

{raw:'013 0: 49 17 01 00 00 64 1: 96 00 02 B4 B2 00 00 2: 1C 3D 00 00 F1 9E 00 , 01B 0: 49 1A 01 00 00 3A 1: F2 00 01 7B 10 00 00 2: 00 82 00 00 10 FE 00 3: 00 02 44 00 00 36 F6 , 013 0: 49 1B 01 00 00 02 1: B2 00 00 3D 74 00 00 2: 07 F3 00 00 C1 85 , 01B 0: 49 1C 01 00 00 0C 1: 25 00 00 5A 31 00 00 2: 00 00 00 00 00 00 00 3: 00 0C 2A 00 00 5A 38 ', obfcm:'km:17733.0, litres=618.54, kmEOff:9704.0, kmEOn:435.0, kmEONDC:1407.0, litresCD:-1, litresDSCD:-1, kwhGIB:2309.6'}

No or irrelevant data in electronic OBFCM message

Thank you for attention

For further questions, don't hesitate to contact us:

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