

Adapting driver behaviour for lower emissions



MODALES is working to reduce air pollution from all types of road vehicles by encouraging the adoption of low-emission driving behaviour and appropriate maintenance.

The project focuses on emissions from the following three sources:



Powertrain exhaust



Break



Tyre/roac

**MODALES** is a three-year project building a user-centric approach addressing the challenges of emissions from different sources in road vehicles. MODALES is researching, developing and testing a number of innovative and complementary solutions in four key areas:

- Driving behaviour
- EOBD European On-Board Diagnostics
- Retrofits
- Periodic vehicle roadworthiness inspections

in order to substantially reduce vehicle emissions from three main sources: powertrain, brake wear and tyre/road wear.

### Main elements



# **EOBD - European On-Board Diagnostics**

More robust & durable emission control systems and enhanced OBD functionality as an anti-tampering measure



#### **Driver**

Identification of low-emission driving style, driver training, a driver support app and guidelines for regular maintenance



# Periodic inspections

Analysis of inspection procedures and anti-tampering legislation in different countries, best practice and legal recommendations



Analysis of effectiveness of diesel-saving retrofit technologies and particulate filter servicing



## Exhaust emissions

CO<sub>2</sub>, CO, HC, NO<sub>4</sub>, PM, PN



Brake and tyre/road wear

Fine and ultrafine particles (PM. PN)

#### Key technical tasks

- Defining low-emission factors
- Impact of user behaviour
- Effectiveness of inspections and depollution systems
- Guidelines and tool for low-emission training (including the development of a mobile app)
- User trials and evaluation, featuring private and professional drivers of different vehicle types at sites across Europe and in China

MODALES European\* trial sites for low-emission training and evaluation



\* As an International Cooperation project, MODALES will also conduct user trials in China.

### **Partners**

Coordinator:

































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The project responds to Horizon 2020 call MG-1-1-2018: Reduction of transport impact on air quality (INCO Flagship), Topic A: "Low-emission oriented driving, management and assistance, exploring the impact of the user on emission production".

The project runs from 1 September 2019 to 31 August 2022.







