

# L-vehicle tampering in-field surveys

Åke Sjödin, IVL Swedish Environmental Research Institute  
Hervé Denayer, KU Leuven & Flanders Make@KU Leuven



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L-vehicles Emissions and Noise mitigation Solutions

# LENS introduction

# LENS -

## L-VEHICLES EMISSIONS AND NOISE MITIGATION SOLUTIONS

- 5 M€ EU RI project
- 15 partners:
  - Research institutes
  - Universities
  - OEMs
- Sep 2022 – this fall



# L-vehicle Noise & Air Pollution Challenges



- LVs mostly do not require regular inspection
- LV type approval emission tests are done only in laboratory environments
- Cities lack L-vehicle-specific mitigation policies
- LV noise pollution in urban & rural environments is significant

# LENS objectives

- Develop beyond state-of-art LV pollutant emission and noise measurement techniques (onboard, on-road, roadside)
- Characterise noise and pollutant emission performance of LVs
- Carry out in-field identification of tampered LVs in three cities
- Provide recommendations and expected impact of decreasing noise and pollutants from LVs

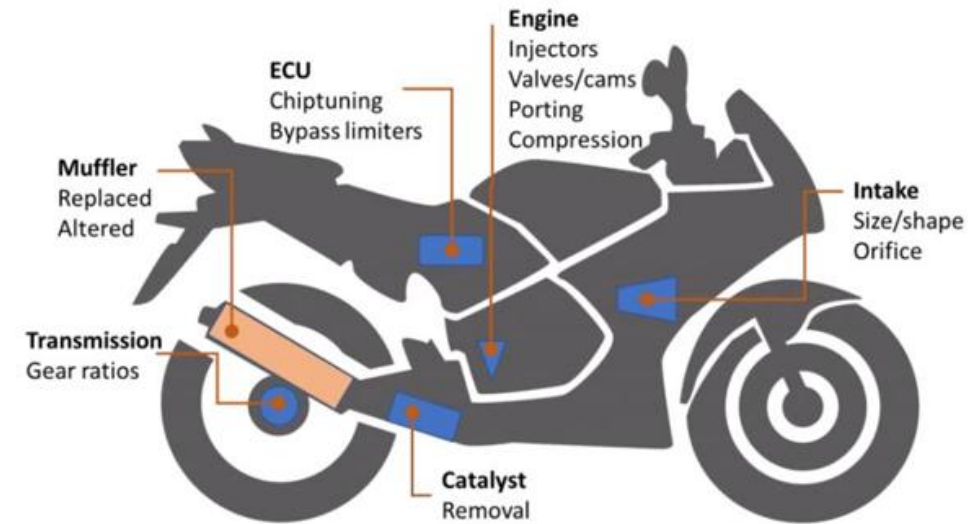
# L-category vehicles (LVs)

Category	LV sub-category
L1e	L1eB - Two-wheel moped
L2e	3-wheel moped
L3e & L4e	L3e-A1 Low-performance
	L3e-A2 Medium-performance
	L3e-A3 High-performance
	L3e-AxE Enduro

Category	LV sub-category
L5e Tricycle	 
L6e	L6e-A Light on-road quad
L6e-B	L6e-B Light quad-mobility
L7e	L7e-B1 All terrain quad
	L7e-B2 Side By Side Buggy

# Explanation of L-Category Vehicles

- Tampering occurs on L-Category vehicles
  - Survey for tampering evaluation
    - +600 samples
    - +20 EU Countries
  - Assessment of undesirable effects to be conducted:
    - Noise emissions
    - Pollutants emissions
    - Fuel consumption
  - Most common tampering methods
    - Exhaust
    - Air intake
    - ECU



Source: [LENS D5.1 LVs tampering and undesirable effects, 2023 \(LENS\)](#)