

Tampering detection in-field surveys

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LONS L-vehicles Emissions and
Noise mitigation Solutions

Execution of tampering in-field surveys

- **Primary aim:** Identify LVs with nonconform noise and/or exhaust emissions ("high-emitters") through roadside measurements combined with roadside inspections
- **Goals:**
 - 1) Measure noise and pollutant emissions from $\geq 3,000$ of LVs from the roadside in three cities
 - 2) Define criteria to identify tampered LVs, supported by onboard (WP3) and test-bench (WP4) data
 - 3) Notify cooperating authorized staff pull over and on-site inspections of ≥ 300 suspected tampered LVs
 - 4) Direct dissemination to LENS city and stakeholder group at dedicated events during each pilot (WP2)
 - 5) Develop approach for real-time identification of high-emitters
 - 6) Post-process measured data after establishing link to vehicle data through license plate numbers, calculate emission factors and make available for LENS database (WP6)

Execution of tampering in-field surveys

- **Measurement site selection criteria:**
 - Single lane
 - Slight to moderate uphill slope (sufficient load on vehicle engine → sufficiently large exhaust plumes)
 - Significant share/number of LVs
 - Not too congested
 - Avoid cold starts
 - Suitable site 100 m – 1 km downstream to pull over vehicles to the roadside for inspections

Execution of tampering in-field surveys

- Field survey locations:
 1. Flanders → Leuven
 2. Paris region
 3. Rome → Florence → Milan → Barcelona (not able to find police support in Italy)

Roadside instrument setup

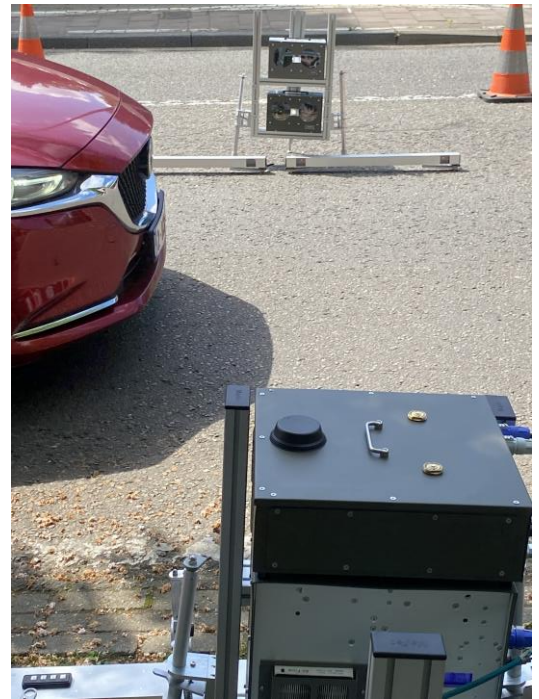
Noise measurements
- KU Leuven



Particle emission measurements
- TU Graz



Gaseous emission measurements – Opus RSE



Roadside instrument setup



Roadside inspections



- Check of driver documents (certificates)



- Driver interview
- Visual inspection

- CO and HC idle test



Leuven measurement sites

13-14 May



15-17 May





Paris survey

- 16 – 22 September
- Two sites selected (city & rural)
- LENS LV expert available for inspections
- Investigating police support
- Opportunity to use a tampered LV (IFPEN's):



3rd survey – Barcelona (pending)

- Timing: End of September/early October 2024

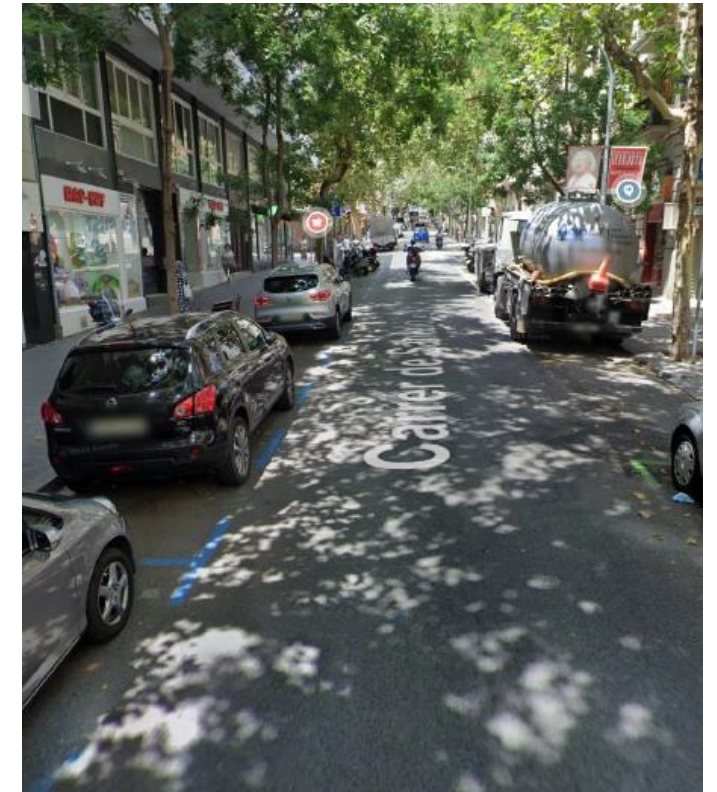
Via Augusta



Carrer d'Olzinelles



Carrer de Santalo



Thank you for your attention!

Questions?

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