DfT Acoustic Camera Research
TFSL-04
• Exhaust and non-exhaust emissions

• Noise and audible warning

• Battery state of health
Background

Average no. noise complaints (2018 – 2021YTD)
Introduction

- Two phase research project commissioned in 2018, conducted by Atkins Jacobs Joint Venture.
  - Phase one - Desktop review of existing technologies and practices.
  - Phase two - Roadside trials of technologies identified in phase one.
Phase One - Outcomes

- Excessive vehicle noise is a significant issue, and is not limited to rural areas.

- In the UK, roadside enforcement is complicated and time consuming.

- Softer enforcement measures including awareness and signage have been shown to be ineffective.
Phase Two - Setup

- Integrated ANPR and video camera
- Class 1 sound level meter
- Speed radar
- Weather station
Phase Two – Site Selection

- Two sites, both semi-rural environment.
- 50 mph (80 km/h) speed limit.
- Popular for car and motorcycle enthusiasts.
Phase Two – Site Location

Site 1

Site 2
Phase 2 – Data Collection

Criteria for further analysis:
- 10 second period where only one vehicle has passed.
- Recorded maximum sound level exceeded 75 dB(A).
- Matched with DVLA data.
Phase 2 - Results

International Vehicle Standards, Department for Transport
Phase 2 - Comparisons

Volkswagen Polo (999cc, petrol)

Sound level, dB

1/3 Octave band centre frequency

Vehicle 1 (85.6 dB LAFmax)
Vehicle 2 (81.5 dB LAFmax)
Vehicle 3 (79.3 dB LAFmax)
Vehicle 4 (75.9 dB LAFmax)
Vehicle 5 (74.9 dB LAFmax)
Vehicle 6 (71.5 dB LAFmax)
Vehicle 7 (66.6 dB LAFmax)
Conclusions

- In certain circumstances, the prototype was able to assign measured pass-by noise levels with registration data.

- Ability of prototype to assign noise levels in complex traffic scenarios is limited.

- Dedicated software would reduce post processing time and make results easier to interpret.

Next Steps

- Investigate merits of using one or more blanket noise thresholds.

- Test a range of the latest noise cameras and develop an installation and user guide.

- Run further roadside trials in collaboration with the police and local authorities.
Thank you for listening