



Understanding, predicting and controlling IC-engine exhaust noise

VTT Technical Research Centre of Finland Ltd



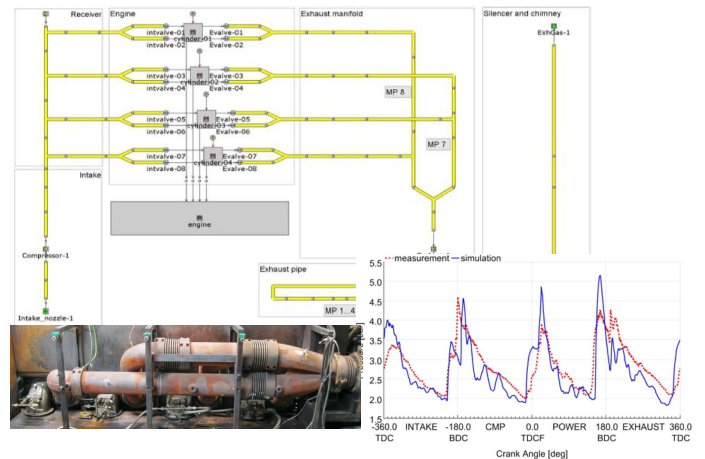
Typical targets

- Electric generator based power plants
- Cruise ships and ferries
- Mechanical applications e.g. compressors and pumps
- Vehicles and power machines



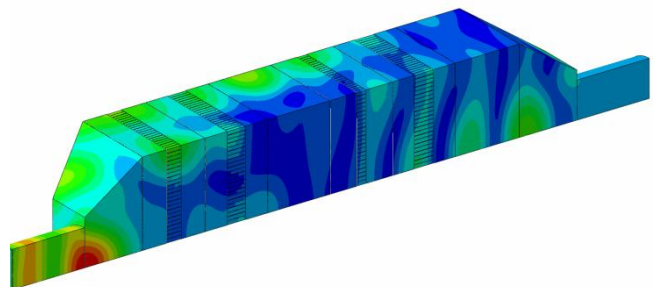
Noise predictions and auralization using

- Engine performance and acoustic source simulations
- Acoustic 3D modelling



Development of novel simulation and measurement methods for

- Acoustic source characterization
- Noise reduction of transmission path components
- Target specific distributed systems



Analysis of transmission path elements

- After treatment devices such as
 - Selective catalytic reducers
 - Particle oxidation catalysts
- Resonators
 - Quarter wave resonators
 - Helmholtz resonators
- Tailored silencers

Outcome

Design of complete exhaust line for optimal noise reduction

Contacts

Juha Virtanen, Research Team Leader
Structural dynamics and vibroacoustics
email: juha.virtanen@vtt.fi

Antti Hynninen, Senior Scientist
Structural dynamics and vibroacoustics
email: antti.hynninen@vtt.fi