

# AVL EXCITE™ Acoustics - Top Use Cases

NVH Analysis Software by AVL List GmbH

# Investigation of Engine and Power Unit Noise

## Challenge

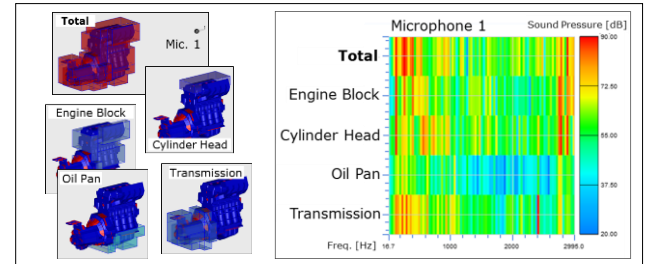
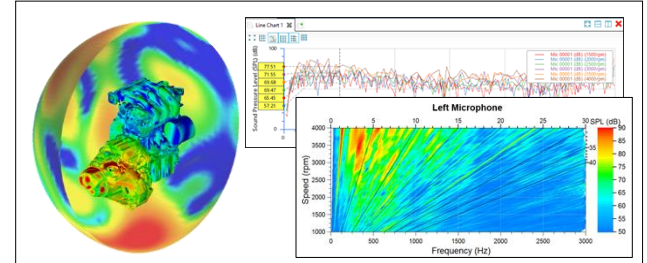
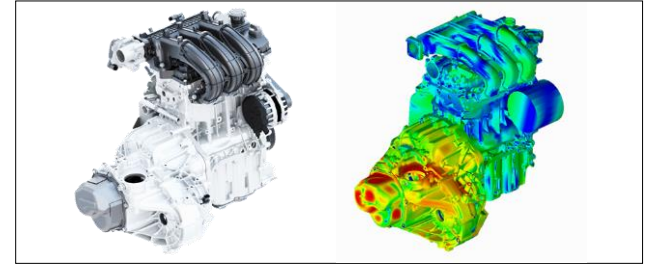
- Today's combustion engine development trends like downsizing, downspeeding, increase of torque, lead to higher excitations. This requires to find an optimal compromise between weight reduction, efficiency and NVH performance.

## Solution

- Easy-to-integrate sound radiation calculation as final step to complete the acoustic analysis workflow
- Short processing times by a fully automated acoustic mesh generation and an efficient solver technique

## Benefits

- Assessment of engine/power unit acoustic performance during design analysis (cost-saving compared to measurements)
- Evaluation of the contribution of noise excitation sources and areas of the vibrating structure to sound pressure levels
- Easy valuation of the effectiveness of design modifications



# Assessment of Transmission Noise

## Challenge

- Higher excitations due to today's trends in engine development lead to more dominant transmission noise caused by gear whine and rattle excitations. Calculation and evaluation of structural response only (e.g. gearbox housing) is not reliable.

## Solution

- Easy-to-integrate sound radiation calculation as final step to complete the acoustic analysis workflow
- Short processing times by a fully automated acoustic mesh generation and an efficient solver technique

## Benefits

- Reliable evaluation of characteristic and markedness of transmission noise phenomena
- Verification of the effectiveness of design measure to reduce transmission noise

