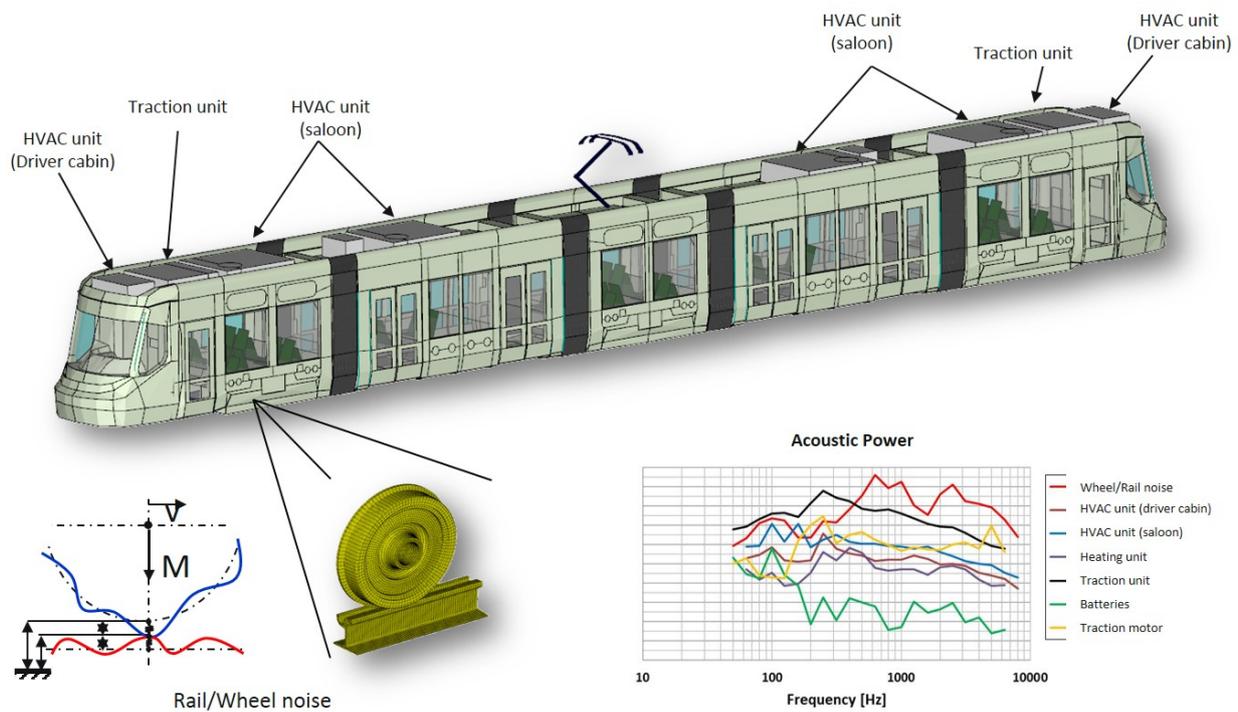


Estimation of vibration and noise levels on/inside of the structure with simulation in the digital prototype phase of the design. Definition of main flanking paths (how is noise propagating into the structure) Nomination of design changes for noise level

Ref-Nr:



Technology abstract

- Czech rep.
- Engineering software company
- Technical consulting based on simulation
- Noise management optimization
- Avoiding costly trial/error approach on physical prototype
- Technical consulting or technology transfer with SW usage

- Private group -

The vibroacoustics technology and its use was presented by the company to ESA TTPO team in Jan 2016. Potential application domains were broadly studied and discussed. Now, we prepare a success story covering its application in metro trains industry.

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[Read more about this broker](#)

Technology Description

Aerospace - Design for interior noise in commercial, executive and military aircraft, Define random vibration, acoustics and shock environments and set acceptance and qualification levels for launch vehicles and payloads, Analyze the response of primary structure, payload and critical flight equipment due to acoustic, random vibration and shock environments

Naval - full system level models of shipboard noise and vibration in ships, submarines and luxury yachts

Rail - Diagnose transmission paths and optimizing interior sound package, Analyze wheel-rail interaction

Automotive - Design for interior sound quality in automobiles, trucks, buses and land vehicles

Innovations & Advantages

Definition of critical parts of the design without costly and time consuming trial/error based experiments on physical prototype.

For some cases physical testing is not possible (marine, space)

Quick and effective sensitivity studies ("what/if" analyses).

Usage of productivity modules like periodic for creating large structures with section repetitions (rail, marine...)

Further Information

Rerun of complete vibro-acoustics model with changed sound package parameters within several minutes.

Sound package optimizing of metro rail vehicle to reduce interior Sound Pressure level by 10dB

Current and Potential Domains of Application

Vibro-Acoustic Sciences will extended its proprietary Statistical Energy Analysis (SEA) code to estimate the statistics of phase for single input - single output transfer functions between launch vehicle fairing and payload acoustic volume.

