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Title: Virtual powertrain integration using TPA and Virtual powertrain integration using TPA and NVH Simulator

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Abstract:

Prediction and evaluation of vehicle interior sound on an NVH simulator in an early development stage will reduce development time and costs by reducing the need for physical prototypes. By combination of data from engine test bench with vehicle transfer functions it is possible to predict the vehicle interior sound before the engine has been integrated to the vehicle. Developers, decision-makers and customers can go on virtual test drives in an NVH Simulator:

Driving a virtual car and listen to powertrain noise, road noise and wind noise. In combination with the Transfer Path Analysis approach, it is possible to listen to sound shares (structure-borne vs. airborne), discuss powertrain integration, develop acoustic targets due to realistic auralization in early stages of development.