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Title:

Investigation of Communication Effort in Acoustic Zones in the Electric Vehicle

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Abstract:

Successful design of vehicle interior acoustics requires considering the acoustic quality of all noise components involved at all passenger positions in the vehicle. Furthermore, it also requires considering the communication effort between passengers in the vehicle, the communication with voice assistants and the telecommunication to exterior receivers. This addresses NVH tasks like Road Noise Cancellation (RNC), Active Sound Design (ASD), respectively Electric Vehicle Sound Enhancement (EVSE) as well as speech communication testing, e.g. the optimization and verification of listening effort for passengers and the robustness of voice recognition. Especially in electric vehicles, the properties of introduced synthetic sounds (ASD, EVSE) need to be addressed more comprehensively to avoid unwanted side effects on communication effort.

This presentation shows a case study on a high-performance electric vehicle equipped with an EVSE system. It addresses the design of the synthetic sound as well as its impact on communication effort in the vehicle cabin. The interaction between these topics gets more important and a more comprehensive view is necessary, especially, if acoustic zones (or sound bubbles) in the vehicle interior begin to reach the market.

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