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Title:

Overall End-to-End Conversational Speech Quality Prediction in an In-Vehicle Hands-free Scenario

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Abstract:

An existing model for the prediction of the overall end-to-end conversational speech quality in telecommunication scenarios is extended to include the use case of a hands-free terminal (HFT) in a vehicle on one side and a cordless phone in an office room on the other side. For this purpose, a conversational test with untrained test subjects voting on the perceived overall conversational quality was conducted. The test conditions included impairments, intentionally introduced to the end-to-end connection. Additionally, the test subjects scored the most important individual quality dimensions of the conversation, i.e. listening quality, echo disturbance, perceived interactivity of conversation, double talk capability and listening effort. The auditory results for this new use case shed light on the influence of the acoustic masking effects caused by driving noise and cognitive load on scoring of these individual quality aspects, relevant in a conversation.

The prediction model is adapted to the new use case, correlation results are presented, discussed and compared to the scenario where two test subjects converse using cordless phones on both sides.

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