

Automatically assess the perceived listening effort of received speech signals with “ABLE”

New option for the measuring and analysis software ACQUA

Headphones, mobile phones, in-vehicle hands-free terminals and in-car communication systems have one thing in common: Environmental noise impairs the intelligibility of received speech signals to the listener. In order to evaluate the influence of background noise on speech signals automatically and reproducibly, HEAD acoustics has developed “ABLE” (Assessment of Binaural Listening Effort), a method to predict perceived listening effort. It is now available as option for the measurement and analysis software ACQUA.

Assessment process of “ABLE” according to ETSI standard TS 103 558

The prediction model of “ABLE” analyzes and assesses the perceived effort required to follow a conversation. ACQUA presents the results comprehensively and comparably according to a five-point Mean Opinion Score (MOS) scale: a high score of five means that low effort is required to understand the speech and vice versa. In a test setup, the HEAD acoustics background noise simulation systems 3PASS *lab* or 3PASS *flex* simulate the environmental noise. Speech and noise are binaurally recorded with an artificial head in a realistic way. This signal is used as an input for the prediction model.

The analysis and the assessment process of the new ACQUA option “ABLE” follows the ETSI standard TS 103 558. “With ABLE, we provide manufacturers of ANC headphones, mobile phones, hands-free terminals, and in-car communication systems an efficient tool for benchmarking their devices”, says Dr. Hans W. Gierlich, Managing Director Telecom at HEAD acoustics GmbH.

About HEAD acoustics

HEAD acoustics GmbH is one of the world's leading companies for integrated acoustic solutions as well as sound and vibration analysis. In the telecom sector, the company enjoys global recognition due to the expertise and pioneering role in the development of hardware and software for the measurement, analysis and optimization of voice and audio quality as well as customer-specific solutions and services. HEAD acoustics' range of services covers sound engineering for technical products, investigation of environmental noise, speech quality engineering as well as consulting, training and support. The medium-sized company from Herzogenrath near Aachen has subsidiaries in China, France, Italy, Japan, South Korea, the UK and the USA as well as numerous sales partners worldwide.

Images



ABLE, the new option for the analysis software ACQUA, evaluates the influence of background noise on speech signals automatically and reproducibly.