FRIEDRICH-ALEXANDER
UNIVERSITÄT
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TECHNISCHE FAKULTÄT

Elektrotechnik-Elektronik-Informationstechnik

# EEI KOLLOQUIUM

## Speech coding: evolution and latest advancements

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Tennenlohe, Am Wolfsmantel 33, Raum 0C1.05

**Diskussionsleitung: Prof. Dr.-Ing. Bernd Eder**

Speech coding, the effective representation of speech in digital form, is one of the key technologies of digital voice communication. It has become a very mature branch of signal processing, with the main applications in mobile telephony and Voice over IP (VoIP). The reduced network bandwidth in wireless communication has forced the transition of speech coding techniques from simple waveform coding schemes to sophisticated algorithms built upon speech production and perceptual models. In this presentation we want to give a comprehensive overview of the evolution of speech coding techniques and their standardization. In addition, advances in coding efficiency will be illustrated through coding tools such as vector quantization, source-controlled coding, bandwidth extension, post-processing and joint source-channel coding.

Finally, we will provide an overview of the structure and performance of the latest speech coding standard, the 3GPP Enhanced Voice Services (EVS), which offers significantly improved voice quality, network capacity and advanced features for voice communication over next-generation wireless networks.