



ACOUSTIC SIGNAL ANALYSIS AND PROCESSING GROUP (ASAP)

Main objectives and activities of the laboratory

- basic and applied research in digital signal processing,
- development and design of mathematical models and algorithms,
- performance of commercial contracts and development of applications relating to the processing of digital signals,
- providing expert consultation and expert activity in the field of acoustic signal processing.

Professional focus of the laboratory

- modern mathematical methods for multidimensional signal processing,
- measurement and processing of audio signals obtained from microphone arrays,
- blind separation of signals and system identification,
- noise reduction and signal enhancement,
- detection and classification of acoustic events,
- analysis of speech signals – speech-to-noise ratio, speech activity detection.

Specific equipment and development tools

- Matlab programming environment,
- MS Visual Studio,
- multi-channel sound cards EDIROL FA-101, M-AUDIO 2626, ECHO Audiofire4,
- sets of microphones with various characteristics (cardioid, hypercardioid, omnidirectional, dynamic, condenser),
- EKG BTL-08 MT.

Offered technologies and expertise

- methods for the independent component analysis for multidimensional signal analysis,
- beamforming methods for processing signals from microphone systems,
- designs, training and testing of deep neural networks,
- optimization of algorithms for real-time signal processing,
- implementation of classification methods.

