

Creation on based Wavelet-transform of information measurement system for voicedata estimation and protection.

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Results

One of the most informative human speech-creating organ for speech recognition problem is voice source that effects basic tone frequency of speech signal. According to researches, human hearing system uses basic tone frequency for speech recognition with high reliability, but it is sensitive to low-frequency noises – so appeared idea to use spectral characteristics of speech signal segments, where extremums of correlation function can be found, as additional features. However, the extremum of correlation function of basic tone frequency presence is transient, so using of Fourier-transform to analyze the spectral characteristics of speech signals is inappropriate, because Fourier-basis is not sufficiently scaled in time-domain. Using of Wavelet-transform removes this disadvantage, as that transform allows decomposition of signal by wavelets of two arguments – scale and time. Method of Wavelet-transform underlies analysis of that model because of non-stationary researched signals. Wavelets application to speech process and recognition is dictated by acoustic speech signal features. Wavelet-transform – means of multiply-scale analysis that allows highlighting the main characteristics of signal and transient components of acoustic speech signal at the same time. This feature is advantage as compared to window Fourier-transform where varying the width of window selection of signal components is needed to highlight this components.

The result of research is creation of preconditions for the development of new competitive domestic information-measuring systems (IMS) based on Wavelet-transforms. Such IMS can be widely applied to systems of technical protection of information. Creation of methods of calculating the parameters of primary process of speech signal, which allow to minimize hardware and computing resources of audit, monitoring and certification of adaptive protection using accepted confidence intervals for identification of speech signal.