

## **VOICE PROTECTION MODULE**

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The development of digitalization is inextricably linked to the protection of information which is one of the most important assets of any organization. In this regard one of the problems of information security is the leakage of information through the acoustic channel. Protection of speech information is an important sphere in the ensuring information security and is implemented by using passive and active means of information protection. Active means for speech information protection involve the use of white, pink and speech-like noise generators to create masking noise. It has been proven that the noise in its spectral composition should be close to the speech signal for effective masking. To generate a speech-like signal it is proposed to apply the compilation method of speech synthesis which consists in compiling the minimum acoustic units – allophones. At the same time the building of a database of allophones for the Russian language is carried out on the basis of articulatory syllabic and word tables corresponding to GOST 16600-72. The developed speech information protection module [1] performs the following functions: formation of a phonemic pseudo text, compilation of a speech-like signal and its reproduction. In turn the implementation of a phonemic pseudo text is carried out in accordance with the rules and algorithm proposed in [2] based on the features of the language in which a confidential conversation is conducted. The features of the Russian, Arabic, Kazakh and Turkmen languages were studied in order to achieve the greatest similarity of the generated speech-like speech signal in the corresponding language. As a result, a speech-like noise is formed at the output of the module which then enters the input of the acoustic system.

### **Literature**

1. Shakin K.P., Zelmansky O.B. Development of the System for Synthesizing a Speech-Like Signal // Abstracts of the XIX Belarusian and Russian scientific and Technical Conference “Technical means of information protection”, Minsk, June 8, 2021. P. 99.
2. Lobanov B.M. Synthesis of Speech by Text. Collection of Scientific Papers of the 4th International School-Seminar on Artificial Intelligence. Minsk: BSUIR, 2000.