The Second International Conference "Problems of Cybernetics and Informatics" September 10-12, 2008, Baku, Azerbaijan. Section #1 "Information and Communication Technologies" www.pci2008.science.az/1/43.pdf

CREATION OF MATHEMATICAL MODELS FOR RESEARCH OF THE SPEECH INTERFACE

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Keywords: speech technologies, the speech interface, interactive self-service systems, quality of recognition, management of dialogue, dialogue strategy

Development is considered for the mathematical models used to design Russian-speaking interactive voice controlled self-service systems.

Interactive self-service systems for today are required for the advancement of modern information and service systems. The tendency consists that in all of them speech technologies in this connection creation of the speech interface simple, effective and convenient for clients. It must fully consider the limitations of the person communicating with the automatic device is required are more widely used. Design of the speech interface requires careful research. Research about the abilities of people to communicate with the automatic device. Development of corresponding mathematical models of dialog sequences. And the development of strategy, techniques and recommendations on the speech man-machine interface.

The developed models can be used to design interactive systems for speech interfaces.

Then the structure of the speech interface and its feature is considered. The basic purpose of the dialogs (with the service system) are established, its components are defined, sequences of the verbal communications are established. A quantitative criteria for defining the quality of this or that strategy, duration of communication and probability of success is used.

Investigating the probability of recognition of these "internal" – nominal characteristics depends on both the quality of the researcher and the features of the concrete script.

To objectively compare among various varied scripts a set of principals are developed which allows establishing maximum and minimum probable duration of dialogs. These principals are used to optimize dialog durations for the maximum user satisfaction.