REFLEX SYSTEM OF DEVICE VOICE CONTROL

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Implementation area:

Anybranch that requires device voice control. First of all, it is useful for terminals, vending machines, multifunction devices, TV sets and others.

Implementation:

1. *The system enables control of different devices by the human voice.*
2. *The system provides reliable multispeakerspeech recognition of varied commands.*
3. *The reflex voice control technology is implemented on simple machines, requires no Internet. Moreover, it is adapted for specific acoustic conditions.*

Brief description:

The reflex system consists of the following components:
1. Phonemic stenographer. It converts input digitized audio signal containing the spoken language into the set of phonemes or words.
2. System core. It analyses the input set of phonemes (words) and calculates probabilities of the reactions on this set. Then it chooses the reaction and realizes the reaction on the device.
3. Speech recognition databases. It stores speech recognition information base and provides control action. The database contains the statistics of input actions and system reactions.
The peculiarity of the system is the absence of linguistic analysis of the text. It produces reflections to a combination of input sounds. Moreover, the rules of reflexes formation are based on the latest scientific results obtained in the theory of non-violent interaction and reflect natural process of reflex formation. The system does not need any dictionaries, it does not require lexical or grammatical analysis, there is no need to create models of intellectual text analysis. So there is a number of advantages: simplicity, variability of command pronunciation (system understands such command as "mute" and "mute off the sound, please"), processing commands to the device in real time, working in conditions of uncontrolled acoustic environment (in terms of noise), simple algorithms reactions, tolerance to errors made by a speaker, the ability to identify the voice of the speaker. It is easier and cheaper to develop the reflex system, than those systems, which already exist on the market. Moreover, the system can learn any language.
There are designed the system prototypes that respond to voice (voice control systems of TV, telephone, terminal). The probability of a correct response ranges from 96% to 98% in controlled acoustic environment.