Your new questions about coding

Question 20. **How much iterations of decoding are required MTD for achievement close to optimum decisions?**

Answer. The number of iterations required full realization of adjusting abilities of a code, depends on affinity of the signal to noise ratio at which there is a job of the multithreshold decoder, to the channel capacity. In result it appears, that the closer to the channel capacity it is necessary to work, the greater number of decoding iterations is required to be executed. For example, if at job approximately in 1 - 1,5 dB from the channel capacity it is necessary to execute about 20 - 40 iterations of decoding at the signal to noise ratio in the channel, the greater capacity on 3 - 4 dB, they may require only 5 iterations.

Question 21. **What is a delay of MTD decoding?**

Answer. The delay of decoding depends on a kind of a used code. In case of application a block code the delay will coincide with length of the code block. Thus during reception of the code block the previous code block has time to be decoded. If it is used a convolutional code the delay is determined as product of code length on number of decoding iterations.

Question 22. **Whether application MTD in concatenated codes, for example, with decoder Viterbi is possible?**

Answer. Remarkable feature MTD is that at correctly chosen codes (with the minimal effect of error propagation) errors of decoding appear single. It allows to use MTD in simple concatenated codes. For example, use together with MTD in the external cascade of codes with the control of parity or Hamming codes allows practically without complication of coding and decoding on some orders to reduce bit error rate in comparison with base MTD. Results of researches of such concatenated circuits are submitted in the publications submitted on our web-site www.mtdbest.iki.rssi.ru .

The specific structure of the codes used in MTD, allows it to receive close to optimum results even in channels with grouped errors. This property allows to use MTD in the external cascades together with Viterbi decoder, errors on which output, as it is known, are grouped. Efficiency of such concatenated code appears to be essentially better than it is for the concatenated code consisting of Read - Solomon codes and a convolutional code, decoding with the help of Viterbi algorithm.