Abstract

Optimization process needs a case study, including simulation to observe real time results. With the evolution of coding techniques like turbo, LDPC (Low Density Parity Check Code, Convolutional LDPC, RS (Reed Solomon) codes, etc., to choose a specific technique & its specific configuration to optimize the system performance is a critical task. Moreover FPGA implementation of these coders makes the design flexible and software defined. Heading towards the Cognitive Technology, wherein Bandwidth (BW) allocation is dynamic one has to configure the entire transceiver system to work over the available BW. Present paper is a summary of the Ph. D. work carried out to optimize the BER (Bit error rate) performance of codec in the cognitive environment. In particular Application Specific Codec design is put forth for Mobile & WiMax, followed by improvement in the BER performance at higher BW. Few sample Results at every stage of simulation are also depicted.

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**Index Terms**

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**Key words**

Turbo  LDPC  RS

FPGA
BER

Performance optimization

Cognitive