

Performance Evaluation of Wideband Code Division Multiplication Network

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Abstract : The aim of this study is to evaluate and analyze different parameters of WCDMA (wideband code division multiplication). Moreover, this study also incorporates brief yet throughout analysis of WCDMA's components as well as its internal architecture. This study also examines different power controls. These power controls may include open loop power control, closed or inner group loop power control and outer loop power control. Different handover techniques or methods of WCDMA are also illustrated in this study. These handovers may include hard handover, inter system handover and soft and softer handover. Different duplexing techniques are also described in the paper. This study has also presented an idea about different parameters of WCDMA that leads the system towards QoS issues. This may help the operator in designing and developing adequate network configuration. In addition to this, the study has also investigated various parameters including Bit Energy per Noise Spectral Density (Eb/No), Noise rise, and Bit Error Rate (BER). After simulating these parameters, using MATLAB environment, it was investigated that, for a given Eb/No value the system capacity increase by increasing the reuse factor. Besides that, it was also analyzed that, noise rise is decreasing for lower data rates and for lower interference levels. Finally, it was examined that, BER increase by using one type of modulation technique than using other type of modulation technique.

Keywords : duplexing, handover, loop power control, WCDMA

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