

ABSTRACT

Growth of communications wireless requiring more wide requirement bandwidth. Phenomenon of multipath fading represents one of characteristic in communications wireless systems. OFDM (Orthogonal Frequency Division Multiplexing) as technique multicarrier able to give efficiency bandwidth where between the subcarrier each other overlapping without generating effect ICI (Inter Carrier Interference). For support this system used by MIMO (Multiple Input Multiple Output) systems that have been developed in the early year 1990-an by using some of transmitter and receiver antenna to solution the problem of multipath fading. OFDM break high speed data become low speed data, so that effect of frequency selective experienced of signal will be felt to become flat fading by each subcarrier in MIMO channel.

Assignment will research MIMO-OFDM system with diversity STBC 2x2 with compared to MIMO-OFDM STBC 2x1. This system will be analyzed by making computer simulation of it, using Matlab 7.1 software and using rayleigh fading and have noise AWGN channel modeling. Research also will compare speed of user in both systems at rayleigh channel.

From the simulation results, it has concluded that STBC MIMO-OFDM with diversity technique can improve system's performance. In AWGN channel, for MIMO-OFDM STBC 2x2 the maximum of diversity gain can get 3,8 dB if compared with MISO-OFDM STBC 2x1. while in rayleigh fading channel, maximum of diversity gain can get 4 dB. More high doppler shift of channel, performance systems more poor.