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Judul : Cooperative Communication system based on MC-CDMA on mobile to mobile channel
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ABSTRACT

Wireless are media communication that most used today. Main disturbance in wireless is fading effect. The way to reduce fading effect in Multi Carrier-Code Division Multiple Access (MC-CDMA) system are using Multiple Input Multiple Output (MIMO) technique. But MIMO technique has a limit in array’s antenna implementation. To hurdle this limitation, there is spatial diversity technique to used in. The channel is mobile-to-mobile channel where user are always in move (mobile). That movement causing a doppler effect. This effect could influence MC-CDMA system. Another factor that influence MC-CDMA works is Inter Carrier Interference (ICI).

In this final project, the works of cooperative communication system based on MC-CDMA in mobile-to-mobile channel, will be studied. The configuration of this system are one Source (S), one Relay (R), and one Destination (D) that always in mobile. The cooperative relay protocol is Amplify-and-Forward (AF). Doppler effect shift and ICI will be simulated. As the result, the parameter like BER that was collected will be analysed.

From the simulation result, there will be knewed that cooperative communication system based on MC-CDMA in Rayleigh fading channel works is better than cooperative communication system based on MC-CDMA in mobile-to-mobile Double Rayleigh fading channel. Rayleigh fading channel works up to $10^{-3}$ when SNR value is 19dB. Whereas for the double rayleigh fading channel reach to $10^{-7}$ when SNR value is 23 dB.

Keyword : cooperative communication MC-CDMA, mobile-to-mobile channel modelling, diversity, doppler shift
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