

## **ABSTRACT**

Space Time Block Code (STBC) is part of spatial diversity on the MIMO (Multi Input Multi output) antenna system. The making use of Space Time codes can raise its performance and can make the spatial diversity applied. The copy of signal will be transmitted in the different time and from other antenna. Transmission delay that happened is called delay diversity. Combining between spatial and temporary of the signal is the Space Time Code's execution. For the next step, that signals will be multiplexed on the data series. Then, the replication signals are added to create the Alamouti Space Time Block Codes.

This minithesis research about the performance and the capacity of multi-user CDMA user of Space Time Block Code on the Rayleigh Fading Channel condition by using multiple antenna transmitter. The simulation and analytic approach show that STBC CDMA can increase the cellular network performance. The performance of this system also will be compared the ordinary CDMA system. In the other side, it also show that STBC and multiple antenna transmitter for multi-user CDMA can produce gain performance without extra process and bandwidth needed.