

## ABSTRACT

The era of multiple broadband access can accommodate a high level of *user* mobility. This fact leads to multi-*user* diversity, both in time domain and frequency domain. To overcome this it use Channel Dependent Scheduling (CDS) system is a *user* on subcarrier scheduling based on channel conditions. Therefore, it takes Channel State Information (CSI) as the input CDS system. In fact the CSI is imperfect because the Node B should send transmission parameters information to the *user*; this is the cause feedback delay. Delay in feedback transmission parameters information cannot be avoided and cause a decline in system performance, especially on the channel that changed very quickly.

This final project has been studied on the CDS in handling multi-*user* diversity with performance parameters of the maximum data rate and fairness. In addition, the study also investigates the CDS with imperfect input due to feedback delay, and average of decrease in performance compared to perfect imperfect CSI. The focus on SC-FDMA uplink system is the transmitter power is limited because the device comes from the *user*.

From the simulation results can be seen that the CDS is very reliable to handle *user* diversity, with more and more marked with the number of *users* then the greater the maximum data rate, but decrease the value fairness. While the input imperfect CSI, the maximum data rate is strongly influenced by the speed and delay delivery of *user* feedback transmission parameters information. The average of decrease in the maximum data rate of imperfect CSI by 10.5% compared to the perfect CSI.

Keywords : SC-FDMA, Channel Dependent Scheduling (CDS), imperfect CSI