CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

As a conclusion to the dissertation, this chapter presents an overview of what have been achieved in this project. Also elaborated in this chapter are a few important findings that have been made in this project. Lastly, a suggestion for future enhancement is presented at the end of this chapter.

6.1 Project Achievements

The main purpose of our study is to determine the best performance of error control algorithms over the differing network scenario. Our proposed adaptive error control algorithm will guide the designer to choose the suit error control scheme for different channel condition in their mobile application.

In this dissertation, we have discussed the value of an adaptive error control scheme for wireless channels when power efficiency is the primary metric. Through simulation, we have shown that there is no fixed error control scheme for different channel conditions. The simulation results that have been carried out depend on the type of parameter we used.

6.2 Research Finding

Based on the observations and analysis made on the simulation results, there are a few important findings that have been made. They are:

1. Without using the ARQ scheme, the error rate is high compared to the other hybrid schemes for the case of bad channel.
2. In the good channel, it is sufficient to apply the ARQ alone. Otherwise, the hybrid of ARQ/FEC performs much well.
3. The use of high mobile speed such as car speed for channel transition can cause the number of packet dropped to increase.
4. The adaptive error control algorithm will get benefit from it's adaptation to the changes in the wireless channel by changing the error control scheme to be used, resulting in a higher throughput than other non-adaptive error control algorithm.

In the simulation, we have test the three error control algorithm mentioned in Chapter 3 and conclude that an adaptive error control algorithm has merit from the throughput percentage perspective.

6.3 Future Enhancement

Battery power consumption per useful bit of packets sent through the channel is an important metric in the design of battery operated devices. The idea of optimizing for energy consumption across a wireless link is still largely undeveloped. Many of the previous research done concentrates at the circuit issue, or within a single device by turning elements of the device off when not in use.

Minimizing battery power consumption can improve portability by reducing its weight and lengthening the life of a charge. However, the functionality of a mobile

computer is limited by the required energy consumption for communication and computation.

To date, work has been done in the MAC layer to make use of this idea. Through scheduled access, for example, various components of the wireless link interface may be disabled to save power when they are not needed. In the higher layers, specifically the network, transport, and application layers, little if anything has been done, and this too is an interesting topic for future work.