

SCHOOL OF ENGINEERING

PROJECT'S TITLE

IMPROVING TCP PERFORMANCE OVER WIRELESS LINKS WITH  
FORWARD ACKNOWLEDGEMENT

FINAL REPORT

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## **Abstract**

The intention of this project is to investigate the performance of Transmission Control Protocol (TCP) over wireless links with Forward Acknowledgements (FACK). Since wireless links covers a vast area of discussion, it will therefore be narrowed down as Wireless Local Area Network (WLAN) in this project. This project presents a report on a simulation based investigation on the use of TCP in WLAN and will take into account TCP's performance in terms of bit error rate, packet throughputs and most importantly congestion control within the network. The development of this task will be evidence that TCP with FACK performance competently in wireless communication. The project was taken up to show results that network traffic caused by overflow of packets can be controlled and the loss of packets during transmission can be reduced with minimum bit error rates. Upon simulation FACK is tested and compared along side with other acknowledgements like Selective Acknowledgements (SACK) and TCP RENO. The concluding results show that TCP with FACK out performs other TCP implementations and is able to control the congestion of the network and maintain a very minimum packet loss environment with the least amount of bit error rate. Network Simulator version 2 (NS-2) is employed to simulate the core of this project.