



COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering, Cairo

Graduation Project Description Form

Project Supervisor(s): Dr.Hussein ELAttar

Project Title: **Simulation and performance analysis of Routing Protocols and security attacks in Mobile Ad hoc Networks (MANETs)**

Duration from mo/year 9/2013____till mo/year 7/2014_____

Product Category

Software

Standards:

Safety: UL, CE_____ IEEE _____ FCC__

Other _____

Practical Realization Form

PCB _____ Firmware____ Embedded CPU Kit (ARM, ..etc):_____

PC Software Ready-made Package_____ DSP Kit____ FPGA Kit__

VLSI Schematics _____ VLSI Layout _____ VLSI Silicon (ASIC)_____



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Language

VHDL/Verilog _____ Matlab _____ C/C++/Java _____ opnet

Productization

Finished Product Form: _____ Possible Commercialization _____

Amount of funds needed for buying components: _____

IEEE GOLD Made-In-Egypt/Engineering Day: _____

ITAC (ITIDA) or NTRA Funding Application: _____

Testing

Functional _____ Simulation Parameters _____ Final Hardware _____ Other: _____

Lab Test Setup

EMC _____ Environmental _____ Microwave _____ Analog Lab _____ Other: _____

CAD Tools (No unauthentic software is allowed): OPNET



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Elective Classes Required:

EC521 Communication Networks
and/or EC526 Mobile Communications,
and/or EC528 Data Communications



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Abstract

Wireless mobile ad-hoc networks are characterized as networks without any physical connections. In these networks there is no fixed topology due to the mobility of nodes, interference, multipath propagation and path loss. Hence a dynamic routing protocol is needed for these networks to function properly. Many Routing protocols have been developed for accomplishing this task. The purpose of this project is to analyze four-mobile ad-hoc routing protocols DSR ,TORA,OLSR and AODV in term of routing overhead, Delay ,Network load and Throughput for different network sizes and mobility speeds. Black hole attack is one of the security threat in which the traffic is redirected to such a node that actually does not exist in the network.. MANETs must have a secure way for transmission and communication which is quite challenging and vital issue. We shall study and simulated the Black hole attack effect on the network in both AODV and OLSR routing protocols in terms of routing overhead, Delay, Network load and Throughput.



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References and Links