



COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering, Cairo

Graduation Project Description Form

Project Supervisor(s): Dr.Hussein ELAttar

Project Title: **Design and Performance Analysis of Voice over IP (VoIP) Networks**

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)_____

Language



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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

Elective Classes Required:

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

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Abstract

Voice over IP (VoIP) is a technology that permits communication calls to be made over the internet and it is expected to become the mainstream for communication due to its low cost.

However, the quality of VoIP is mainly impaired by jitter, delay, packet loss, distortion and many other parameters. As a case study, we simulate a VoIP network and study its behavior and Quality of Service (QoS) under different scenarios as increasing the traffic load and generating more realistic topologies. Furthermore, we study all the potential parameters that can deteriorate the quality of VoIP and evaluate their impact to the overall QoS through simulations in OPNET.



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References and Links