



# COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering, Cairo

## Graduation Project Description Form

Project Title: Design and implementation of SECURE KEY MANAGEMENT SYSTEM FOR SATELLITE LINK

Duration from mo/year \_\_\_\_ till mo/year \_\_\_\_

Project Supervisor(s): DR MOHAMED HASSAN

### Product Category

Algorithm \_\_\_\_ Hardware \_\_\_\_ 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

VHDL/Verilog \_\_\_\_ Matlab \_\_\_\_ C/C++/Java \_\_\_\_

### 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):

Elective Classes Required:



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### Abstract

Our project is concerned with the design and software implementation of new key management system for satellite link used for tactical networks to distribute keys in very high speed. We study the security systems for satellite communication and its applications. We choose key management systems for satellite as our milestone to distribute keys in very high speed. First, we study the security systems for satellite communication systems. Second, we study the key management systems for satellite communication. Third, we design a new key management system for satellite communication link that has a very high speed and it can be used for tactical networks.

### Description of the Task:

- Simulation of satellite communication systems
- Design and Software Implementation of New Key Management System for Satellite Communication Links

### Experimental and Computer Work:

- Simulation of Satellite Communication Link using MATLAB
- Design and Software Implementation of Key Management System for Tactical Networks

### Time Table:

No.	<i>Date</i>	Task	<i>Evaluation</i>	Notes
1	1/10/2013	Understanding the objectives of the project		
2	1/12/2013	Simulation of satellite communication link		
3	1/2/2014	Design of new key management system for satellite		
4	1/3/2014	Simulation of the new key management system		
5	1/5/2014	Performance Analysis of the key management system		



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6	1/6/2014	Submission of the project		
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References and Links