COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering, Cairo

Graduation Project Description Form

Project Title: Design and implementation of secure Home security system using wireless sensor network

Duration from mo/year_____till mo/year _____
Project Supervisor(s): Dr KHALED HUSSEIN MOUSTAFA

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

Design and implementation of key management for secure home security system. We study the home security system using wireless sensor network and its applications such as surveillance. We choose motion detection wireless sensors with Doppler radar capabilities to be employed in the network. First, we develop WSN with base station and motion detection sensors. Second, the targets are detected by the sensors and any target is reported with its location to the base station. Third, the network needs key management system to distribute the encryption keys for the network and this is our task to fully distribute the keys for all sensors in the network.

Description of the Task:

- Simulation of Surveillance WSN
- GUI for Surveillance WSN on the computer
- Design and Implementation of Secure Surveillance WSN

Experimental and Computer Work:

- Simulation of Secure Surveillance WSN using MATLAB
- Programming the sensor mote
- Design and Implementation of key management for Surveillance WSN

Time Table:

No.	***Date***	Task	*Evaluation*	Notes
1	1/10/2013	Understanding the objectives of the project		
2	1/11/2013	Simulation of Secure Home security system using WSN		
3	1/12/2013	Implementation of Home security WSN		
4	1/2/2014	Building the GUI of Home security WSN		

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5	1/5/2014	Key Management for Home security WSN		
6	1/6/2014	Submission of the project		

References and Links