

# COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering, Cairo



## Graduation Project Description Form

**Project Supervisor(s):** Dr. Farouk El-Khamy

**Project Title:** WiFi in Train

**Duration** from mo/year 10/2013 \_\_\_ till mo/year 6/2014 \_\_\_

### 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  \_\_\_  \_\_\_

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### Productization

Finished Product Form: \_\_\_\_\_ Possible Commercialization \_\_\_\_\_

Amount of Funds Needed for buying components: \_\_\_\_\_

### Testing

Functional \_\_\_\_\_ Simulation \_\_\_\_\_ ↓ Parameters \_\_\_\_\_ Final Hardware \_\_\_\_\_

### Lab Test Setup

EMC \_\_\_\_\_ Environmental \_\_\_\_\_ Microwave \_\_\_\_\_ Analog Lab \_\_\_\_\_

**CAD Tools** *(No unauthentic software is allowed):*

**Elective Classes Required:** At least two courses from the following

EC551 Telecommunication systems

Communication networks

Mobile

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### Abstract

The Egyptian railway national authority decides to develop its services by implementing a WiFi service for all railway lines in the country. The WiFi service is to serve all passengers on the trains with free charges, and to offer the train drivers with fast updates about the railway traffic.

With the cooperation of the Ministry of Communication and Information Technology, the project's bidding phase is announced where bidders from different companies are required to offer the project's feasibility study and a technical and commercial proposal for the project.

The AAST student team, under the supervision of the AAST staff, decides to participate in this tender, and thus the AAST team is required to provide the following:

1. Project's feasibility study, stressing on the advantages of such a project.
2. Project's Technical Specifications Document.
3. Offering more than one technical bid, according to the number of students participating, to enter the tender.
4. Technical evaluation for the offered bids to select the optimum, winning, proposal.
5. Design of most of the project's main phases and equipment, like: Routers – Switches – Servers ... etc. according to the winning proposal.
6. A Report on the difficulties and technical obstacles that would face the team during the implementation of the project.

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References and Links