

Middle East Technical University

Electrical - Electronics Engineering Department

## EE494 - Engineering Design II

## Weekly Report

**Group Name:** λambda

**Date:** 17.05.2022 *(Week 9&10)*

**Design Coordinator:**

Associate Professor Dr. Elif Vural

**Members of Company :**

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1. **Done During Week 9**
2. In general, work has been done on finalizing system integration. This includes:
   1. The buzzer implementation has been finished, optimizing the resistor connected to it for the appropriate volume level.
   2. The power supplies to feed our tags, the battery slots, were taped behind the cards.
3. Algorithm and firmware development was continued:
   1. The algorithm that distinguishes the tags between the door and zone tags was improved upon and tested.
   2. A PWM module was implemented for driving the buzzer appropriately according to which proximity state the device is currently in.
   3. The sampling rate has been updated to ten times as before to improve the reaction speed. The effect this has on power consumption will be inspected in the future.
   4. Overall algorithm flow has been strengthened by implementing a state machine.
4. Scenarios to be run during the demo were determined, and the scenarios were started to be tested. According to the test results, minor optimizations were made in the algorithm design.
5. An open area where the demo could be held began to be searched.
6. The test sheet to be used during the demo was prepared.
7. **Planned for Week 10**
8. System integration and robustness will be improved according to the feedback received during the demo.
9. In order to improve the overall system efficiency, research on the process of switching to PCB will begin.