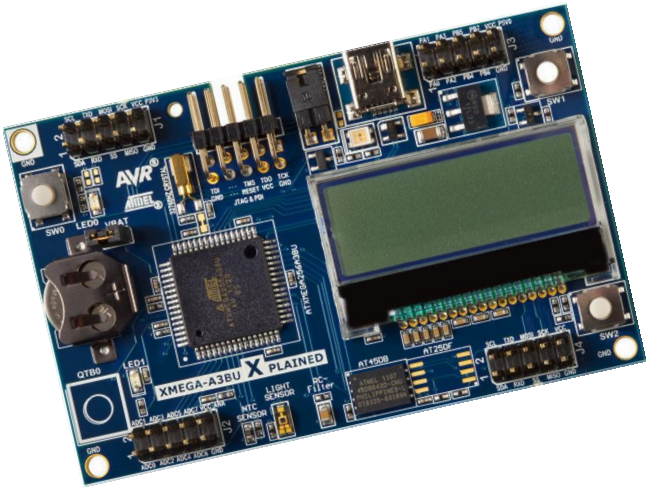
Project report-I for Atmel Embedded Design Contest- 2014

RFID Based Security System

Sardar Vallabhbhai National Institute of Technology, Surat



Name	College ID/Roll No.	UG/PG	Course/Branch	Semester
RIKEN MEHTA	U12ee004	UG	Electrical	5th
MILANKUMAR PATEL	U12co083	UG	Computer	5th
RAJAT KHANDELWAL	U12ec094	UG	Electronics	3rd

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Project Progress Report – I

- As per the project proposal submitted in Phase- I, we have to design a totally robust RFID based security system. Taken into consideration the required pre-requisites for the project, we have started searching about the different RFID reader available and different systems that can be used for the project. We have found a RFID reader and required tag which communicates with MCU through UART serial communication protocol.

- Going to step-2, we learned everything about that module from its datasheet. We studied about the UART protocol required for interfacing of RFID reader with MCU.

- Meanwhile we started building the door lock mechanism required for the testing of the whole system.
- We didn't have the XMEGA-A3BU kit, so we started experimenting RFID module with ATmega32. We interfaced it with ATmega32.

- We also required Real Time Clock for database of the accessed cards for our project. We started looking for the IC available for RTC. We found DS1307 RTC available. We studied about it, how to interface it with ATmega32.

- We successfully tested all the modules with primary door lock mechanism made for experiments. Here is the video link of the testing. http://youtu.be/0Z_zeYu15lo

- After we get XMEGA-A3BU starter kit, we started studying its datasheet and user manual. We completed startup tutorials provided by Atmel.

Circuit diagram:

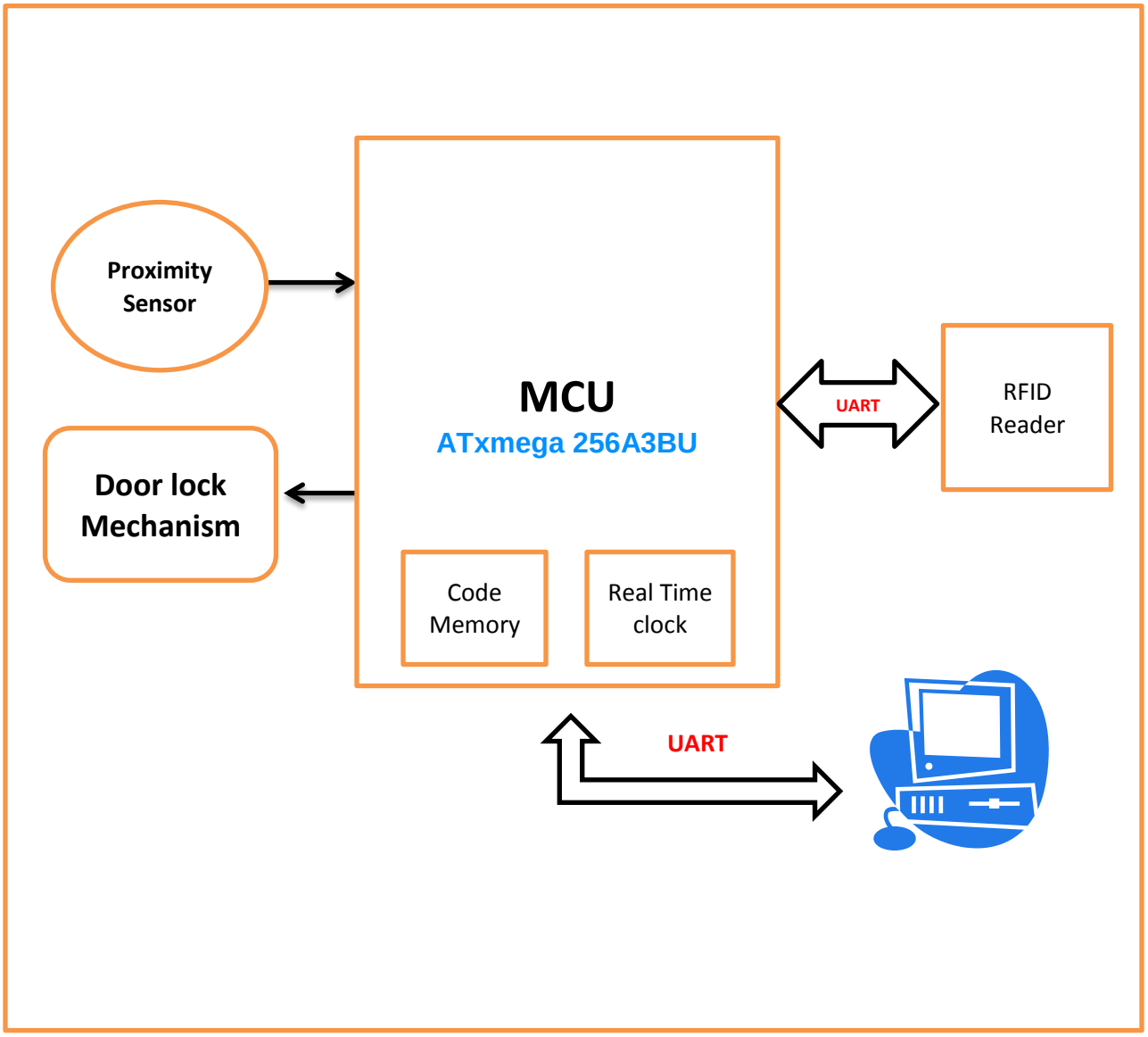
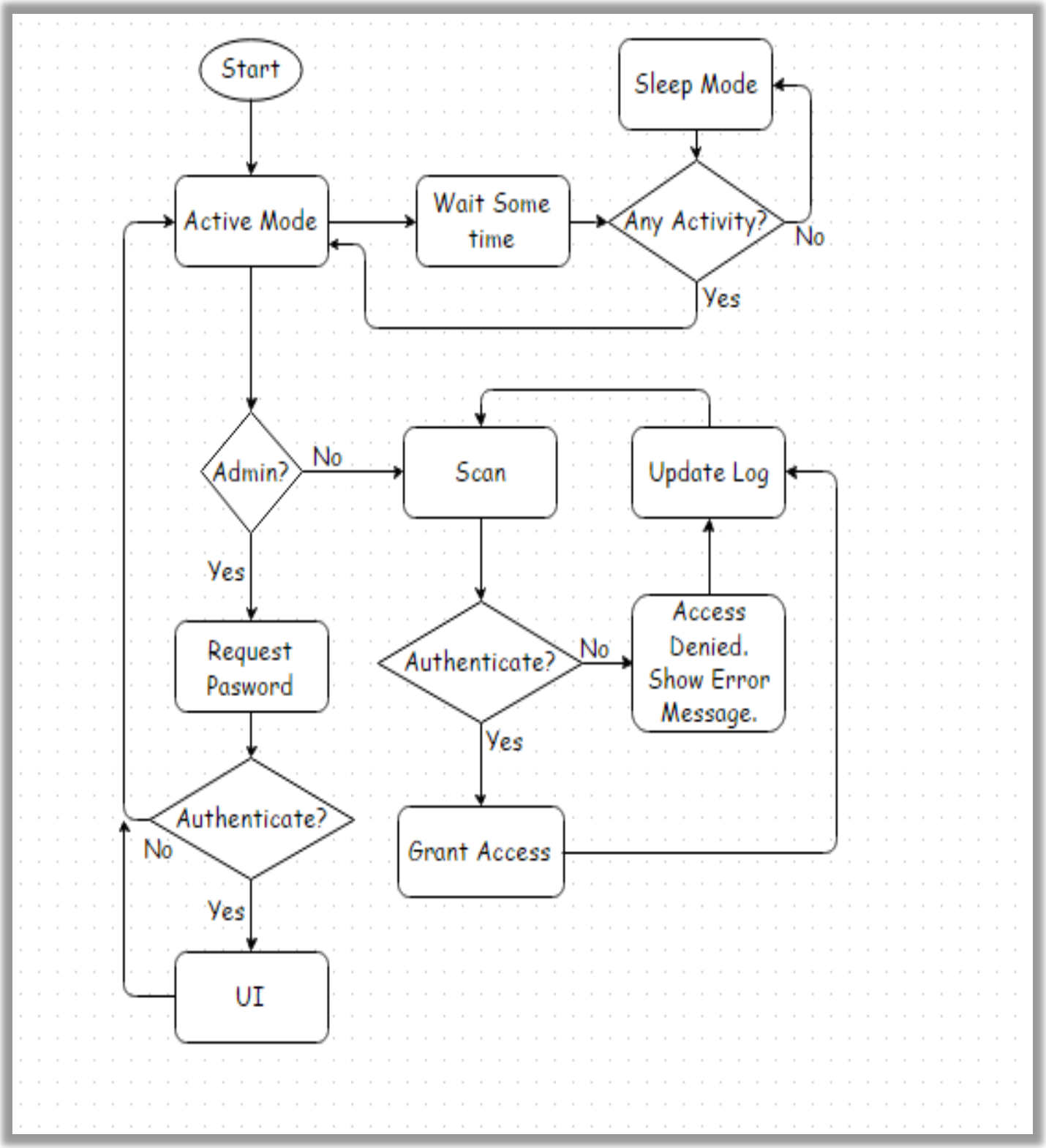
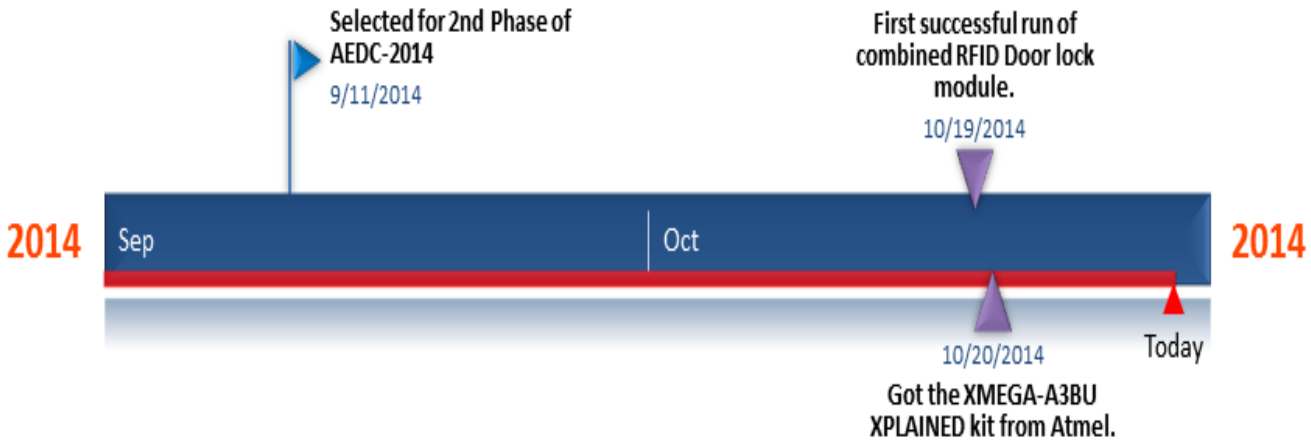


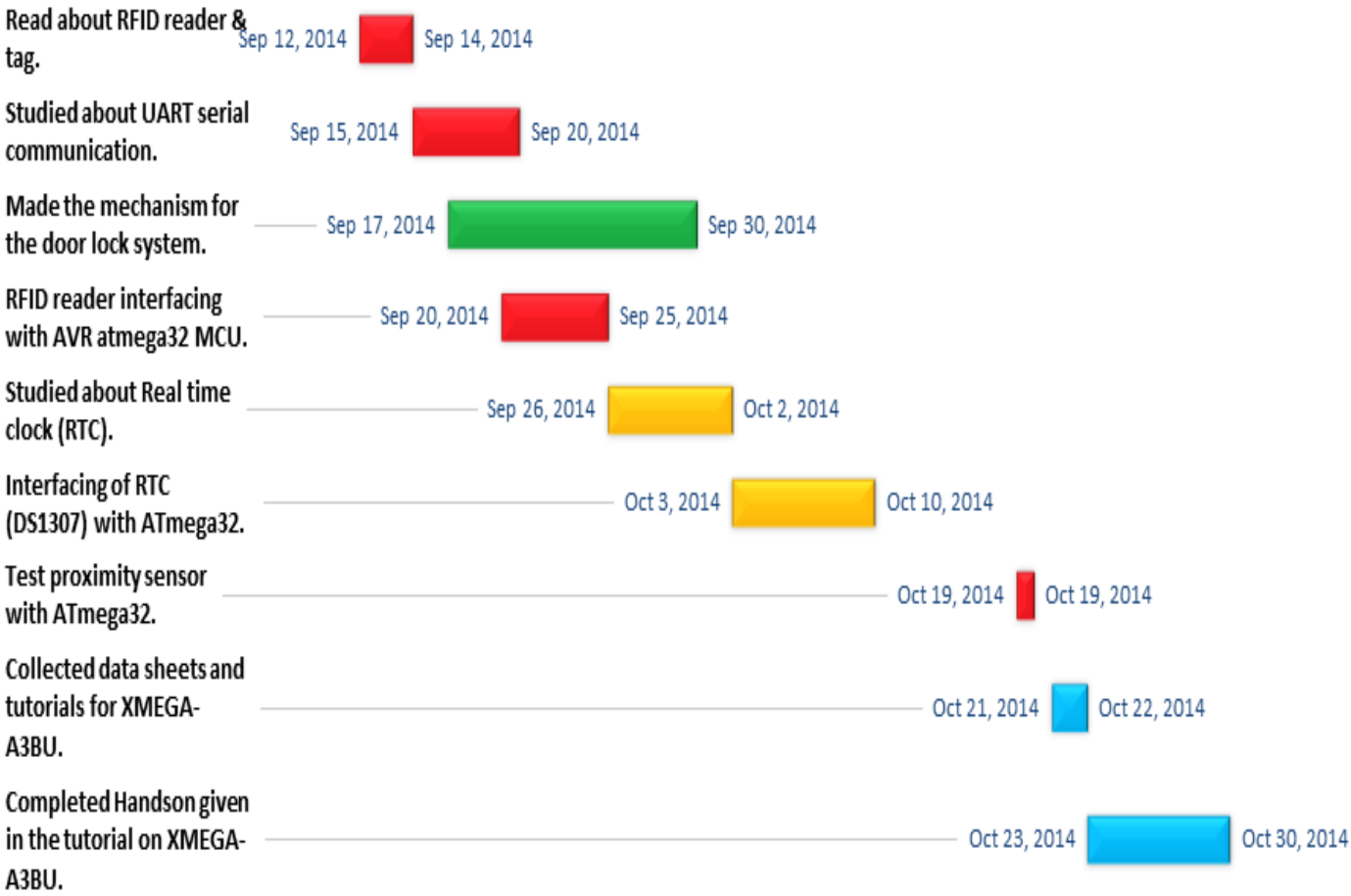
Figure 1: Controller Circuit

Flow chart of the software:



Timeline Chart





Conclusion

Till now, we have our all the modules tested on ATmega32. We are looking forward to port them on XMEGA-A3BU kit. As soon as we completely excel the programming part of XMEGA-A3BU kit, we will start building our final project.