Progress Report for Audolok

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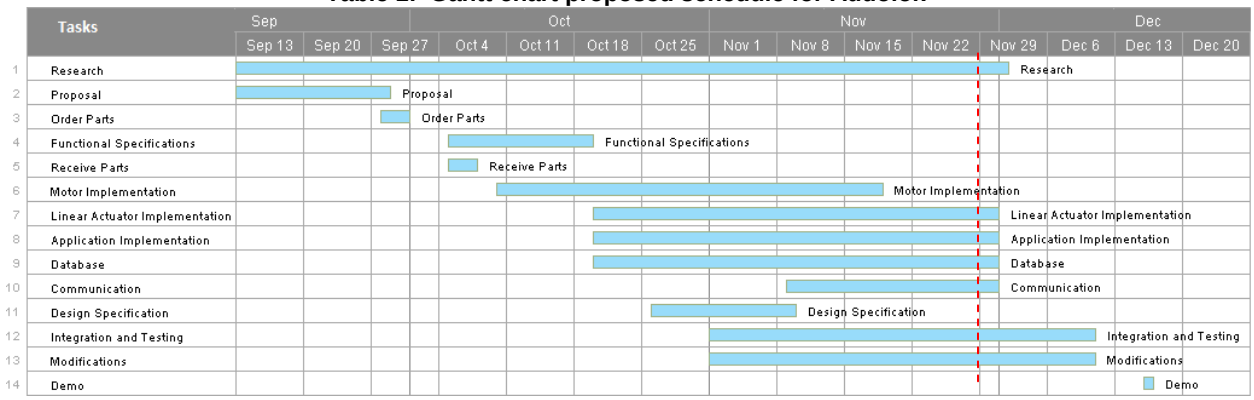
1. Introduction

Audolok is an automatic, secured access, lock/unlocking and open/closing door controlled by smartphones. The goal of our project is to eliminate daily challenges faced by physically disabled individuals. eLOK Systems has been working hard over the past three months in order to develop a proof-of-concept design of Audolok. This document will give a general overview of Audolok's progress, including the schedule, finances and current progress.

2. Schedule

Table 1: Gantt chart proposed schedule for Audolok



Our proposed schedule is shown in the Gantt chart above. The red dashed line shows today's date and as of today, we are on schedule except the software portion is set back by 1 week. However this set back will not affect our demo date and is expected to be complete by December 4th.

3. Finance

Table 2: Finance Summary

Component Name	Estimated Cost ($)	Actual Cost ($)	Difference ($)
Arduino Uno R3	35	30	**+5**
Arduino Mega 2560	50	30	**+20**
ESP8266 Wi-Fi Module	60	30	**+30**
Xbee Shield	38	20	**+18**
Motor	20	16	**+4**
Dead Bolt Lock	15	10	**+5**
Door Structure	50	25	**+25**
3D print and PCB print	50	N/A	**+50**
Basic Components	30	30	**0**
Tax and Mailing Fee	30	30	**0**
Contingencies	120	130 (2xLinear Actuator)	
		30 (Miscellaneous)	**-40**
Subtotal	498	381	**+117**

From the table above, our estimated cost was $498 and our actual cost to date is $381. Therefore we still have $117 left in our budget for any unforeseen expenses for the remainder of our project development. The final costs will be divided between each team member.

4. Progress

The progress is separated into 3 sections: Hardware and Firmware, Software and Structure. The progress is shown by a percentage and colour coated red (<50%), orange (50%-99%) and green (100%).

Table 3: Progress Table for Audolok

	Task	Progress	Comments
Hardware and Firmware	Motor		
	• Unit Testing	100%	Done. Rotates to 90deg both CW and CCW. Tested commands with push button.
	• Test with Deadbolt	100%	Motor is able to rotate lock (directly attached). Tested with gear design
	Linear Actuator		
	• Unit Testing	100%	Done. Extends and retracts on push button
	• Test with Door	50%	Door structure is still in progress.
	Integration of Motor and Linear Actuator Testing		
	• Door Open (Motor, LA1, LA2)	85%	Works but a bit buggy. Needs improvement and small modifications. Switched servo but manual fcn lost
	• Door Close (LA1, LA2, Motor)	100%	Done.
	Wi-Fi Module		
	• Unit Testing	100%	Connection established via 2.4GHz Wi-Fi router. -Restarting/kicking Wi-Fi module from Arduino -Obtain Wi-Fi module information from Arduino
	Integration with App	50%	-UDP/TCP Server and Beamer to measure time delay
Software	User Interface		
	• Design	100%	All page designs are complete
	• Implementation	50%	Need: lock state, logs, user list and support
	Database and Server		
	• Database setup	100%	Done. The database in SQLite is setup
	• Database implementation	100%	Done. The entry creation, updating, searching and deletion features are all completely implemented.
	• Connection with database	0%	Connection of the database still has errors but will be set up in a week.
	Wi-Fi Connection		
	• Connection status check framework implementation	100%	Done. System configuration framework is added for Wi-Fi connection checking.
	• Reminder to connect Wi-Fi	50%	UI is done; the API implementation is not finished.
	• Unit Testing	0%	Will be tested later.
	Data Transfer		
	• Communication between controller and app	0%	Will be achieved when Wi-Fi connection section is done completely.
	• Communication between database and app	0%	Will be achieved when connection with database is done completely.
	Support/User Manual		
	• Contents and Implementation	90%	The user manual and company information complete. Still need implementation to app
Structure	Door Structure	95%	Due to cold weather conditions, door has expanded. Need to fix the door frame so door closes properly.
	Enclosure	70%	Still in design phase as subsystems are being completed

From the progress table above, we note that all mechanical systems and structures are near completion. The software system is still in progress, but is expected to be complete by December 4, 2015. All major research and documents are completed and submitted and the remaining documents are in progress as we approach our demo date. Meeting minutes have been entered and all major designs are completed. User experimentation is still underway as we still require final testing, integration and assembling.

5. Conclusion

eLOK Systems is following the proposed schedule for the completion of Audolok. Testing and implementation of the majority of the subsystems are completed, with some small tasks in progress. The software is backed up a few days, but is expected to be completed by the end of next week. We have started on the integration, debugging and final testing phase, and we are getting ready for our demo. We have not exceeded our proposed budget, so our finances are in good standing and there is extra room for any unforeseen expenses. We expect our prototype of Audolok to be completed and ready for our demo on December 16, 2015.