

Project Status Report 3

Project Name: PCB Pick and Place

Team Name: JFL

Project Manager: Robin Pottathuparambil

Team Members: Jailine Contreras Marquez, Fernando Zavala-Ortiz, Lap Nguyen

Report Date: 11/09/2023

Reporting Period: 10/12/23 to 11/09/2023

Management Summary

Defined milestones completed: 7 of 7 (100%)
Defined tasks completed: 0 of 18 (0%) of child tasks in work breakdown structure
Total estimated project hours used: 120 of 960 (12.5%)
Ahead of (or Behind) schedule by: 10 labor-hours, 0 days
Known defects: 0 open of 0 found
Staff members on project: 0 of 0 planned
Contingency hours remaining: 100% of 3 hours

Schedule

Initial estimated completion date: May 10th, 2023
Previous estimated completion date: May 10th, 2023
Current estimated completion date: May 10th, 2023

Key Milestones Table

ID	Title	Planned Completion Date	Previous Forecast Completion Date	Current Forecast Completion Date	Actual Completion Date
1	requirements draft due/status report	9/12/23	9/14/23	9/14/23	9/14/23
2	specification draft due/requirements due	9/20/23	9/22/23	9/22/23	9/22/23
3	specifications due	9/27/23	9/29/23	9/29/23	9/29/23
4	preliminary design due	10/04/23	10/06/23	10/06/23	10/06/23
5	parts order due	10/11/23	10/13/23	10/13/23	10/13/23
6	detailed design due	10/18/23	10/20/23	10/20/23	10/20/23
7	status report	11/8/23	11/10/23	11/10/3	11/10/23

Product Size

For project, we plan to use Minisforum UM790 Pro mini-PC with dimensions of 130mm*126mm*52.3mm

Effort

Life Cycle Activity	This Reporting Period (labor-hours)		Project to Date (labor-hours)	
	Planned Effort	Actual Effort	Planned Effort	Actual Effort
detailed design due	10	10	10	10
parts order	10	10	10	10
project completion	40	40	40	40

Cost

Camera will stay the same on the system. Cables have not been needed since we decided to get a router for connectivity.

Life Cycle Activity	This Reporting Period		Project to Date	
	Planned Cost	Actual Cost	Planned Cost	Actual Cost
Parts and supplies	\$1000	\$166.36	\$1000	\$166.36

Requirements Status

ID	Functional Requirements	Team Member Responsible	Effort (%)	Verification	Completed (%)
F R1	A machine learning model will use the camera to find the location of the PCB.	Fernando Zavala	35%	Test	50%
F R2	A fiducial will be created for the PCB and test tray.	Fernando Zavala	5%	Inspection	2%
F R3	Images of the fiducial and PCB should be created and used to train the model.	Fernando Zavala	10%	Test	50%
F R4	A web interface will allow the user to login and start/stop the system.	Jailine Contreras Marquez	20%	Demonstration	5%
F R5	User should have access to camera feed on the interface.	Jailine Contreras Marquez	30%	Demonstration	5%
F R6	Web interface should have a manual override feature where the user should have control of the arm.	Jailine Contreras Marquez	30%	Demonstration	5%
F R7	System should find the PCB by jogging the camera back and forth over a XY axis	Lap Nguyen	20%	Demonstration	50%

F R8	When the PCB location is identified, the system should lower the arm and pick up the PCB using vacuum	Lap Nguyen	10%	Inspection	5%
F R9	When the test tray location is identified, the system should lower the arm and place the PCB in the test tray.	Lap Nguyen	10%	Inspection	5%
F R10	The mini-PC should control the pick-up arm manually to a precise location.	Lap Nguyen	20%	Test	70%
F R11	The camera should be mounted high enough to have a clear and large image.	Fernando Zavala	15%	Inspection	10%
F R12	A machine learning model will use the camera to find the location of the fiducial on the test tray.	Fernando Zavala	30%	Test	2%

ID	Non-Functional Requirements	Team Member Responsible	Effort (%)	Verification	Completed (%)
N F R1	The speed for moving the PCB should be 10mm/s.	Lap Nguyen	20%	Test	40%
N F R2	The system must handle PCBs of size 300 mm wide by 500 mm long.	Lap Nguyen	20%	Inspection	20%
N F R3	The PCB lifting mechanism should be capable of lifting up to 200 g	Fernando Zavala	5%	Inspection	0%
N F R4	The system should pick and place the PCB in 8 seconds.	Jailine Contreras Marquez	10%	Test	0%
N F R5	The system should use the ethernet standard for most communications.	Jailine Contreras Marquez	5%	Inspection	1%
N F R6	The mini-PC should be mounted onto the system.	Jailine Contreras Marquez	5%	Inspection	0%

Top Five Risks

- 1. System might have an error from last time it was used*
- 2. Getting a defective mini PC*
- 3. Software could work in surplus PC but might have to be changed on mini PC*

Open Issues

- Time constraints on team members*

Action Items

- Keep finishing the requirements for the project.
- Update the part orders
- Detail design submitted

Defects

Not applicable