**Team Members:**

* Thomas Bock
* Ammar Ahmed
* Tan Hua
* Jan Michael Golez

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**Group Meeting Minutes:**

● LE3-DPM Construction 50% Completed

● Motion Movements On Machine.

● Raspi Camera/Laser Machine Integration with Octoprint

**Summary of Team Tasks Assigned:**

1. Housing/Ventilation System
   1. Examine Parts Needed for Ventilation System(e.g. cost of materials)
2. Stand Alone Management System(***S.A.M.S.)***
   1. Octoprint Command Testing(Mechanic Platform offers better result)
   2. Help with Octoprint Integrating the Camera and Laser Engraver
3. Solitary Software System
   1. Research ways to integrate camera unto octoprint
   2. Determine software compatability with octorpint to Laser Cut or Engrave a Material.
4. Automated/Enhance Camera System
   1. Begin Researching on OpenCV-Python
   2. Research on different microcontrollers that is compatible with OpenCV-Python

**Summary of Team Accomplishments:**

1. Housing/Ventilation System
2. Parts have been examine, a group consent is required to further proceed with the materials
3. Stand Alone Management System
4. Done research to determine method of integrating the Raspi Camera in conjunction with Octoprint
5. Do a testing to see Laser Web Compatibility in using the laser commands
6. Solitary Software Program
7. Octoprint integration with camera will begin
8. Octoprint integration with Laser Web will begin
9. Automation/Enhance Camera System
10. Research on OpenCV-Python and installation of the software and libraries needed
11. Raspberry Pi3 was found to be the most compatible for making a connection between camera system and management system

**Tasks Assigned for Next reporting period:**

1. Housing/Ventilation System
2. Proceed discussion with parts and began redesigning enclosure/ventilation system
3. Stand Alone Management System
4. Begin Laser Cutting/Engraving Testing
5. See Camera Integration on Octoprint to determine resolution of pixel
6. Solitary Software Program
7. Continue with Laser Web and Camera Integration on Octoprint
8. Begin Engraving/Laser Cutting Testing
9. Automation/Enhance Camera System
10. Purchase RasPi3
11. Install OpenCV-Python in RasPi3

**Issues:**

**Individual Summary (cont.)**

**Name:** Thomas Bock

**Tasks Assigned for this reporting period:**

1. Examine Parts Needed for Ventilation System(e.g. cost of materials)

**Accomplishments this reporting period:**

1. Parts Examined for enhancement of Prototype CNC Machine

**Issues:**

1. None

**Tasks Assigned for Next reporting period:**

1. First Draft Design of Ventilation/Enclosure

**Individual Summary (cont.)**

**Name:** Jan Michael Golez

**Tasks Assigned for this reporting period:**

1. Octoprint Command Testing(However, platform is more recommended)

2. Help with Octoprint Integrating the Camera and Laser Engraver

**Accomplishments this reporting period:**

1. Done research to determine method of integrating the Raspi Camera in conjunction with Octoprint.

2. Do a testing to see Laser Web Compatibility in using the laser commands

**Issues:**

1. Still determining STL conversion

2.

**Tasks Assigned for Next reporting period:**

1. Begin Laser Cutting/Engraving Testing

2. See Camera Integration on Octoprint to determine resolution of pixel

**Individual Summary (cont.)**

**Name:** Tan Hua

**Tasks Assigned for this reporting period:**

1. Research Ways to integrate Camera unto octorpint
2. Determine Software Compatible with octoprint to Laser Cut or Engrave a material

**Accomplishments this reporting period:**

1. Octoprint integration with camera will begin
2. Octoprint integration with Laser Web will begin

**Issues:**

1. None

**Tasks Assigned for Next reporting period:**

1. Continue with Laser Web and Camera integration on Octoprint
2. Begin Engraving/Laser Cutting Testing

**Individual Summary (cont.)**

**Name:** Ammar Ahmed

**Tasks Assigned for this reporting period:**

1. Continue calibrating camera
2. Start on image processing algorithm to detect object.

**Accomplishments this reporting period:**

1. Camera calibration was accomplished and extrinsic and intrinsic matrix of the camera parameters has been extracted.
2. The image processing algorithm is in progress. At the mean time, the code is able to capture image, transform image into binary, and perform edge detection and some noise filtration.

**Issues:**

1. The extrinsic and intrinsic parameters of the camera might not be accurate. This could be resolved by mounting the camera at fixed point and taking several pictures of the checkerboard for calibration.

**Tasks Assigned for Next reporting period:**

1. Continue on image processing algorithm to detect object.