WEEKLY REPORT and MEETING AGENDA

Report #: 6 Project Name: Open Source Lidar
Date: 03.03.2022 Prepared by: Gaurav Bhalla and Paul Roy

Agenda for the weekly meeting

1. Discussed the budget for the project.
2. Briefly discussed the tasks we are doing - trying to understand the code for each of our parts: Allen - data capturing; Aamhish - motor speed control (lidar scanning speed); Paul - data analysis & engineering; Gaurav - new PCB design, overall design flow, and uart data processing.
3. Go over concerns regarding data transfer, power regulation and where the ROS nodes are run.

Accomplishments during this period

1. Bought all of the hardware for the project.
2. Learned how to reimburse for the project.
3. Want to learn where the power for the LIDAR system in the picture is coming from. Also want to understand

Plans for next period

1. Finish the reimbursements for all members
2. Clarify and ask Questions to the OpenTOF owner.
3. Go over and understand code at a low level in order to understand each of our software portions.
4. Purchase a velocity controller for the monitor.
5. Write PID loops to control velocity of the motorized spinning mirror.
6. Effectively sample/capture the data with the MCU program.
7. Create point cloud map with data captured.
8.

Project management status

1. Schedule and milestones - As of now we are waiting on the parts to arrive in order to begin working on the physical device. Until then we are mostly working on preparing for the parts and working on the software components. Ideally we will maximize how easily we can begin working on the hardware components physically.
2. Teamwork - The whole team will work on the software portion , annotating and understanding code at a low level. Allen and Paul will focus on the portions which have more to do with the rate of sampling. Aahamish will focus on portions related to the encoder, power and motor control. Gaurav will work on issues concerning the microcontroller and flashing it. As a team we will make sure to attempt to understand the system better.
3. Purchases - Waiting for parts to arrive. Need to get reimbursed for different parts.
4. Start working on project proposals and presentation documents.

Minutes from previous meeting

Done:

1. Presented our initial proposal presentation.
2. Created our Project Proposal
3. Created BOM list with Chinese alternatives available.
    - Created Budget for Purchasing
4. Gained Familiarity with the ROS system and LIDAR mapping.

To do :

1. Purchase the parts and update BOM.
2. Focus on developing the code for the Lidar system's non-uniform sampling rate. Understand the code in the github such as open_tof.cpp, lidar_publisher.cpp.
3. Paul Roy is in charge of developing the sampling rate program.
4. Gaurav Bhalla and Allen Chen will work on flashing the STMicrocontroller with Pi 3, receive and transmit serial data from the STMicrontroller by UART, and use a ROS node to wirelessly transmit the data to a PC.
5. Aamhish Rao will work on the overhang to hold the motor and optical encoder. Consult Gaurav Bhalla regarding the ROS code for working with the optical encoder to control the motor speed.