

*EE/CprE/SE 492 WEEKLY REPORT 2 (1/13/2020 – 1/31/2020)*

*Group number: sdmay20-27*

*Project title: Gauss Sensor for Magnet Array Filter*

*Client: Dennis O'Neel*

*Advisor: Dr. Mani Mina*

*Team Members/Role:*

*Muhammad Lutfi Latip -Team Manager*

*Irfan Rafie – Test Engineer*

*Vishal Patel – Meeting Scribe*

*Muhammad Aiman Zulkefli – Research manager*

*Wei-nee Long – Report Manager*

**o Weekly Summary**

For the last few weeks, the team is working on the testings of the prototype. The testing is done in order to collect data that would help us determine the right sensor to be used for our product. This testing is also done to check if we have calibrated our sensors correctly.

**o Past week accomplishments**

- 1) Setting up the testing bench for prototype testings
  - Preparing the required equipment for smooth testings
- 2) Launching testings on the first prototype
  - Solving technical issues such as the connection errors of electronic devices, the malfunction of oil pipes, etc. before and during the testings
- 3) Collection of baseline data to determine the right sensors to be used

- 4) Discover that the PVC is not suitable as a mount for the sensor and the board as it cannot hold the sensors firmly in one place. This will cause the fluctuation of data.
- 5) Proposal on the use of surface-mount-method to hold the sensors firmly in one place.

**o Pending issues**

- 1) PVC ring cannot hold the sensors firmly in one place:
  - Surface-mount-method is proposed
- 2) Determining the best model of sensors to be used:
  - Testings are being launched to collect more data

**o Individual contributions**

<b>NAME</b>	<b>INDIVIDUAL CONTRIBUTIONS</b>	<b>HOURS THIS WEEK</b>	<b>HOURS CUMULATIVE</b>
Muhammad Lutfi	<ul style="list-style-type: none"> <li>- Setting up of test bench alongside Dr. Steward</li> <li>- Setting up meetings with the client</li> <li>- Completing Biweekly Report 1</li> </ul>	18	90
Irfan Rafie	<ul style="list-style-type: none"> <li>- Setting up the connection between sensors and Arduino board</li> </ul>	18	90
Vishal Patel	<ul style="list-style-type: none"> <li>- Improvising the design of board to make it smaller in order to fit into the collar</li> </ul>	18	90

Muhammad Aiman	<ul style="list-style-type: none"> <li>- Collecting data during testings</li> <li>- Preparation of equipment</li> </ul>	18	90
Wei-nee Long	<ul style="list-style-type: none"> <li>- Setting up the test bench</li> <li>- Setting up meetings with advisor and instructor</li> <li>- Suggestions on an alternative way to mount sensors for testing without using PVC ring</li> <li>- Writing Biweekly Report 1</li> </ul>	18	90

**o Summary of weekly advisor meeting**

- 1) Determined a testing plan that should be done in order to get the right data.
  - a) 3 sets of data ranging for 30 mins are taken for every phase. For instance, our testing include 4 phases:
    - i) Clean hydraulic fluid. (Baseline values)
    - ii) 3 grams of iron particles supplied
    - iii) Another 3 grams is included making a total of 6 grams in the system.
    - iv) Another 3 grams is included making a total of 9 grams in the system.
  - b) Incremental amount of iron particles are supplied to the system and the change in readings is what the team is interested in looking for.
- 2) Need to look into the orientation of sensors and how it could affect our data.
- 3) The team should present the findings at the next meeting.

**o Plans for the upcoming week**

- 1) Collection of more data from testing
- 2) Determine the best sensor model to be used for our product