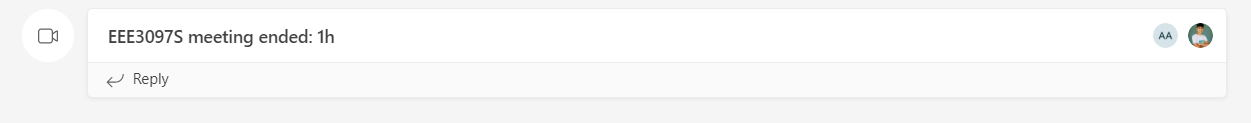
EEE3097S Weekly Review Submission

Meeting 1: DSLGRE001 ADMALI004 20/08/2021

We met for 1 hour via MS Teams



**Project Management Tools:** Asana and Github

**How often will we meet:** We will be meeting once a week in a group as well as once a week with our tutor. We have planned to meet every Thursday.

**Project Thoughts and Ideas**:

Research on IMU testing, look at alternatives for IMU.

Research on IP’s involved

We have decided to have a soft IP

**Defining an IMU:**

A small device with multiple sensors, the combination of these sensors allows to estimate the orientation of the sensor in space.

Contains:

Accelerometer – Detects change in speed

Gyroscope – detects changes in the orientation of the sensor (angular velocity)

Magnetometer – Measures magnetic field at a particular point

**Possible subsystem of IP:** An extractor that will contain the data taken from the IMU

**Reduce power consumption ideas:**

Switch off USB/LAN IC

Turn of HDMI

Throttle CPU

Disable Wifi & Bluetooth

Disable on-board LEDs

**Substitute for IMU:**

Research possible alternatives to simulate an IMU with the features of the ICM-20649

Soft IP to simulate behavior of IMU, possibly make use of MATLAB simulation software

Use Matlab simulation as a substitute for the IMU and read the data and interpret the data

Could possibly use a phone to extract data, phones contain internal sensors to detect orientation and behave like a gyroscope. Phyphox.org/remote-control can allow for this. We can extract raw data and interpret it

**Extract data:**

Large excel sheet full of data extracted from IMU, what do we do with this?

Data consists of x, y and z data, we can detect speed, height of waves, orientation of waves, we can detect the time where waves are not present. We can trach the frequency of the waves.

We will use real time logging

Weekly Review Meeting 1 with Tutor:

Look at requirements from Thesis pdf

25% Fourier Coeefficients – make use of digital signal processing. 25% of spectral content extracted. Low pass filter to avoid aliasing. Frequency of reading samples.