**BME Capstone Design Project Weekly Progress Report**

**Project Title:** KK01: Design of extremely small satellite

**Student Name:** Bethany Santos, Ho Yin Samuel Yeung, Owais Nakhuda

**Reporting Week:** Jan 7 - Jan 11

**Project Manager of the Week:** Ho Yin Samuel Yeung

**Tasks Outlined in Previous Progress Report:**

* Determine project schedule for upcoming semester
* Plan out weekly team project schedule

**Progress made in Reporting Week:**

* Determined Weekly Meeting time for new semester
* Scheduled Plans for upcoming semester

The main goals for this week was to establish a concrete schedule for the upcoming months in order to complete the design project on time.

The schedule is as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Action | Group members | Duration |
| 1a | Proof-of-concept design | Ho Yin Samuel Yeung | 3 - 5 weeks  (JAN - FEB) |
| 1b | Test Procedure documentation | Owais Nakhuda | 3 - 5 weeks  (JAN - FEB) |
| 1c | Parts Acquisition | Bethany Santos | 3 - 5 weeks  (JAN - FEB) |
| 2 | Prototype testing | Sam, Owais and Beth | 3 - 5 weeks  (FEB - MAR) |
| 3 | Final System Design/testing | Sam, Owais and Beth | 3 - 5 weeks  (MAR - APR) |
| 4 | System Finalization | Sam, Owais and Beth | 3 - 5 weeks  (MAR - APR) |

Once the concept design is finished, the remaining tasks will begin to overlap each other (testing will be done with prototype to determine necessary changes; final design will be focused on meeting nonfunctional requirements such as size, weight and power).

As of this week, the prototype design will be based around using the RFM95 LoRa Module and HC-12 433 SI4463 Long Range RF Module. The final prototype and final design of the system ideally will use LoRa, however the HCS-12 Longe Range module uses serial communication which should help speed up proving our concept.

Component acquisition will be based around finding distributors with the lowest cost and delivery times. A local electronics distributor, Creatronic, supplies some of the necessary components. For specialty RF components, mini-circuits is a possible distributor.

The Testing stage will be based around balancing transmission power, antenna geometry and power consumption in order to achieve the longest possible operating range.

**Tasks for Next Week:**

* Complete proof-of-concept design for LoRa Radar satellite
* Establish orders for design
* Create test plans and procedures for performance testing