WeirWeather Group Meeting 18 Minutes

Date: 15:00, Wed 12/02/20 Room: RC473

Minute Taker: Callum Brooksby

Attendance

Callum Brooksby, Tesfu Gebremedhin, Alexander Ulrichsen, Mario Manca

Announcements

Review Previous Meeting Minutes

The previous meeting's minutes were reviewed and accepted by the group.

Actions from Last Meeting

#	Action	Assigned To	Deadline
1	Link front end scripts with Historical API	Alexander	Complete
2	Selection of 3D printing filament for Anemometer/ Wind Vane	Callum	Complete
3	3D printing of anemometer/ wind vane	Callum	In progress
4	Website testing on different devices	Callum	Complete
5	Website redundancy programming	Callum	In progress
6	Research on step procedures of calibration of wind sensor with wind tunnel	Tesfu	In progress
7	Calibration Strategies of sensors	Tesfu	In progress
8	Send Data to Database from ESP32	Zack	In progress
9	Test GSM Module with ESP32	Zack	In progress
10	Select & Order Enclosure & Mechanical Components	Zack	Complete
11	Create CAD Models of Wind Sensors	Zack & Callum	In progress

Discussion

- Rain gauge working
    - Accuracy tested, < 3% error

- All sensors and I2C Comms working on the same bus
- Anemometer I2C rpm working
- Temperature 2 point calibration ice and boiling water
    - Can potentially use Souxved in USM lab for calibration
- Humidity calibration
    - 0% moisture with moisture packets in sealed box
    - 50% and 100%, investigate how AC unit works (regulate humidity)
- Pressure calibration
    - Air compressor
- Light calibration
    - Ask image processing department for lux level sensor
- Assemble anemometer
- Anemometer calibration
- Need to look at temperature effect on the mechanical parts of sensors
- Need to print off another body for wind vane
- Wind vane calibration, calibrate true north
- Anemometer calibration, temperature and speed
- Link temperature sensor and anemometer after calibration
- Currently printing rain gauge and wind vane components (Waiting on rPETg)
- Ordered in main enclosure for microcontroller
- Microcontroller transmitting with 3G
- Printing the enclosure for the sensors (radiation shield)
- Historical API redesigned for weather charts
- Front & Back end scripts linked
    - Summary & Historical Section Working
    - File linking issue with Gauge displays
- Website redundancy, value checking correction
- Work out information transfer/how many data points
- Website tested on different browsers and devices
- Minor modifications to website (gusts, due point etc)
- Error detection on microcontrollers

Actions

#	Action	Assigned To	Deadline
1	PCB design	Mario	20/02/20
2	Housing unit	Mario	20/02/20
3	Read Data from external weather APIs	Alexander	20/02/20
4	Fix minor website issues	Callum	20/02/20
6	Full CAD Assembly	Callum	20/02/20
7	3D print remaining parts	Callum	20/02/20

8	Create CAD Models of Wind Sensors	Zack & Callum	20/02/20
9	Code for Wind sensors	Tesfu	20/02/20
10	Calibration for wind sensor	Tesfu	20/02/20
11	Send Data to Database from ESP32	Zack	20/02/20
12	Test GSM Module with ESP32	Zack	20/02/20