CC3501 weekly report example

**Group number:** 2 **Team members:** Hunter Kruger-Ilingworth, Thomas Mehes, Quentin Bouet   
**Week number:** 8

**Progress this week:**

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| **Task** | **Who did it?** | **What were the outcomes?** | **Who did the peer review?** | **What did you learn?** |
| Troubleshooting SDI-12 sensor | Hunter and Quentin | Tested RS485 with oscilloscope and SDI-12 sensor again for troubleshooting. Worked on finding the issue when receiving measurements from sensor. | Hunter | The issue was that the SDI-12 protocol has a specific byte frame format to follow. The uart\_set\_format() function fixes this problem. |
| Correct and optimise software for SDI-12 sensors | Hunter | Applied the uart\_set\_format() function to fix the communication problem with the sensors. Cleaned up original code with functions and comments. Created is\_timed\_out() function to avoid sleeping and automate receiving characters. | Quentin | Reviewed the code and confirmed its functionality with the measurement received from the SDI-12 sensor. |
| Acquired testing equipment | Hunter, Laurance, Terence | Got a scale, an SD card reader breakout board. Identified a github repository for the SD card reader.  https://github.com/carlk3/no-OS-FatFS-SD-SPI-RPi-Pico | Quentin, Laurance | Had a quick look at the SD card reader repository. Searched for headers for final implementation. Discussed housing of board with client (IP68 rated box preferred, something waterproof). |
| Started the PCB | Thomas | Created the PCB file and imported components. Placed some components and started drawing tracks. | Hunter | Discussed the practicality of placing of some components close to the edge of the board such as the SD card reader. |
| Update milestones | Quentin | Took note of progress of the software aspect of the project. | Thomas | Confirmed and agreed with the update. |
| Found components and worked on Schematic | Quentin | Added to schematic: 12V voltage regulator, barrel jack, JST headers to connect to external board. Found terminal blocks for SDI-12 sensors. | Thomas | Reviewed and discussed how the main board will be connected to another board with headers connecting to sensors and dew point generator. |

**Overall project tracking:**

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| **Week number** | **Milestones** |
| 4 | Confirm project topic |
| 5 | Begin Overview and planning |
| 6 | Hardware design: Microcontroller, DAC, SD card, flash and usb interface |
| 7 | Hardware design: Voltage regulators, loadcell circuit layout and testing, SDI-12 testing and interfacing and Informal check with Laurance |
| 8 | Hardware design: write working SDI-12 code, start PCB layout  Finalise draft schematic for Laurance to review. |
| 9 | Finish PCB layout and review to make sure all design rules pass. Implement fixes to the PCB. Final PCB design submitted on Friday to Terence |
| LR | Software: Begin development that doesn’t require hardware testing |
| 10 | Hardware: Solder components to PCB and begin interfacing  Software: Coding to receive data from I^2C DAC and optimise more SDI-12 sensor code |
| 11 | Software: data logging applications including averaging, variable sampling periods and clean exported data. |
| 12 | Verify all hardware functionality, perform testing of existing software on the physical board. Polish the software. |
| 13 | Implement final bug fixes.  Write the report.  Demo day during Friday lab. |