CC3501 weekly report example

**Group number:** 2 **Team members:** Hunter Kruger-Ilingworth, Thomas Mehes, Quentin Bouet   
**Week number:** 6

**Progress this week:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task** | **Who did it?** | **What were the outcomes?** | **Who did the peer review?** | **What did you learn?** |
| Add SD card to schematic | Hunter | Learned there are multiple ways to wire it up to enable either 1bit or 4bit bus width.  There is also example interfacing code provided by raspberry pi [pico-extras/src/rp2\_common/pico\_sd\_card at master · raspberrypi/pico-extras · GitHub](https://github.com/raspberrypi/pico-extras/tree/master/src/rp2_common/pico_sd_card) Another repo has great info on software and hardware implementation on the RP2040 <https://github.com/carlk3/no-OS-FatFS-SD-SPI-RPi-Pico> | Quentin | Fixed up the wiring from correctly adapting the RP2040 datasheet (the interface was changed from 4bit to SPI). |
| Get all the Sensors for free | Hunter & Quentin | Met with client  Got [SF-5M](https://edaphic.com.au/products/sap-flow-sensors/small-stems-petioles-flower-fruit-sap-flow-sensors/) sap flow sensor (SDI-12)  Got [LT-1T](https://edaphic.com.au/temperature/leaf-temperature-sensor/) leaf temperature sensor (SDI-12) Got [MT-603](https://cdn.shopify.com/s/files/1/0928/8178/files/MT603.pdf?9057575588948678356) load cell | Hunter | Read the datasheets and examined how we could implement these sensors |
| Add DAC to the schematic | Quentin & Thomas | MCP4716 DAC was chosen for the circuit as reference from p. 64 of DAC datasheet. | Thomas | Vdd is connected to the reference internally. Induced noise can affect DAC performance, thus bypass are included as close to the Vdd pin as possible (<4mm). |
| Update milestones | Thomas | Determined more specific goals to for both hardware and software application in future weeks. | Quentin | We should be able to finish the schematic in Wk7 |

**Overall project tracking:**

|  |  |
| --- | --- |
| **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, SDI-12 interfacing and Informal check with Laurance |
| 8 | Hardware design: finish PCB layout and review to make sure all design rules pass. Submit draft schematic to Laurance for review.  Begin Software |
| 9 | 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 SDI12 sensors & I^2C DAC |
| 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. |