

706008 - READI-net

Week 51

1. Enoch Nicholson
 - a. Actuator Purchasing
 - b. 2024 project planning
 - c. Jan/Feb dock experiment coordination
2. Alana Sherman
 - a. Looking for FETs to switch the pressure sensors
 - b. Working on the programming header for the processor

Week 50

1. Scott Jensen
 - a. Flow sensor now works to stop sampling due to rate of volume limits
2. Enoch Nicholson
 - a. Puck snap ring machining.

Week 49

1. Enoch Nicholson
 - a. Cleaning printed pucks.
2. Alana Sherman
 - a. Looking into STM32 necessary filtering on power inputs and programming link
 - b. Looked for perfect switch for low current sensors but did not find something suitable

Week 48

1. Enoch Nicholson
 - a. Supporting puck development

Week 47

1. Scott Jensen
 - a. Checked out and prepared instrument copy 2
 - b. Discussions about puck revision
2. Alana Sherman
 - a. Working on external connectors on board

Week 46

1. Enoch Nicholson
 - a. Fixing clamp issues on the second sampler.

Week 45

1. Kevin Gomes
 - a. Reviewing web application code
2. Alana Sherman
 - a. Revisiting board schematics

Week 44

1. Enoch Nicholson
 - a. Completed mechanical assembly of the second sampler, awaiting wiring & testing.

Week 43

1. Kevin Gomes
 - a. Set up READINet controller RockPi to review code from contractor applications.

Week 42

1. Enoch Nicholson
 - a. Met with Adam from USGS during OMICS meeting to discuss the current state of the sampler.

Week 41

1. Enoch Nicholson
 - a. Second Sampler build
 - b. OMICS Meeting

Week 40

1. Scott Jensen
 - a. Preparations for Omics meeting
2. Enoch Nicholson
 - a. Sampler build and testing support

Week 39

1. Enoch Nicholson
 - a. Continued sampler 1 & 2 build / test

Week 38

1. Enoch Nicholson
 - a. Prototyping sampler side plates for fluidics / electronics mounting

Week 37

1. Enoch Nicholson
 - a. Ordered components for a second instrument.

Week 36

1. Enoch Nicholson
 - a. Updated printed parts.

Week 35

1. Enoch Nicholson
 - a. Printing adjusted components to improve instrument fit.
2. Alana Sherman
 - a. Working on block diagram and components in orcad

Week 34

1. Scott Jensen
 - a. Mechanism familiarization and check out
 - b. Simple protocol work
 - c.
2. Enoch Nicholson
 - a. Sampler prototype build & test support

Week 33

1. Enoch Nicholson
 - a. Sampler prototype built & troubleshooting
2. Alana Sherman
 - a. Working on block diagram of system
 - b. Looking for solenoid driver with higher startup current capacity

Week 32

1. Scott Jensen
 - a. Supporting development of firmware and testing
 - b. Meetings around website design
2. Enoch Nicholson
 - a. Purchased system components
 - b. Submitted drawings to the shop

Week 31

1. Scott Jensen
 - a. Received prototype copy 2 from contractor and begin check out
 - b. Built development environment

Week 30

1. Kevin Gomes
 - a. Meeting to go over API with regards to web application
2. Enoch Nicholson
 - a. Continued detailed design of the October prototype.
 - b. Received mechanical components.

Week 29

1. Enoch Nicholson
 - a. Completed instrument layout for October prototype.
 - b. Provided mechanical update to SURF Center.
 - c. Received design buy in from manufacturing.
 - d. Purchased COTS mechanical components.

Week 28

1. Enoch Nicholson
 - a. Selected actuators for October prototype, and started to finalize layout of some subsystems.
 - i. Drive: Combined with base plate and simplified belt / tensioning system.
 - ii. Clamp: Switched back to C-Frame design, but made of plates.

Week 27

1. Enoch Nicholson
 - a. October prototype system layout.

Week 26

1. Scott Jensen
 - a. Copy 1 updated
 - b. Working on turntable code. Found noise issue and fixed. Will need to be implemented in PCB
 - c. Clamp works with force sensor
2. Enoch Nicholson
 - a. Prototype design for new drive, cylinder and clamp.

Week 25

1. Scott Jensen
 - a. Two copies of the wire-wrap prototype (wwp) have been fabricated and checked out. One copy has been delivered to the firmware developer.
 - b. Using old code modified for the wwp, the clamp with its Force sensor has been enabled. Clamp is capable of moving between three positions: open, hold and close.
 - c. Meetings about the filtering experiments
2. Enoch Nicholson
 - a. Modeling cylinder concept.

Week 24

1. Kevin Gomes
 - a. Meeting
2. Enoch Nicholson
 - a. Fixed design issues with clamp to make it usable for fluidic testing.
 - b. Ordered pucks for testing.
 - c. Started conceptual layout for October Prototype.
3. Alana Sherman
 - a. Working on Sampler board, made parts for STM32 processor and the motor drive section

Week 23

1. Enoch Nicholson
 - a. Completed DOEST prototype build.
2. Alana Sherman
 - a. Making parts in Orcad for Scott's sampler control board
 - b. Refreshing my Orcad skills

Week 22

1. Kevin Gomes
 - a. Met to discuss possible replacement of the linux controller with COTS alternative
2. Scott Jensen
 - a. More attention (many meetings and discussions) to a possible off the shelf solution for control and communications.
 - b. Support getting hardware to consultant and hard parts checked out
 - c. Prepared pin assignments for the prototype to be reviewed
3. Enoch Nicholson

- a. Continued DOEST prototype assembly.

Week 21

1. Scott Jensen
 - a. A lot of investigation into the applicability of the Sutron Satlink3 product
2. Enoch Nicholson
 - a. Waiting on machined parts.
 - b. Began assembly of printed components.

Week 20

1. Kevin Gomes
 - a. Meeting with contractor
2. Scott Jensen
 - a. Reviewing Sampler electronics prototype for fabrication
3. Enoch Nicholson
 - a. Waiting on parts
 - b. Transferred CAD data to PDM Vault

Week 19

1. Kevin Gomes
 - a. Looking over SDI-12 protocol to see if it's something we need to support
2. Enoch Nicholson
 - a. Produced and submitted machined part drawings for fab.
 - b. Fit checked printed parts and ordered full prototype components.

Week 18

1. Scott Jensen
 - a. Testing of Flow Gauge
 - b.
2. Enoch Nicholson
 - a. Completed initial design of press assembly and reviewed with Mark Tynes and Scott Jensen.

Week 17

1. Kevin Gomes
 - a. Meeting with possible contractor for firmware system
2. Scott Jensen
 - a. Transfer mechanical design to ME
 - b. Defining firmware scope for outside contractor
 - c. Creating schematics for next electronics revision
3. Enoch Nicholson
 - a. Finished the prototype model for the drive and cylinder. Ordered hardware and fit check components.
 - b. Began designing the prototype press assembly.

Week 16

1. Enoch Nicholson
 - a. Modeling DOEST prototype sampler

Week 15

1. Scott Jensen
 - a. Making progress on a few fronts.
 - i. Puck blanks in and a few unload cycles indicate the volume is not that terrible!
 - ii. Transferred clamp to complete design.
 - iii. Progressed on documenting basic flow of instrument.
 - iv. Located solenoid driver that might provide a nice complete solution.

Week 13

1. Scott Jensen
 - a. Lots of progress on many fronts
 - b. New clamp design taking shape and nearing a build stage
 - c. Cylinder design is coming together
 - d. Fluid control with duck bill prototype is under testing and showing promise.
 - e. MoSCoW lists have been collated and sent to USGS

Week 12

1. Kevin Gomes
 - a. Zoom call with BBWS.

Week 10

1. Kevin Gomes
 - a. Follow up meetings to parse through user feedback for handoff to BBWS

Week 9

1. Kevin Gomes
 - a. Two-day workshop to kickoff project and gather requirements for sampler hardware and UI software.
2. Scott Jensen
 - a. Lots of work and attention to getting the prototype demonstration device working. It worked!
 - b. Big national meeting yesterday was very insightful into project goals.

Week 7

1. Scott Jensen
 - a. Lots of work and adjusting to get the vacuum prototype functional. It now loads and samples.