706008 - READI-Net

Week 50

1. Scott Jensen
    a. Continued development and preparation for Australian deployment of FIDO1
2. Enoch Nicholson
    a. Fido design finalization
    b. Starting to submit parts for fabrication
    c. Purchasing components for 10X build
3. Brent Roman
    a. Corrected some troublesome networking misconfigurations for Kevin Gomes

Week 49

1. Scott Jensen
    a. Prepared and delivered instrument to 219 Design for manufacturing review

Week 47

1. Scott Jensen
    a. Switched over to new valves and clap configuration
    b. Working on FIDO2
2. Enoch Nicholson
    a. Continuing Production version design changes
    b. Preparing for 219 design kickoff meeting
    c. Created costed BOM

Week 46

1. Scott Jensen
    a. Finally located a hidden intermittent bug in the firmware
    b. Preparation for the eDNA comparison study
    c. Participated in the eDNA comparison study
2. Enoch Nicholson
    a. Aquarium experiment prep
    b. Production version CAD design

Week 44

1. Scott Jensen
    a. Making progress on the FIDO PCB integration into the FIDO mechanism
    b. Fixed a few lingering issues

    c. Stuck still with one timing issue

Week 43

1. Scott Jensen
    a. Completed checkout of new fido control pcb.
    b. Working on integrating control pcb into instrument
    c. Clamp problems and finding a solution
    d. Puck counter troubles measuring top of stack
2. Enoch Nicholson
    a. Selected new lead for linear actuator
    b. Troubleshooting valve issue
    c. Selecting new valves
3. Brent Roman
    a. Updated RockPi-S to use current version of u-boot

Week 42

1. Enoch Nicholson
    a. Mounted FIDO board
    b. Supported testing of First fully wired instrument

Week 41

1. Enoch Nicholson
    a. Large Linear Actuator integration

Week 40

1. Scott Jensen
    a. PCB is in and assembled
    b. Check out processes is underway
    c. Assistance with the puck processing system
2. Enoch Nicholson
    a. Met with design firm who will be providing feedback for the project

Week 39

1. Scott Jensen
    a. Collecting state of development to help define statement of work for outside contractor
2. Enoch Nicholson
    a. Ordering Gasket material

Week 38

1. Enoch Nicholson
    a. Ordering Gaskets

Week 37

1. Enoch Nicholson
    a. FIDO build support
    b. Puck gasket quotting

Week 36

1. Scott Jensen
    a. Checked out latest instrument build
    b. Updated clamp function with a calibrate mode
2. Enoch Nicholson
    a. FIDO Beta Builds

Week 35

1. Scott Jensen
    a. Supporting build up of the pre-production units
2. Enoch Nicholson
    a. Continued building instruments

Week 34

1. Enoch Nicholson
    a. Finished collecting parts
    b. Began assembly

Week 33

1. Scott Jensen
    a. Lots of work adjusting scripts to production guild prototype a
    b. Running in to an issue of filter seal during nitrogen purge
2. Enoch Nicholson
    a. Supporting part orders
    b. Helping with logo / mfg review discussion
    c.

Week 32

1. Scott Jensen
    a. Worked out puck loading algorithm with state implementation
    b. Working toward being able to run an actual “sample”

    c. Supporting design of electronics board
2. Enoch Nicholson
    a. Completed ordering parts. In process of printing

Week 31

1. Enoch Nicholson
    a. Instrument Design Updates & beginning to purchase components

Week 30

1. Enoch Nicholson
    a. Began to address mechanical issues with first FIDO prototype before ordering #2.

Week 29

1. Scott Jensen
    a. Tuned up puck counting sensor and adding into puck loading functions
    b. Preparing for PCB layout with design review
2. Enoch Nicholson
    a. Prototyping reagent bottles

Week 28

1. Enoch Nicholson
    a. Updated high level scripts to run sample and load puck using valve state commands.
    b. Started to work on improving positioning (arm and cyl) with Scott
    c. Met with Jim and Scott to plan the course of action leading to building Instrument #2
    d. Refocusing on reagents & fixing design issues ahead of ordering new parts.

Week 27

1. Enoch Nicholson
    a. Started working with Scott's updated valve code

Week 26

1. Enoch Nicholson
    a. Continued testing FIDO
    b. Started passing fluid through system

Week 25

1. Enoch Nicholson

    a. FIDO Bring up

Week 24

1. Enoch Nicholson
    a. Continued FIDO build & checkout

Week 23

1. Scott Jensen
    a. Started a calibration of the transfer function of the paddle wheel flow sensor. Luckily the volume per pulse is proportional to pace. With that and the ability to scale the pace epoch and volume unit, a simple counter with offset has been implemented. The actual volume can then be converted in the upper level Micropython at a slower rate.
2. Enoch Nicholson
    a. Received all parts
    b. Started FIDO Assembly

Week 22

1. Enoch Nicholson
    a. Received and unpacked parts for FIDO

Week 21

1. Enoch Nicholson
    a. Completed ordering of parts for FIDO

Week 20

1. Enoch Nicholson
    a. Continued to wrap up design of instrument last week
    b. Finished Model
    c. Started ordering parts

Week 18

1. Enoch Nicholson
    a. Modeling Final Sampler
    b. Building prototype drive and cylinder assemblies

Week 17

1. Scott Jensen
    a. Working to get Cloud and Web application moved to MBARI control

Week 16

1. Enoch Nicholson
    a. Prototype fabrication drawings for Cylinder & Encoder / base plate

Week 15

1. Scott Jensen
    a. Instrument was prepared for some science sample testing.
2. Enoch Nicholson
    a. Created ‘mock up’ of final sampler in CAD and sent Screenshots to Jim for a presentation

Week 14

1. Scott Jensen
    a. The ambient tolerant opto-interruptor driver values have been determined and completely assembled. Testing has shown complete function even in full sun light. It is however still possible to run the unmounted sensor in just the right angle to directly face the sun and cause the over-bright function to trip. There has to be a limit, but at least there is an indication now that it is too bright.
    b. Integration within the firmware environment found a conflict between two functions where one was disabling interrupts for a long period of time. A work around has been determined but an investigation into if the disabled is required would be useful.
2. Enoch Nicholson
    a. Sampler Modeling

Week 13

1. Enoch Nicholson
    a. Started mocking up frame 80-20 frame design

Week 12

1. Enoch Nicholson
    a. Design discussion with Gene.
    b. Ordering prototype peristaltic pumps & valves.
    c. 80-20 Frame Design

Week 11

1. Scott Jensen
    a. Implemented the software for the AC-coupled interrupters
2. Enoch Nicholson
    a. Ordered some sample parts from send cut send

b. Ordered US Solid valves for evaluation.

Week 10

1. Scott Jensen
    a. After a long two weeks the dock deployment is over. It was a learning experience and while it did not work perfectly a great todo list has been generated
    b. Finally settled upon a circuit topology for ambient light abatement through the opto-interrupters
2. Enoch Nicholson
    a. Met with Jim, Scott and Kevan to debrief dock deployment & discuss next steps for / current status of Sampler. Still targeting April 1 for a complete model.

Week 9

1. Enoch Nicholson
    a. 2024 ARWS (new name?) design. Valve layout, skeleton design
2. Brent Roman
    a. Provided cell service for Dock Test
    b. Consulted with Scott Jensen on serial port options and Linux port naming

Week 8

1. Scott Jensen
    a. Preparations for dock deployment
    b. Dock deployment, rocky start but making progress and learning the short falls
2. Enoch Nicholson
    a. Dock deployment
    b. Sampler Encoder / Drive Design - Finalizing for prototype order.

Week 7

1. Scott Jensen
    a. Fluidic issues while trying to managing protocol. While clearing puck the mechanics allow the puck seal to become unseated allowing a small spray of fluid out into a critical area.
    b. A software issue causes the console port to stop sending out data. This may be a problem with a data overrun in the lower USB code.
    c. Waiting for the new frits to arrive
    d. Closing in on a design for allowing the opto-interrupters to ignore ambient light conditions
2. Enoch Nicholson
    a. Pneumatic lifter prototyping
    b. Request phase Separator Caps

Week 6

1. Scott Jensen
    a. Lots of preparation for dock deployment
    b. Running into an issue with competing mechanical needs between puck manipulation and fluidics
    c. Developed protocols for sampling
2. Enoch Nicholson
    a. Fluid path diagramming
    b. Reagent bottle concepting

Week 5

1. Scott Jensen
    a. Great progress toward full sampling.
    b. Nearly complete subsystems, only missing NFC
    c. Discovered possible solution for reagent storage
2. Enoch Nicholson
    a. Updated team on design status of 2024 sampler.

Week 4

1. Enoch Nicholson
    a. 2024 Sampler Design
2. Brent Roman
    a. Recieved SIM cards for evaluating NB-IOT cell service

Week 3

1. Scott Jensen
    a. Working to define NFC data and its format
    b. Modified copy 2 to include NFC transceiver
    c. Discussion with Minivalve to determine more suitable valves for pucks
2. Enoch Nicholson
    a. 2024 Sampler CAD Modeling - Core instrument mostly complete
3. Brent Roman
    a. Met with dev team to discuss radio communications approaches
        i. Will investigate NB-IOT and making 2nd USB host port available
        ii. Wrote kernel module to allow interrupting USB host power to reset (hung) devices

Week 2

1. Enoch Nicholson
    a. 2024 Sampler Modeling
    b. READI-Net Puck development support

2. Brent Roman
    a. Ordered Rock S 0 as possible alternative to Rock PI-S board

Week 1

1. Enoch Nicholson
    a. 2024 Sampler prototype sketching & concept CAD