902004 - Planktivore

Week 52

1. Thom Maughan
    a. Resolving DeepRip build issues with Jose. We have returns in process.
    b. Year end budget.

Week 51

1. Thom Maughan
    a. DeepRip proposal (thanks to all), funding discussions, parts ordering, part re-ordering, etc. DeepRip: AMD 3990x 64 core cpu + 256 GB RAM + SSD + 2x RTX 8000 Quadro with 48GB RAM each.
    b. All parts should be received this week, and we can perhaps make special requests the following week. Met with Jose on the build. He raised some very good points on the cooling I want and the challenges with the selected case. We are ordering a better one and making a return.

Week 50

1. Thom Maughan
    a. DeepRip proposal (thanks to all), funding discussions, parts ordering, part re-ordering, etc. DeepRip: AMD 3990x 64 core cpu + 256 GB RAM + SSD + 2x RTX 8000 Quadro with 48GB RAM each.
    b. All parts should be received this week, and we can perhaps make special requests the following week. Met with Jose on the build. He raised some very good points on the cooling I want and the challenges with the selected case. We are ordering a better one and making a return.

Week 49

1. Thom Maughan
    a. DeepRip (AMD3990x 64 core + 256 GB RAM + 2x RTX8000 +2x 48GB DDR6 + 8 TB SSD + 32TB RAID disk + case + cooling + power supply) purchasing and expensing. Many thanks to Cindy. Scheduling build by Jose.
    b. Project management
    c. Larry is shifting from housing design to fabrication for other projects as he can work housing design from home.
    d. Telecentric lens order had greatly reduced tariff.

Week 48

1. Thom Maughan
    a. Year end ordering
    b. Optical bench design for Fluum and desk
    c. Examining the plan for upgrading the storage on DeepDark escalated to a proposed ‘better path’ of building a new GPU workstation with support for latest Cuda version and large amount of CPU cores for eDNA and Image workflow processing. Reviewed with the DeepDark users, Henry Ruhl and Francisco. Requested $9k of discretionary funds from Chris Scholin. AMD 3990x with 64 cpu cores, 256 GB RAM, 2x RTX 8000 with a total of 96GB GPU RAM + fast 4TB SSD and RAID drive setup for 32TB storage.

Week 46

1. Thom Maughan
    a. Meetings on the housing design - it's moving forward nicely. First iteration will be LED flash on the inside of the faceplate.
    b. Optical bench design and purchasing.

Week 45

1. Thom Maughan
    a. Optics bench design, Fluum mount, parts ordering
    b. SSD speed eval of Gen4 vs Gen3 PCI nvme on XavierNX.
    c. Project mgmt overhead - budgets and projections, CENCOOS mk2 meeting.
    d. Charge coding

Week 43

1. Thom Maughan
    a. Ordered 2 of the 4 FLIR Blackfly S imx264 cameras. Also ordered USB3.1 hubs and fast SSD.
    b. Located the flow meter for integration with Fluum.
    c. Board bullets, board slides, project update on Slack.

Week 42

1. Thom Maughan
    a. Project management, budgets, spend plan.
    b. Board slides, board bullets.
    c. Ordering cameras, compute, fast ssd, etc.
    d. Larry Bird has the requirements and guidance for the first iteration on housing. He will be working on it when back from vacation and in 2 week quarantine.
    e. Met with Annette Stahl of NTNU on lighting options for LAUV plankton microscope.

Week 41

1. Thom Maughan
    a. Submitted board bullets.
    b. Reviewed spend plan for compute, cameras and optics with Paul
    c. Great meeting with Larry and Paul on the microscope housing. We worked thru a few tradeoffs and Larry has a good set of requirements for the first housing iteration.
    d. Larry submitted housing optics bench design to the 3D printer and I will work with Aaron on mirror mount while he is on vacation. The plan is for Larry to work on the microscope housing design when he returns from vacation and is in quarantine.

Week 40

1. Thom Maughan
    a. Meeting with Larry Bird to go over changes for the Planktivore housing design.
    b. Working camera selection, carrier board selection, wiring plan, first proto lighting and connector.

Week 38

1. Thom Maughan

a. Working with Larry on Planktivore housing, looking at optical path layout, improvements for manufacturability, proto for Fluum, etc. This effort will help with outsourcing the design and fab of the housings.
b. Meeting with Larry and Paul to go over proposed changes to the Scripps housing design.
c. Started ordering hardware for the compute module.
d. Camera review for global shutter to simplify the optical path. Good candidate has been identified from FLIR with the imx250 imager.
e. Project planning

Week 36

1. Thom Maughan
    a. Working with Larry on Fluum motor upgrade for higher rpm and lower voltage (24v for safety). Researching flow indicators (glass beads, mica).

Week 35

1. Thom Maughan
    a. Have received solidworks files for ZooCam from Scripps via Paul R. and Francisco.

Week 34

1. Thom Maughan
    a. Met with Paul Roberts on Friday. Helpful on many fronts especially on lighting design.
    b. Fluum is in working order - Larry has done an awesome job! Flow rate is less than 1m/s but should be fine for prelim testing. Looking for a low voltage (12v/24v) drive motor with PWM control - fish trolling motor might be an option (0 to 300 rpm).
    c. Have contacted three contractors and will be working RFQ as soon as possible.
    d. Instituted status reporting on Slack

Week 33

1. Thom Maughan
    a. Looking into carrier boards and camera interface options for Xavier NX, if we can get two USB 3 connections that would be ideal. Contacting ConnectTech to see what it would take to modify one of their carriers. Also researching global shutter machine vision cameras for other interface options.
    b. Installed Solidworks free viewer.
    c. Hunting for contractor options for housing.

Week 31

1. Thom Maughan
    a. Reviewing Scripps Zooglider paper.
    b. In progress on SOW for housing and bracket ME contractor quotes. The goal is to get three quotes, but this may be challenging given the times. There is a possibility of getting some design files for Zoocam from Scripps.
    c. Working on design of optics and lighting, looking into global shutter camera option.

Week 28

1. Duane Edgington
    a. Touched base with Thom M. on 2021 proposal.
2. Thom Maughan
    a. Working on ph1 proposal, getting quote on housing design

Week 26

1. Thom Maughan
    a. Working to get quote on housing for CENCOOS funding. This has been challenging as there are a number of details that need to be figured out before getting a firm quote. Working with a good candidate though.

Week 25

1. Thom Maughan
    a. Meeting with Annette Stahl, Aya Saad, Kanna Rajan of NTNU to review plankton imaging results from LAUV. Very helpful to see their results and to understand the challenges with tuning the optics and lighting. Very grateful to have Paul's experience and expertise.

Week 24

1. Duane Edgington
    a. Attended all 2021 abstract presentations June 10, including Planktivore.
2. Thom Maughan
    a. Worked on abstract presentation and CENCOOS build plan.
    b. Met with Paul to discuss lighting and camera options for potential CENCOOS build.
    c. Working to find ME contractor for housing design.
    d. Sent a note to Jon Erickson asking if he could use his 1 week to review housing contractor work products (no response yet).
    e. Putting together a work plan for a build plan and estimate for CENCOOS with follow-up with MTeam.

Week 23

1. Duane Edgington
    a. Contributed to 2021 project abstract
2. Thom Maughan
    a. Bridget has BSP installed and Blackfly camera is running on ConnectTech board
    b. Preparing waveglider towbody for test. Work to do on wiring harness, TX2 is prepd.
    c. Working plan for CENCOOS 2020 project modification. Working on finding contract resources for housing / mechanical

Week 22

1. Duane Edgington
    a. Abstract input to Project Lead

Week 21

1. Duane Edgington
    a. Abstract preparation meeting planned.
2. Thom Maughan
    a. Meetings, working on abstract and presentation.
    b. Phone call with Larry Bird to get status on Fluum and to request help getting quote for 3D printing remaining parts.

Week 20

1. Duane Edgington
    a. Abstract planning teleconference with project lead next week.

2. Thom Maughan
    a. Meeting with Henry, Francisco, Paul to discuss CENCOOS funding opportunity
    b. Working on abstract presentation

Week 19

1. Thom Maughan
    a. Working with Bridget Benson on replicating software install for TX2

Week 17

1. Duane Edgington
    a. Update to project manager on time allocation etc for 2020
2. Thom Maughan
    a. Budget forecast / re-base to accommodate impact due to covid19 pandemic. Provided input to Cindy.
    b. Working on design sketch of lens and lighting adapters / mounts for Fluum. In touch with Larry Bird

Week 16

1. Thom Maughan
    a. Working on revised project plan update

Week 15

1. Thom Maughan
    a. Researching LED lighting
    b. Attended EyeRIS review

Week 12

1. Duane Edgington
    a. Next step: figure out how timecodes in images are handled in SPCConvert and Taxonify.
2. Thom Maughan
    a. Picked up from MBARI a Jetson TX2

Week 11

1. Duane Edgington
    a. Built SPCConvert on Windows10. Issue with testing images (from IFCBS) posted to GitHub.
    b. Next step: figure out how timecodes are handled in SPCConvert and Taxonify.

Week 10

1. Duane Edgington
    a. Built clone of github repository for Taxonify application; successfully built backend system (celery, mongodb, rabbitmq, swagger editor and ui, gunicorn,...). Next step is to hook it up to Taxonify UI and populate with some test images.
2. Thom Maughan
    a. Working with Bridget
    b. Duane Edgington gave an update on Taxonify eval

Week 9

1. Thom Maughan

a. NTR

Week 8

1. Thom Maughan
    a. Working with Bridget on software framework. She has a TX2 configured and tested with the towbody GC2450. Next step is adding the FLIR Blackfly support,

Week 7

1. Duane Edgington
    a. Continuing work to build Taxonify backend on windows 10 system. Front end running; work to do on configuration.

Week 6

1. Thom Maughan
    a. Project management
    b. Working with Bridget Benson on embedded linux software development for TX2. She is up and running on the TX2 with GC2450 camera and working on dependent components install for the app.
    c. In progress on LED ring illuminator design. Parts purchasing, footprints and prep for test boards for light and pressure testing.