

902106 - Niobicon-Based AUV Docking Development

Week 51

1. George Stern
 - a. Reviewed development kit and transmitter options and resulting phy layers for cable purchase

Week 50

1. Francois Cazenave
 - a. Meeting with IFREMER
 - b. Planning recovery
2. George Stern
 - a. G.hn COTS UTP/STP transmitters and anticipated performance research
 - b. Other coms options to spend this years money

Week 49

1. Francois Cazenave
 - a. Purchasing stretch hose
 - b. Project management

Week 46

1. Francois Cazenave
 - a. Planning december deployment
2. George Stern
 - a. Root caused docking arm stuttering to LRAUV SW control; very unlikely it had anything to do with docking failure.

Week 45

1. George Stern
 - a. meeting

Week 42

1. Francois Cazenave
 - a. Finished assembling and testing the new power transfer device in the lab

Week 41

1. Francois Cazenave
 - a. Assembling power transfer device

Week 40

1. Francois Cazenave
 - a. Assembling and testing new power transfer device
 - b. Finished the design of the deflector for the Triton camera

Week 39

1. Francois Cazenave
 - a. Testing new power transfer device
2. George Stern
 - a. Fixed the actuator sensor range on the next docking design and assembled it in the can for testing - it worked.

Week 38

1. Francois Cazenave
 - a. Testing new power transfer device

Week 37

1. Francois Cazenave
 - a. Assembling/designing new power transfer device

Week 36

1. Francois Cazenave
 - a. Pontus and Brizo deployment
 - b. New power-transfer device design and assembly

Week 35

1. Francois Cazenave
 - a. Designing new power-transfer device
 - b. Helped prepare AUVs for deployment

Week 34

1. Francois Cazenave
 - a. Moved the buoy to a new location
 - b. Designing new high-current brushes
2. George Stern

- a. Troubleshooting on the dock

Week 27

1. Francois Cazenave
 - a. Brizo assembly
 - b. Writing proposal

Week 26

1. Francois Cazenave
 - a. Brizo assembly
 - b. Proposal
2. George Stern
 - a. Project proposal discussions and retesting power line modems with a shorter pole indicated that the giant capacitor theory is not the only problem.

Week 25

1. Francois Cazenave
 - a. Writing proposal
 - b. Assembling Brizo and various docking components
 - c. Meeting with Don Peters

Week 24

1. Francois Cazenave
 - a. Assembling Brizo
 - b. Working on proposal
2. Brian Kieft
 - a. Docking in full swing with Pontus this month. Had to defoul yesterday but going fairly well otherwise.

Week 23

1. Francois Cazenave
 - a. Designing Brizo brackets
 - b. Deployed docking mooring

Week 22

1. Francois Cazenave
 - a. Designing Brizo hardware

Week 21

1. Francois Cazenave

- a. Designing Brizo nose

Week 20

1. Francois Cazenave
 - a. Preparations for buoy deployment
 - b. Photosensor assembly
 - c. Project management

Week 16

1. George Stern
 - a. After positive tank testing outside the system, the new modem was added to the system and performed terribly. It appeared like at least one card stopped communicating completely, additional testing is needed.

Week 15

1. George Stern
 - a. Reverse engineered PLC modem frontend and modified the development board to improve driver performance (increasing risk of thermal/transient induced failures); testing indicated we might now get performance all the way to end of the pole.

Week 14

1. Francois Cazenave
 - a. Preparations for AUV docking deployment
 - b. Installed new threaded inserts in Brizo
2. George Stern
 - a. Began researching feasibility of underwater wifi hotspot, antenna designs and cots software defined radio options - just need to lower the the frequency by a GHz
 - b. Continued search for suitable modem chipsets - identified a few more and ordered the most promising in an inconvenient commercial package

Week 13

1. Francois Cazenave
 - a. Designed fixture for machining LRAUV shell on mill table
 - b. Project managements
 - c. Mooring preparations for deployment
 - d. Brizo upgrades for docking
2. George Stern

- a. Tested newly arrived backup modems and accidentally discovered both sets only enumerate at 1Gbps which isn't compatible with existing 10/100 switch, also a bit large - looking for alternatives again, no good options...
- b. Ordered Nb for contact area test

Week 12

- 1. Francois Cazenave
 - a. Testing high current brush
 - b. Deesign Brizo nose and nose shells
 - c. Preparations for deployment
- 2. George Stern
 - a. Tested a Homeplug AV2 compliant modem; it worked noticeably better than the last modem but not well enough to consider the communication problem solved.

Week 11

- 1. Francois Cazenave
 - a. Designing high current brush
 - b. Mooring preparation
 - c. Brizo docking nose design
 - d. Project management
- 2. George Stern
 - a. literature review of path loss/impedance of sea water and looked into SDR transcievers/amplifier options
 - b. Meeting to review test results and next steps

Week 10

- 1. George Stern
 - a. System review and power line modem and spec research
 - b. Procured and tested with a cheap modem designed to a competing spec (G.hn wave1) as the current nonfunctional one (Homeplug AV) - performance was no better and possibly worse
 - c. Ran a tank test with signal generator and scope connected to the charging rod/brush to better visualize what was happening - it is a giant cap
 - d. identified/ordered a Homeplug AV2 modem set but it is doubtful it will make significant improvements over the current module; anticipate needing to redesign the rod or make a complex RF transceiver with custom amp.

Week 9

- 1. Francois Cazenave
 - a. Connector order
 - b. Meeting with George about data transfer
 - c. WHOI order

2. George Stern
 - a. Met with team and looked through current design

Week 6

1. Francois Cazenave
 - a. Cleaning up, organizing, troubleshooting buoy
 - b. Brainstorming on high current contacts

Week 5

1. Francois Cazenave
 - a. Buoy recovery and troubleshooting.

Week 4

1. Francois Cazenave
 - a. Preparation for buoy recovery

Week 3

1. Francois Cazenave
 - a. Project management

Week 2

1. Brian Kieft
 - a. Supporting long duration LRAUV Pontus deployment that started yesterday