

902401 - Geo-Sense

Week 52

1. Rich Henthorn
 - a. Team is running cold room test of DAS unit in Bldg G
 - b. Recording time drift over the holiday weekend
2. Alana Sherman
 - a. Year end spending and budgeting decisions
 - b. With the teams help we got the instrument up and running again and it is now being cold tested over the holidays

Week 49

1. Alana Sherman
 - a. Looking at new linden cable option
 - b. Revisiting our winter deployment plan due to the delay of the Mini
 - c. Budget and spending

Week 48

1. Denis Klimov
 - a. Assembling the DAS instrument back into the sphere.

Week 46

1. Alana Sherman
 - a. Working through details that impact our winter cruise (see above with Mini) and our proposed Kolumbo expedition
 - b. Did a tank test with new Linden FO cable, it seems to have more memory and we are worried it will not lay flat. We are working with the vendor to try and optimize the FO cable

Week 45

1. Alana Sherman
 - a. Interviews for Seafloor Processes lab hire
 - b. A flurry of POs for FO connectors, Ethernet connectors, and Sintela rental fees

Week 43

1. Alana Sherman

- a. Working with vendors and Aaron S to finalize the purchase of line-counter electronics
- b. Read the manuscript for Aaron's paper on MARS data
- c. I spent most of my time researching FO connector options for the AUV test, but most are expensive and take forever to arrive.
- d. Took inventory of remaining spares, going to order more
- e. Going to take a look at the budget today and figure out what we can afford to buy this year.
- f. Aaron and I prepared a short presentation on our goals to use DAS with LRAUV.

Week 42

- 1. Denis Klimov
 - a. Contacting Ocean Instruments in regards to the Hydrophone installation on the DAS frame.

Week 41

- 1. Rich Henthorn
 - a. RAID drive enumeration
- 2. Alana Sherman
 - a. Thanks to DMO the missing sheave was found. Contacted Smith Berger to dig up the details on the line counter sensor. Sent to Aaron to see if AGO can work with what we already have to make a complete system.
 - b. Working with Aaron on details for the external proposal for ship time- lots more information related to the Mini and to the Macartney winch
 - c. Trying to run down details on winter deployment with the elevator.

Week 40

- 1. Rich Henthorn
 - a. Finished DAS controller clock drift analysis
 - b. Less than 1 PPM in most realistic test case (< 100 ms a day)

Week 39

- 1. Rich Henthorn
 - a. DAS unit clock drift characterization
 - b. Repair RAID drive
- 2. Alana Sherman
 - a. Worked on the first manuscript
 - b. Trying to figure out elevator deployment

Week 38

- 1. Alana Sherman

- a. Spent a lot of time trying to piece together the various options for deploying Geo-Sense from the Gaia Blu. I think by the end we had a clear plan of first and second choice, although much depends on the availability of shared resources.
- b. Got quotes for pop up buoys and learned more details about these
- c. Communicated with ship on winch options
- d. Thinking about elevator and ROV contingencies
- e. Going to start working on paper
- f. Purchased Mathematica software so Paul and others can continue to do analysis
- g. Writing up system description for manuscript

Week 37

- 1. Alana Sherman
 - a. Trying to work out details for Gaia blu proposal, mostly in deployment options
 - b. Running down details with winches here and on ship
 - c. Looking into ROV-free recovery strategy with pop-up buoy

Week 36

- 1. Rich Henthorn
 - a. Upgrades to lab Linux workstation

Week 35

- 1. Rich Henthorn
 - a. RAID drive enumeration issue
 - b. Clock drift issue
- 2. Alana Sherman
 - a. Writing up phase one feedback
 - b. Vetting plan for wired sheave through DMO
 - c. Helped get the system back up and running in the lab
 - d. Trying to get a realistic budget and ship schedule given phase 1 feedback and cancellation of the Packard cruise

Week 34

- 1. Alana Sherman
 - a. Looking into wireless payout counters for our sheave
 - b. Finished abstract for Ocean Sciences

Week 32

- 1. Rich Henthorn
 - a. Checking on data drives in DAS unit
- 2. Denis Klimov

- a. We had Aaron M. and Aaron S. working hard in Norway on DAS deployment. I was working on preparing two fiber optic spools, in particular, on housing/securing “Black Holes” termination, using 3D printed parts, inside the spool tube for Linder fiber, and on the side of the spool for FIS 900 um tight-buffer fiber.

Week 31

- 1. Alana Sherman
 - a. Keeping up with operations in Norway

Week 30

- 1. Rich Henthorn
 - a. Norway deployment support

Week 29

- 1. Rich Henthorn
 - a. Prepping for Norway experiment
 - b. Data log extraction and conversion
 - c. NTP server
- 2. Alana Sherman
 - a. Lots of troubleshooting of the DAS instrument in prep for Norway.
 - b. Continuing to update the documentation
 - c. Last week, we updated the software and firmware during a Zoom with Sintela
 - d. This new software has some nice features (OTDR), but we are learning about some bugs.
 - e. We spent a lot of time trying to get the playback feature of the software working, with mixed results

Week 28

- 1. Rich Henthorn
 - a. Helping preparations for Norway deployment
- 2. Alana Sherman
 - a. Proposal!!
 - b. Prep for Norway-
 - i. Met with Sintela to go over software updates
 - ii. Preparing system for software updates
 - iii. Looking into NTP servers and GPS antennas/receivers

Week 26

- 1. Alana Sherman
 - a. Lots of details to get things set for Norway
 - b. Proposal work

Week 25

1. Rich Henthorn
 - a. Norway deployment prep and support
2. Denis Klimov
 - a. Configuring bitter end/ Black Hole in the Linden cable spool for the Norway deployment.
3. Alana Sherman
 - a. Lots of little details to get prepared to ship out the Linden cable to Norway.
 - b. Went through 2026 proposal and still working on labor estimates

Week 24

1. Alana Sherman
 - a. Got budget transfers in order and figured out where we are at financially
 - b. Tank test of linden cable, all looks good
 - c. Ordered shipping case for linden cable
 - d. Working on logistics for Norway deployment

Week 23

1. Alana Sherman
 - a. Working on budget issues - trying to clean up issues from last year
 - b. Working through logistics for Norway deployment
 - c. Planning next years proposal

Week 22

1. Paul McGill
 - a. Finally succeeded in decimating 500 GB data set down to 500 MB (1 Hz)
2. Alana Sherman
 - a. Trying to plan and test components for Norway
 - b. Working through plans for 2026 proposal
 - c. Spent a lot of energy getting budget in order and still that is in process

Week 21

1. Alana Sherman
 - a. Held Project Update on Monday, so spent many of the days preceding figuring making the presentation.
 - b. Working with Aaron to determine if we could make logistics work for seep site in Milos but I think we have decided we would need more time to prepare, as our initial site had logistic difficulties and danger to the cable we could not overcome

Week 20

1. Rich Henthorn
 - a. Log file access via Windows
 - b. Alternative log file access methods
2. Paul McGill
 - a. Made slides for upcoming project update
 - b. Decimating Geo-Sense DAS data from 1 kHz to 1 Hz to search for internal waves
3. Alana Sherman
 - a. We have been working the last two weeks to get the new DAS up and running. So far we have fixed, terminated, and tested
 - b. We tested the deployed cable and made sure that the oil-absorption did not make any difference
 - c. We purchased rack mount chassis and hard case for travel
 - d. Meetings over the logistics of a potential greece deployment
 - e. Putting together project update

Week 19

1. Rich Henthorn
 - a. Ext4 raid drive reader
2. Denis Klimov
 - a. We are working on completing Phase I items on converting inner lab A282a into Laser/ Optics space; the lab was cleaned and floor waxes with ESD wax; new dedicated lock installed; Sintela/Geo-Sense related items had been moved into A282a and we run the instrument several times in a temporary configuration
 - b. Outstanding items are parts for door window closure (drawings submitted to the shop); return air grill install (ordered by Erik); and serialize/ issue dedicated keys for A282a.

Week 16

1. Rich Henthorn
 - a. Lab Housekeeping
2. Alana Sherman
 - a. Trying to start figuring out fibers for potential deployments in Europe this summer

Week 15

1. Denis Klimov
 - a. Looking into setting up a laser/ optics testing area in A282a; in the meantime, Sintela DAS and all Geo-Sense related items had been moved from Laser Lab A283 into the lab A282.
2. Paul McGill
 - a. Analyzing earthquakes in DAS data.

Week 14

1. Paul McGill
 - a. Analyzed data to look for gravity-flow events on MARS DAS
 - b. Looking for earthquakes in Geo-Sense DAS data
2. Alana Sherman
 - a. Packed up original unit to return to the UK

Week 13

1. Rich Henthorn
 - a.
2. Paul McGill
 - a. Writing code to process Geo-Sense DAS data
 - b. Looking at MARS DAS data for signs of gravity-flow event

Week 12

1. Alana Sherman
 - a. We met with Sintela to go over the data and some remaining issues. It was very productive and got answers to most of the questions
 - b. Held group meeting to keep remaining tasks on track

Week 11

1. Alana Sherman
 - a. Got new DAS unit running in lab

Week 10

1. Rich Henthorn
 - a. Deployment data
2. Paul McGill
 - a. Analyzed DAS data and presented to the team
 - b. Tested new DAS instrument and decommissioned old one
3. Alana Sherman
 - a. We recovered the GeoSense and we able to recover some data despite the failure on the board. Actual cause tbd.
 - b. Lots of things we are trying to work through that were learned from the first deployment.
 - c. The new instrument arrived so we are trying to remember how we set it all up.

Week 9

1. Rich Henthorn
 - a. Discussing recovery options

Week 7

1. Alana Sherman
 - a. Went out to sea Thursday to survey cable
 - b. Connected to instrument but could not talk to DAS, got very depressed
 - c. Working on plans for our recovery beginning of March

Week 6

1. Paul McGill
 - a. Working on strategies to survey the exact location of the DAS cable.
2. Alana Sherman
 - a. GeoSense deployed and making plans for our visit back to the site on Thursday.

Week 5

1. Rich Henthorn
 - a. DAS hardware shorted out Friday morning before leaving the dock
 - b. Instrument rebuilt over the weekend - Bravo!
 - c. Deployed slightly degraded DAS on Tuesday
2. Paul McGill
 - a. This week and weekend was all Geo-Sense, resulting in a successful deployment of the DAS instrument on Tue.
3. Alana Sherman
 - a. I worked with the amazing GeoSense team and many other heroic MBARlans through long hours all weekend to get the DAS back up and running and deployed on Tuesday. It was an exhausting and amazing experience. The deployment was successful.

Week 4

1. Rich Henthorn
 - a. Final config prep before Friday deployment
2. Alana Sherman
 - a. We have been going non stop preparing for deployment friday
 - i. Tested full system after Bryan spliced last section of fiber
 - ii. Worked on sealing up electronics sphere and Deepsea connect housing
 - iii. Held last meeting with Sintela to finalize settings
 - iv. Starting to create documentation for deployment
 - v. Trying to help out with mechanical assembly
 - vi. Working with pilots on last details of ROV-manipulation
 - vii. Too many details to even remember

Week 3

1. Rich Henthorn

- a. Set up log player station in Micallef lab (Docker+Sintela PlatformManager+image)
 - b. Training session for GeoSense DAS
- 2. Alana Sherman
 - a. Everything- working out a million details trying to get the system ready to go out next week.
 - b. So far biggest remaining issues are with the deployment rigging and sheave.
 - c.

Week 2

- 1. Rich Henthorn
 - a. Team received our customized Sintela ONYX nano DAS last week
 - b. Laser safety session
 - c. Sintela hands-on
- 2. Paul McGill
 - a. Got battery spheres under vacuum and sealed
 - b. Set up a low-frequency “shaker” to test DAS response
- 3. Alana Sherman
 - a. Big progress, bench tested the new DAS during 2 zoom calls with Sintella. Learned to operate system, adjust parameters and record data.
 - b. Finished schematic for electronics sphere and overseeing wiring of e-sphere
 - c. Worked with DMO to identify release and 600m piece of spectra line
 - d. Looked at a lot of trawl blocks but need some guidance from Kavi
 - e. Tested deepsea connect through water and had success
 - f.

Week 1

- 1. Rich Henthorn
 - a. Cold room RTC clock drift test (4 C)
 - b. Results show significant drift (10x) compared to room temp
 - c. Not really surprising