

Brent Roman

Week 30

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
 - Updated a few 2G ESPs at WHOI
 - Implemented a firmware enhancement for 3G ESP that corrects for non-linear carousel position sensors
 - Required for upcoming GLERL ASV deployment
 - Built and tested in 2 days.
 - Still needs lots more work to make it generic
 - Initial Implementation requires custom firmware for each effected ESP
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Helped George Stern verify feasibility of running USB from the OAKd camera directly into the main Mola can.
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
- Out of Office
 - Sept 8 - Oct 16 (vacation)

Week 29

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
 - Improved the calibration procedure for the 3G ESP's Carousel absolute position sensor
 - Hacked some custom firmware to correct ESPhonu's damaged abs pos sensor
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Developed USB passthru mode to increase framerate
 - Working with George Stern to investigate the possibility of running USB between Mola cans to increase available bandwidth for camera.
- 902304 - Piscivore Cam
 - Deployed again
 - Working with AI toolkit on Lonny's models
- DQ2435 - GLERL AK

- DQ2517 - ONR Middleware
 - Discovered that prospective valve control lacked an absolute position sensor
- Overhead
- Out of Office

Week 28

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
- Out of Office

Week 27

- 708184 - ESP Monitoring PNW
 - Exhaust port of ESPeddie, deployed off La Push, WA, sticking closed
 - Uncovered bug in Ruby exception masking
 - Pushed fix and now the Exhaust unstick exception recovery working
 - But, we will still run out of battery a few weeks before planned recovery
- 901205 - ESP SURF Center
 - Helping Nadia bring up ESP3s retrofitted for Function cartridges
 - Updating every ESP2G in the field (ongoing, never ending ;-)
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Hacked the camera driver to allow it to pass through JPEG encoded frames from camera
 - Increased max frame rate from 6fps to 18fps. Yippee!
 - Ripped out Stereo Matcher
 - Need to work with Sebastian on optimizing it.
- 902304 - Piscivore Cam
 - Finally figured out how to enable fisheye lens dewarping on RockChip camera
- DQ2435 - GLERL AK
 - Shipped dummy ESP for comms integration testing onto their ASV
- DQ2517 - ONR Middleware
- Overhead
- Out of Office

Week 26

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
- Out of Office

Week 25

- 708184 - ESP Monitoring PNW
 - The ESP deployed off La Push, WA is running into mechanical problems
 - It is also burning through battery faster than anticipated
 - I've been able to keep it going for now over Iridium Certus
- 901205 - ESP SURF Center
 - Working with Preston and Nadia to restructure configuration files to make it easier for 3G ESPs to move between different types of domes.
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Finally found a thumbdrive that could write raw video fast enough
 - But only for 30min at a time. Then, it must be reformatted to avoid "flash folding"
 - George and I ordered a Radxa 5C to replace the Pi4
 - It supports NVME SSDs
 - Found one 2230 SSD that appears to sustain >500MB/s during long writes
 - We shall see 😊
- 902304 - Piscivore Cam
 - Still struggling to enable lens dewarping hardware
 - Most of the best docs are from Rockchip in Chinese
 - AI is helpful, but often incorrect.
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
- Out of Office

Week 24

- 708184 - ESP Monitoring PNW
 - La Push WA deployment continues
- 901205 - ESP SURF Center

- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Experimenting with SD-cards and Flash drives to store uncompressed video
- 902304 - Piscivore Cam
 - Improved imx415 driver to enable 4k video @25hz and HD@60hz
 - Continue working to enable digital fish-eye lens dewarping
- DQ2435 - GLERL AK
 - Working with GLERL to ready their ASV for ESP
- DQ2517 - ONR Middleware
- Overhead
- Out of Office

Week 23

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
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Week 22

- 708184 - ESP Monitoring PNW
 - ESPeddie deployed off La Push, WA via Certus satcoms running well
 - ESPfriday deployed in remote lab
- 901205 - ESP SURF Center
 - Helped Chris Preston diagnose weirdness with 3G cartridge heat calibration
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Worked with Javiera to determine that Mola is attempting to write video to its RP4's built-in SDcard at >50MBytes/s – suggested architectural changes to make this work.
- 902304 - Piscivore Cam
 - Trying to figure out how to get an IMX415 camera sensor to output HD video at 60fps.
 - There are some versions of the Linux driver that purport to do this, but no joy so far in getting them working on my RV1126B dev board. Not giving up yet.
- DQ2435 - GLERL AK

- DQ2517 - ONR Middleware
- Overhead
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Week 21

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
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Week 20

- 708184 - ESP Monitoring PNW
 - ESPeddie deployed off La Push
 - ESPfriday deployed in a remote lab (fed samples from field by technician)
- 901205 - ESP SURF Center
 - Moved NFS mounts to thalassa
 - Patched old bug in Ruby garbage collector
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Working with series 4 devkit
 - Nothing works as described :-(
- 902304 - Piscivore Cam
 - Finally received RockChip RV1126B dev board
 - Took only a couple hours to get the camera working!
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
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Week 19

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- 902101 - LRAUV Technology Development
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- 902304 - Piscivore Cam
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Week 18

- 708184 - ESP Monitoring PNW
 - Steph's lab deploys for La Push, WA on May 5, 2026
- 901205 - ESP SURF Center
 - Colleagues in Denmark have deployed ESP on a creek in Iceland
 - Doing in-situ PCR every other day for a few months
 - Patched the MBARI Ruby interpreter to (hopefully) fix a very rare garbage collection bug.
 - Found 20 year old post on the Ruby issue tracker that looked like a good match
 - In case this bug bites again, modified Ruby to soldier on rather than bailing.
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Worked with George Stern to determine that camera CPU was overloaded
 - By 3 sensors running >12fps
 - Added a driver feature decimate frames from a stream
 - Sebastian added important logic to it to keep stereo cameras synchronized.
 - Recommended testing new generation cameras that offer faster processor and network
- 902304 - Piscivore Cam
 - Testing lots of alternative lenses in the hopes of finding one with greater depth of focus.
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
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Week 17

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
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Week 16

- 708184 - ESP Monitoring PNW
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- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
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Week 15

- 708184 - ESP Monitoring PNW
 - Helped diagnose camera troubles
 - Ended up shipping a replacement camera
- 901205 - ESP SURF Center
 - Helped Jim Brich debug his puckreader/scanner app
 - Worked with Kevin Gomes to package it into the FIDO SDcard image
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Finished conversion to DepthAlv3
 - Identified that framerate was being limited by network bandwidth
 - Revised sen_oakd_lcm_cpp driver to compress images with MJPEG
 - Resulting in 3x increase in framerate (from 12 fps to 30 fps)
 - Fixed a few long standing bugs in sen_oakd_lcm_cpp
- 902304 - Piscivore Cam
 - Brought up camera app on CV28 lower-power camera
 - Pitched investigating RockChip's RV1126B
 - Ordered 2 RV1126B camera boards
 - Working with Rockchip's tools to convert YOLO models
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
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Week 14

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
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Week 13

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
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- Overhead
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Week 12

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
- Out of Office

Week 11

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
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Week 10

- 708184 - ESP Monitoring PNW
 - Helping to diagnose likely USB cabling problems
- 901205 - ESP SURF Center

- Prepared ESPaway router with USB cell modem that should work in Brazil
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
 - Completed port of the driver/daemon from DepthAlv2 to DepthAlv3
- 902304 - Piscivore Cam
 - Worked with George Stern to bring up CV28 SOM and IMX 662 camera module
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
- Out of Office

Week 9

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
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Week 8

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
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Week 7

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK

- DQ2517 - ONR Middleware
- Overhead
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Week 6

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902204 - Scalable Robotics
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
- Out of Office

Week 5

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
 - Supporting Preston, Nadia & Scott in prepper ESPkoa for Brazil
- 902101 - LRAUV Technology Development
 - Configured, tested and reviewed RUT-271 Teltonkia cellular router
- 902204 - Scalable Robotics
 - Met with Sebastian Rodriguez to learn project goals/challenges
 - Built camera driver on my workstation
 - Got the same error messages they get 😞
- 902304 - Piscivore Cam
 - Started testing new lower-power Ambarella CV28 SOC
 - Boots, but does not “see” attached camera
 - Working with George Stern to chase down likely hardware problem
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
- Out of Office

Week 4

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
- 902101 - LRAUV Technology Development
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead

- Out of Office

Week 3

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
 - Working with FIDO team to create a separate /boot filesystem
 - So that the rootfs can be recovered on next boot after FIDO loses power
 - Lots of testing of improved WiFi and cell modem management in ESP Linux
 - Supporting NWFSC NOAA's repairs of their ESP's grippers
 - Discovered that RTL8723DU WiFi chips work on the Parkard
 - When RTL8723BU WiFi chips do not associate with its Cisco APs at all
 - Ported driver for the 8723DU to ESP Linux kernel
 - Testing for long term stability
- 902101 - LRAUV Technology Development
- 902304 - Piscivore Cam
 - Readied G3 camera for another deployment
 - Altered focus to near infinity
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
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Week 2

- 708184 - ESP Monitoring PNW
- 901205 - ESP SURF Center
 - Debugging cell modem connection script for the troublesome SIM7672G
 - Writing and testing generalized GPS enable/disable scripts for GPS equipped modems
 - Working with Andrea on determining why ESP WiFi cannot connect to the Parkard's network.
- 902101 - LRAUV Technology Development
- 902304 - Piscivore Cam
- DQ2435 - GLERL AK
- DQ2517 - ONR Middleware
- Overhead
- Out of Office