

902304 - Piscivore Cam

Week 29

1. Brent Roman
 - a. Deployed again
 - b. Working with AI toolkit on Lonny's models
2. George Stern
 - a. Worked with James to review the Gen4 board, begin ordering hardware and identify alternates for out of stock parts - the AI data centers or war seems to be recreating 2022 again
 - b. Finally found a lens mount; unfortunately it arrived too late to make the July deployment but will be able to run camera comparison tests when the gen3 camera returns from deployment
 - c. Continued working on the light design.

Week 28

1. George Stern
 - a. More lens testing - identified another lens to try with the other gen 4 enhancements
 - b. Tried to test the new IMX662 camera to discover metric fastener fit classes are far too complicated, framos's holders are cheap and I should have purchased holders with the lenses
 - c. Began working on lighting architecture

Week 27

1. Brent Roman
 - a. Finally figured out how to enable fisheye lens dewarping on RockChip camera
2. George Stern
 - a. Finally completed lens testing of all the cheap lenses from aliexpress, specs were at least partially incorrect on most, only one was faster with similar fov to what we have now but minimum focus distance was much further out which meant not enough pixels on target to resolve small features with an infinity focus.
 - b. Reviewed schematic with Denis, updated schematic, linked and created netlist and started working with Jose/James on a very tight layout.
 - c. Continued ordering long lead parts

Week 26

1. George Stern
 - a. Finished schematic and mechanical design for gen4, began ME drawings and Etech transfer
 - b. Started ordering longer lead items, unfortunately the world is out MCBH8MAS

Week 25

1. Brent Roman
 - a. Still struggling to enable lens dewarping hardware
 - i. Most of the best docs are from Rockchip in Chinese
 - ii. AI is helpful, but often incorrect.
2. George Stern
 - a. Gen4 schematic finished, the stm32u0 series support RTC/clock with 200nA!
 - b. Started checking everything

Week 24

1. Brian Kieft
 - a. Went over design ideas for new G4 camera system
2. Brent Roman
 - a. Improved imx415 driver to enable 4k video @25hz and HD@60hz
 - b. Continue working to enable digital fish-eye lens dewarping
3. George Stern
 - a. Schematic work continues but is nearing completion

Week 23

1. George Stern
 - a. Reviewed machined parts with Aaron and Yamir
 - b. Identified thermal mitigation plans and estimated thermal resistance without goop
 - c. Ordered bluerobotics hardware; despite claiming stock, they shipped short and billed the credit card for everything
 - d. Continued working on electrical design

Week 22

1. Brent Roman
 - a. Trying to figure out how to get an IMX415 camera sensor to output HD video at 60fps.

- i. 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.
- 2. George Stern
 - a. Pushed out a mostly complete Gen4 mechanical design and electrical feature list based on the still in work schematic for internal team review
 - b. Fixed (hopefully) and re-prepared the gen2 camera hours before deployment; looking forward to replacing it...

Week 21

- 1. Brian Kieft
 - a. Assisting with B&T for next deployment
- 2. George Stern
 - a. Continued working on gen4 schematic and mechanical design. Rough mechanical design is now in review.

Week 20

- 1. Brent Roman
 - a. Finally received RockChip RV1126B dev board
 - i. Took only a couple hours to get the camera working!

Week 19

- 1. George Stern
 - a. Reverse engineering camera interfaces - hardware synchronization of cameras/lights failed but we have user space access to kernel controlled i2c interfaces and the hardware default is probably being overwritten by driver binaries we might be able to re-overwrite after they are initialized
 - b. Interface board architecture and parts selection started

Week 18

- 1. Brent Roman
 - a. Testing lots of alternative lenses in the hopes of finding one with greater depth of focus.
- 2. George Stern
 - a. Continued working on gen4 design

Week 17

- 1. George Stern
 - a. Updated cots board rework instructions for new boards and continued electrical planning for gen4

Week 16

1. George Stern
 - a. Camera focusing and final makai testing in prep for deployment this week

Week 15

1. Brent Roman
 - a. Brought up camera app on CV28 lower-power camera
 - b. Pitched investigating RockChip's RV1126B
 - c. Ordered 2 RV1126B camera boards
 - d. Working with Rockchip's tools to convert YOLO models
2. George Stern
 - a. LRAUV re-integration on upgraded makai with new 8pin bulkhead and prep for Gen3 camera deployment hopefully later this week

Week 14

1. George Stern
 - a. Swapped bulkheads on Gen 3 camera and rebuilt
 - b. Last time buy for Oclea hardware
 - c. Worked with DMO on Makai to install a network switch and avoid keeping a backseat on.

Week 13

1. George Stern
 - a. Last minute alternative options research/final preparations for a last time buy from oclea

Week 11

1. George Stern
 - a. Continued working Gen4 camera design

Week 10

1. Brent Roman
 - a. Worked with George Stern to bring up CV28 SOM and IMX 662 camera module

Week 9

1. George Stern
 - a. Ordered new camera sensor
 - b. Gen4 camera design and replacement options as Oclea shutdown

Week 8

1. George Stern
 - a. Continued working on housing fixturing for Gen4

Week 7

1. Brian Kieft
 - a. Met with team to discuss service interval and upgrades this month.
2. George Stern
 - a. Continued work Gen4 camera

Week 6

1. George Stern
 - a. Swapping CV28 and CV25 soms on OEM boards and EVK2 to check it works
 - b. Previous weeks
 - i. Preliminary fit check to fit the OEM board and cameras into a 2in housing - it fits!
 - ii. Spent far too much time trying to order analog boards from framos; finally on order and may be on the way?

Week 5

1. Brent Roman
 - a. Started testing new lower-power Ambarella CV28 SOC
 - b. Boots, but does not "see" attached camera
 - c. Working with George Stern to chase down likely hardware problem

Week 3

1. Brent Roman
 - a. Readied G3 camera for another deployment
 - b. Altered focus to near infinity
2. George Stern
 - a. Chasing framos for a quote

Week 2

1. George Stern
 - a. Identified framos camera hardware to order and begged them to send me a quote.