Open Glider Network

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Motivation

What is it?

flarm

OGN Tracker

A

Obstacles

Receiver B

Receiver C

Obstacles

OGN

Server 1

Internet

Server 2

OGN
glidernet.org

SAR

flightradar24
LIVE AIR TRAFFIC

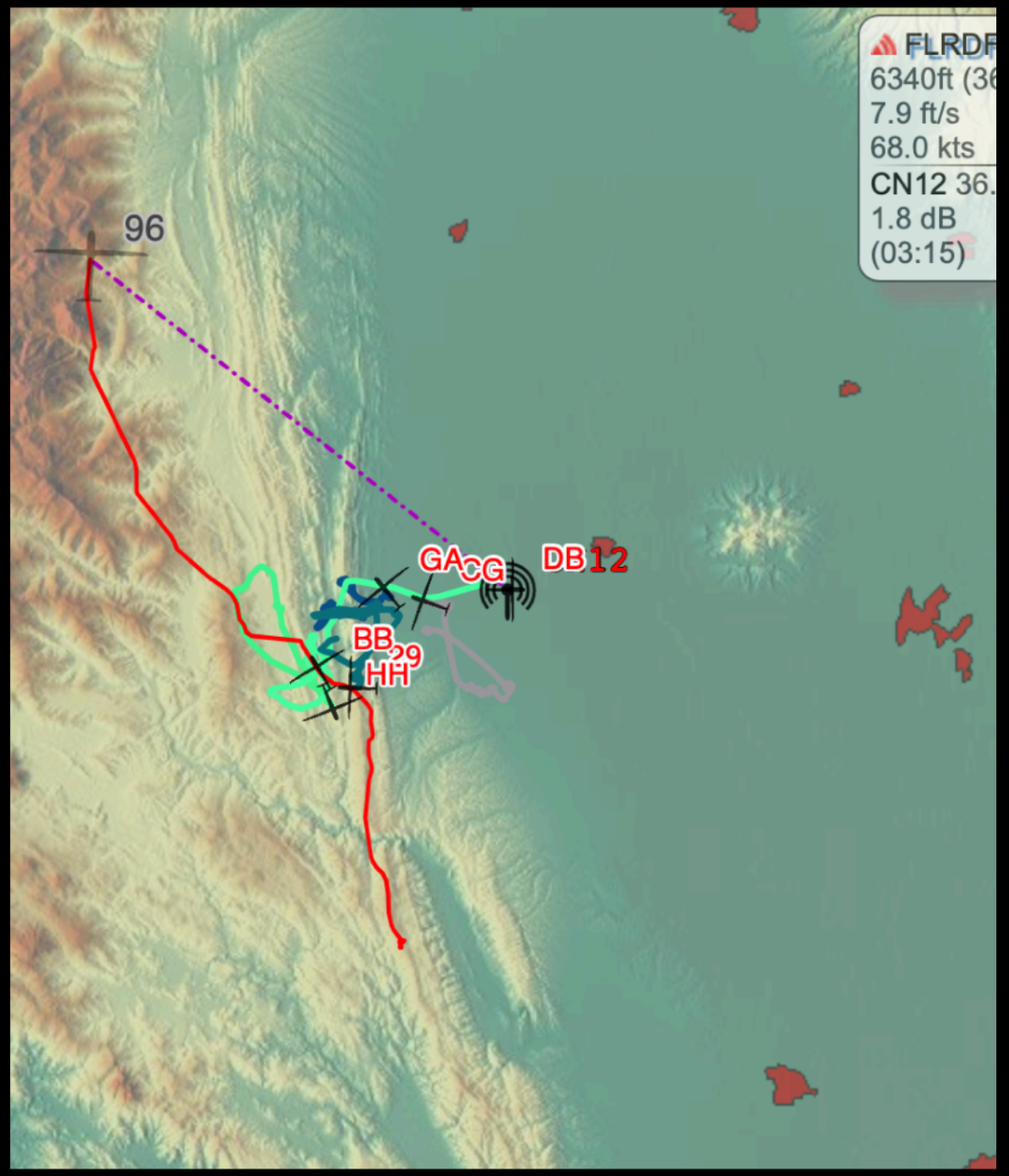
Custom Client Application

Kinda Like ADS-B

- Ground FLARM receivers pick up gliders
- Data is sent to OGN servers
- Client applications get fed glider position data live
- Can do things like show a live map of gliders

…But Not

- Doesn’t require a new xpdr
- OGN data is free to use
- OGN data is live (within 2 seconds of realtime)
- OGN can also integrate other sources of data like Spot/ Inreach trackers
- Open-source APIs to access the data



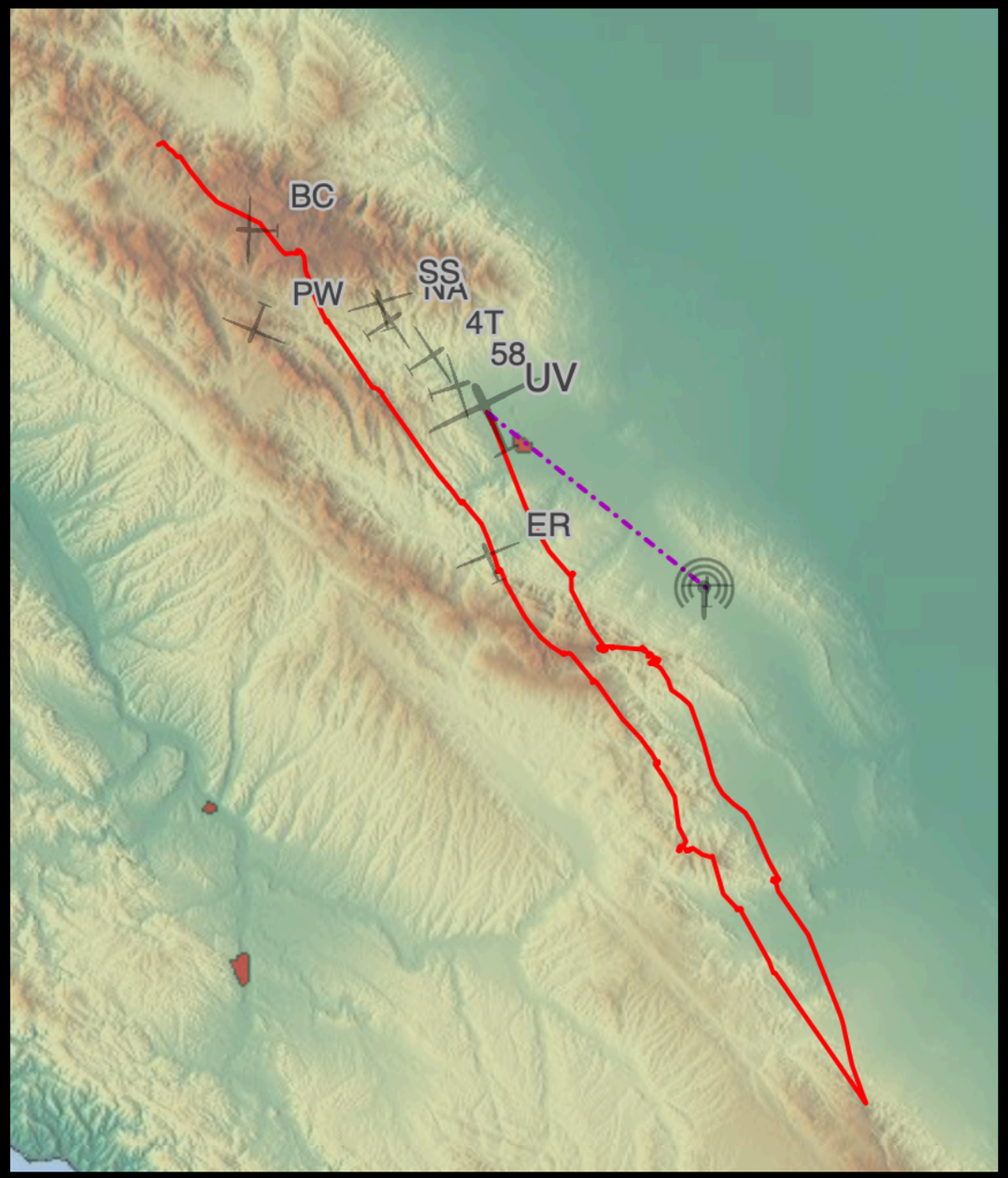
The Receiver

- Very simple
- 915 MHz antenna
- Preamp
- Software-defined radio
- Raspberry Pi (computer)
- Cables

What Can it Do?

Live Tracking

- Websites like glidertracker.org display positions on a map
- No need to wait 10-15 minutes to know if everyone is OK

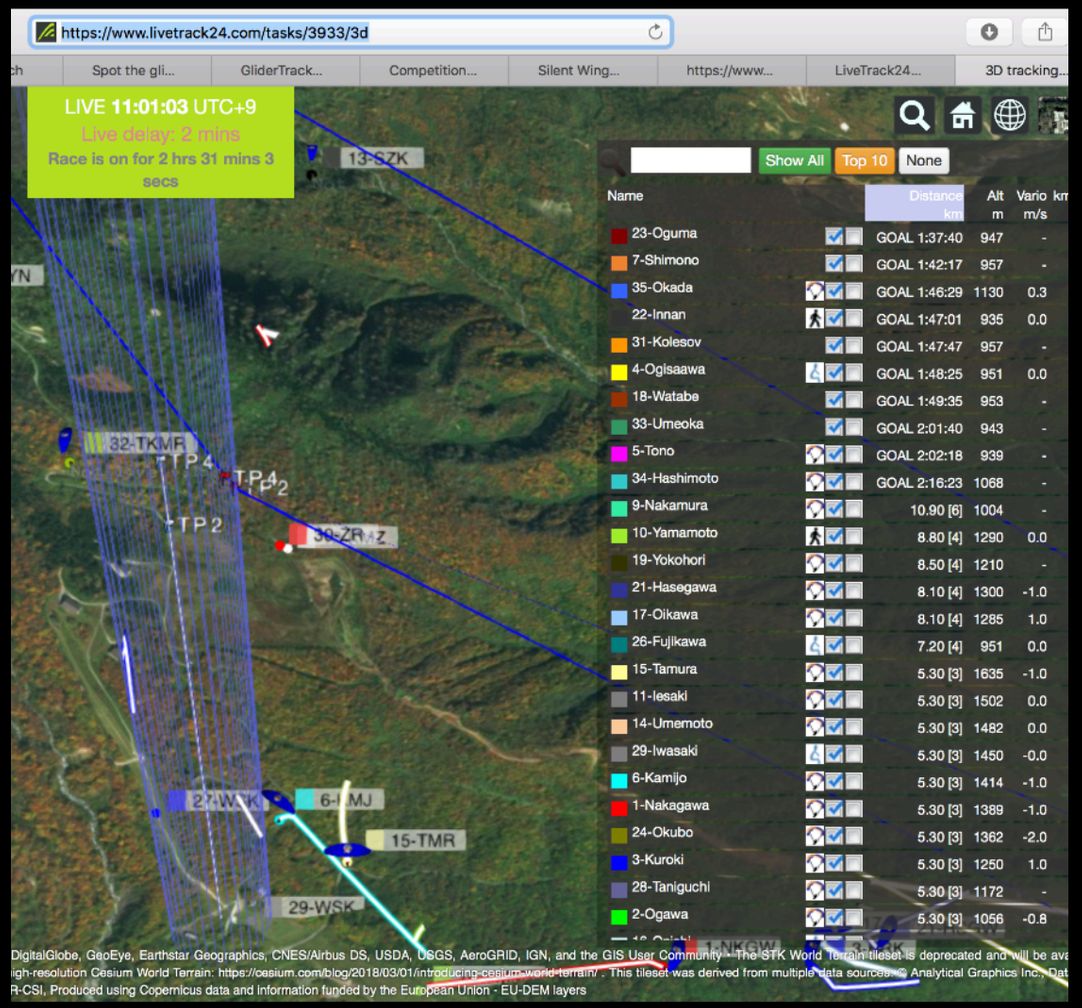


In-Air Live Tracking

- Oudie displays OGN targets
- XCSoar 7.0.0 will display OGN targets alongside normal FLARM targets
- Extends your “radar” when you have cell coverage

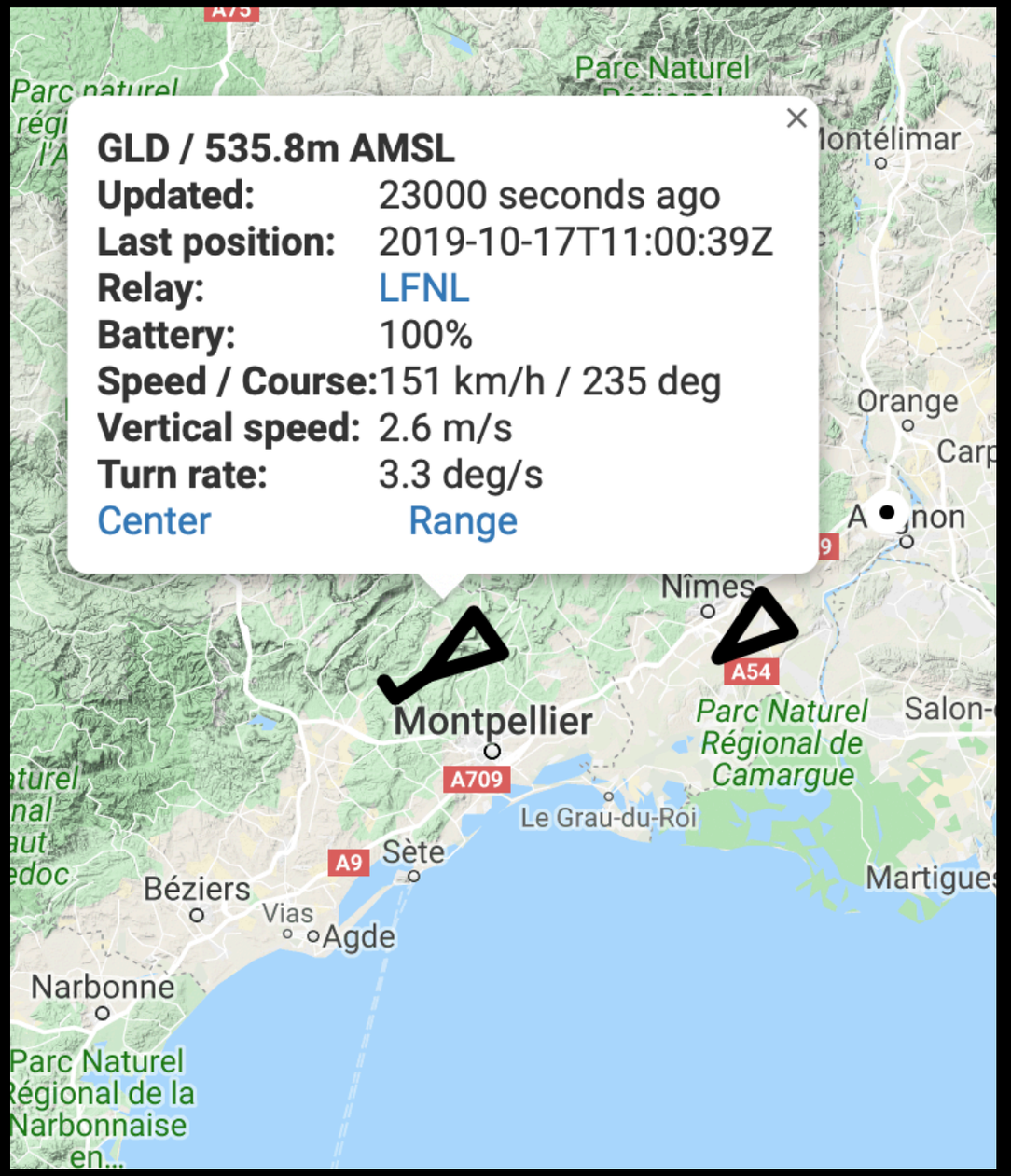
Live Contests

- Websites like livetrack24 allow live contests
- Enter list of gliders competing
- Enter task
- Get a 3D web view and second-by-second scores



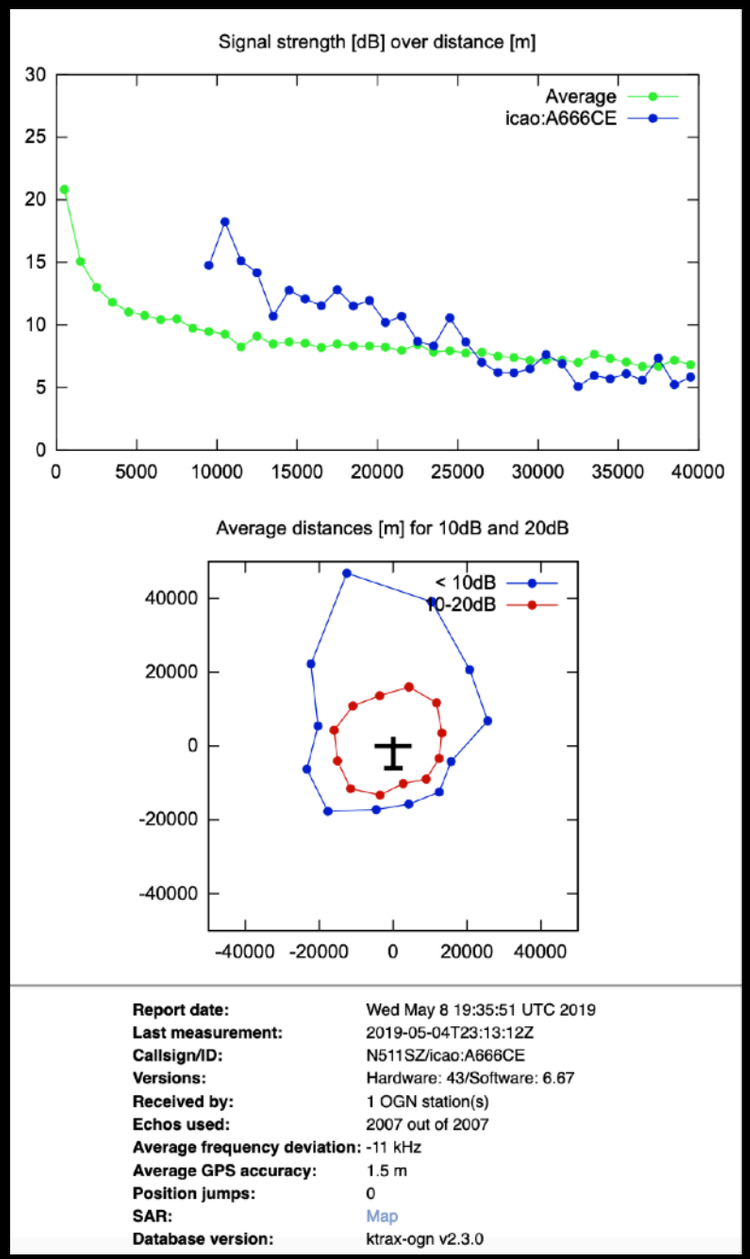
Search and Rescue

- Last-known position and direction of every glider is kept long-term for SAR purposes
- Of course, you can use the live trackers for gliders lost in the last 24 hours
- The live data may offer precious insight into accidents that we otherwise will not have



FLARM Range Analysis

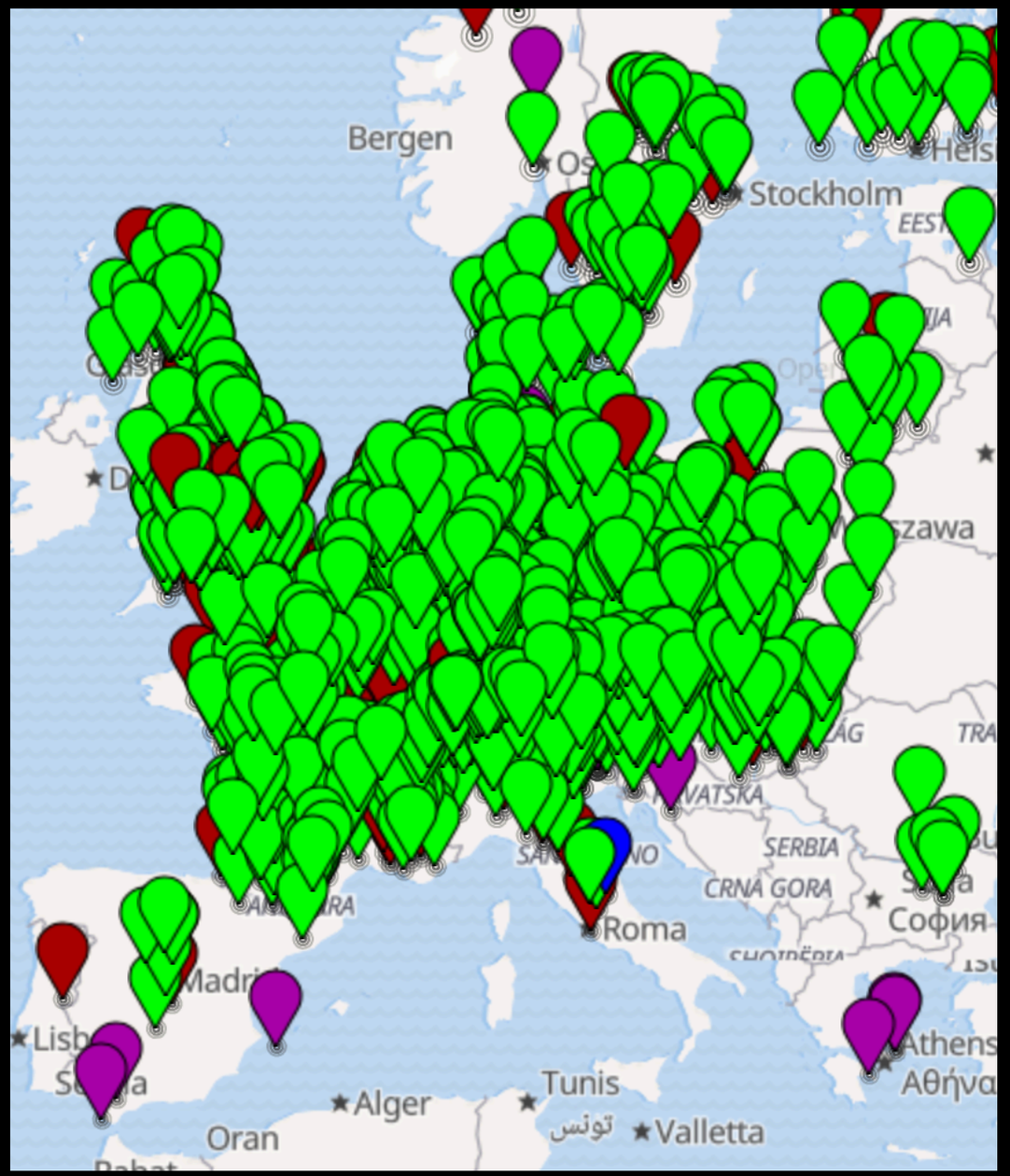
- ktrax.kisstech.ch collects statistics on signal strength per glider
- It is easy to spot gliders with poor installations
- We found Peter Deane's glider had the wrong antenna installed
- No extra effort required to get the analysis



Common Questions

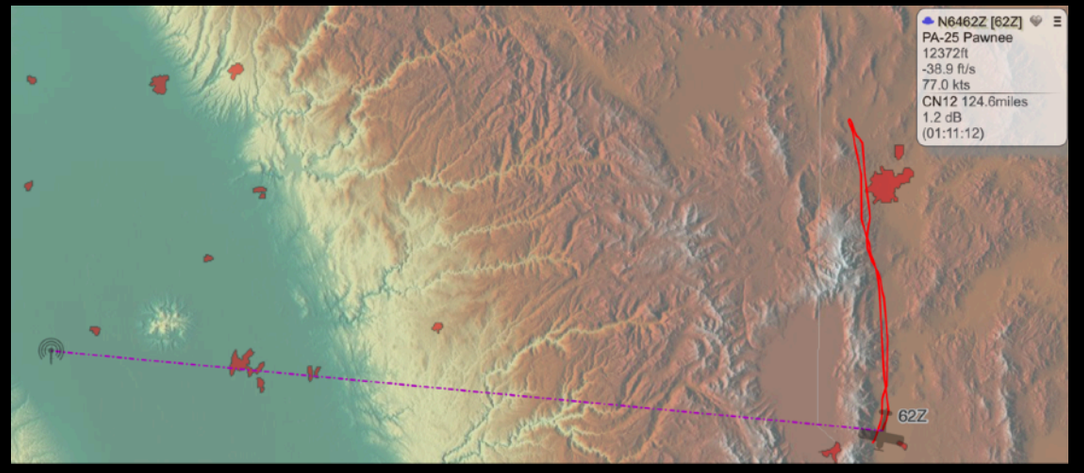
Who is Using OGN?

- Europe…heavily
- Chile
- Argentina
- South Africa
- New Zealand
- Australia
- Canada
- Pretty much any country on metric units



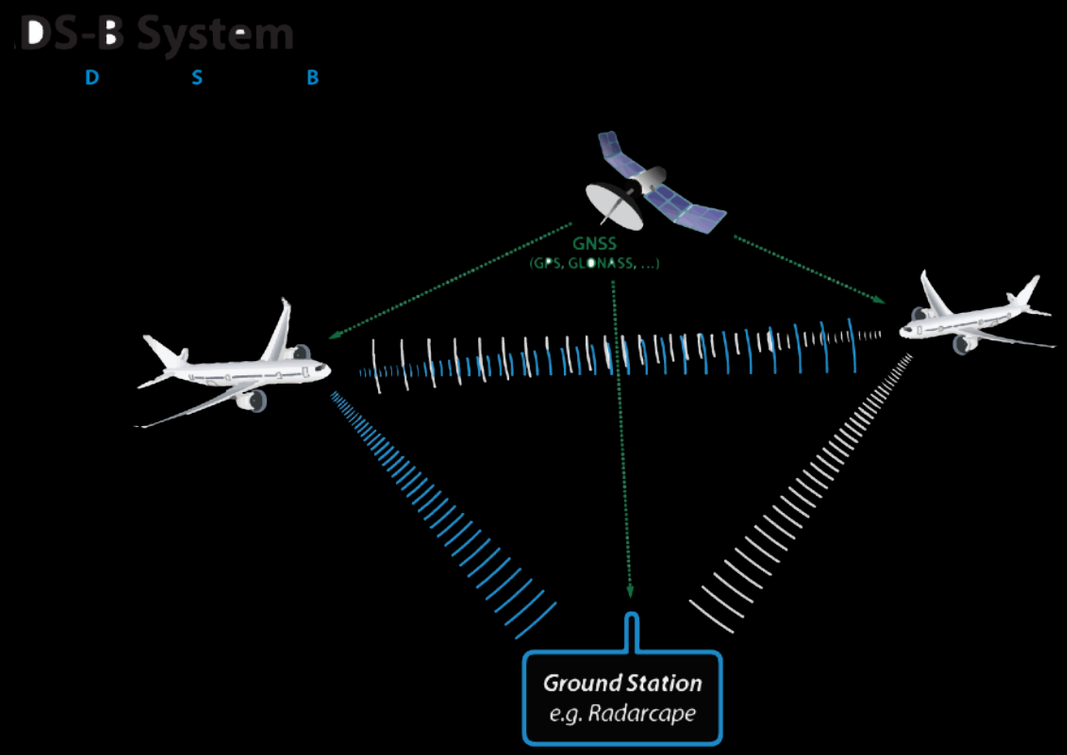
What is the Range?

- About 80 miles
  - 120 miles max (Williams to Susanville)
- Antenna provides 8x (9 dB) gain
- Limited mostly by line-of-sight



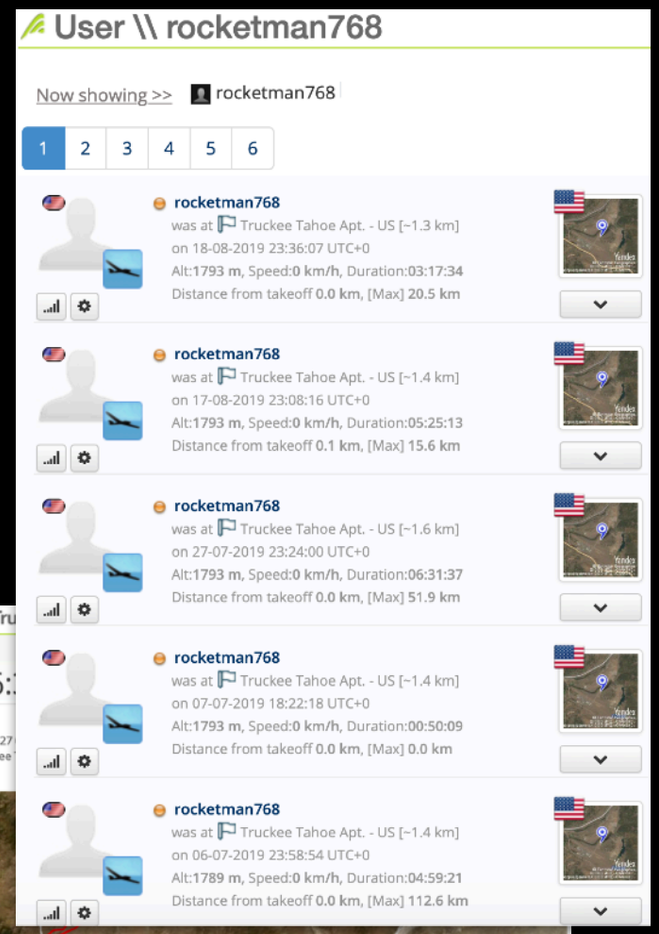
What about ADS-B?

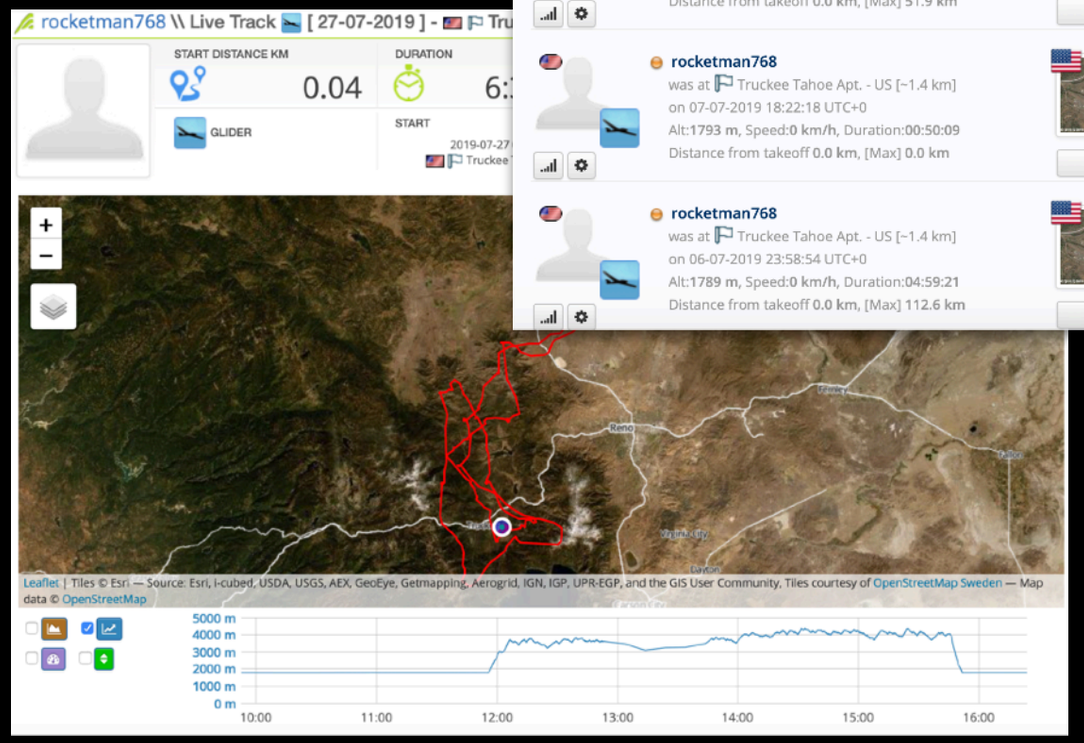
- OGN allows ADSB data to be forwarded to the network
- ADSB data is not free to access (except for research)
- FLARM will continue to be the de-facto collision avoidance for gliders
- Can always update the receiver software as necessary



Where is the Flight Data Stored?

- For privacy, full tracks are not stored publicly for more than 48 hours
- However, livetrack24 will automatically save your own tracks if you register





Is OGN Just for FLARM?

- No!
- OGN is just an internet relay for position reports of various types
- It can currently carry:
  - FLARM
  - ADS-B
  - Inreach
  - Spot
  - Naviter
  - Skylines
- But support for these is not 100% yet

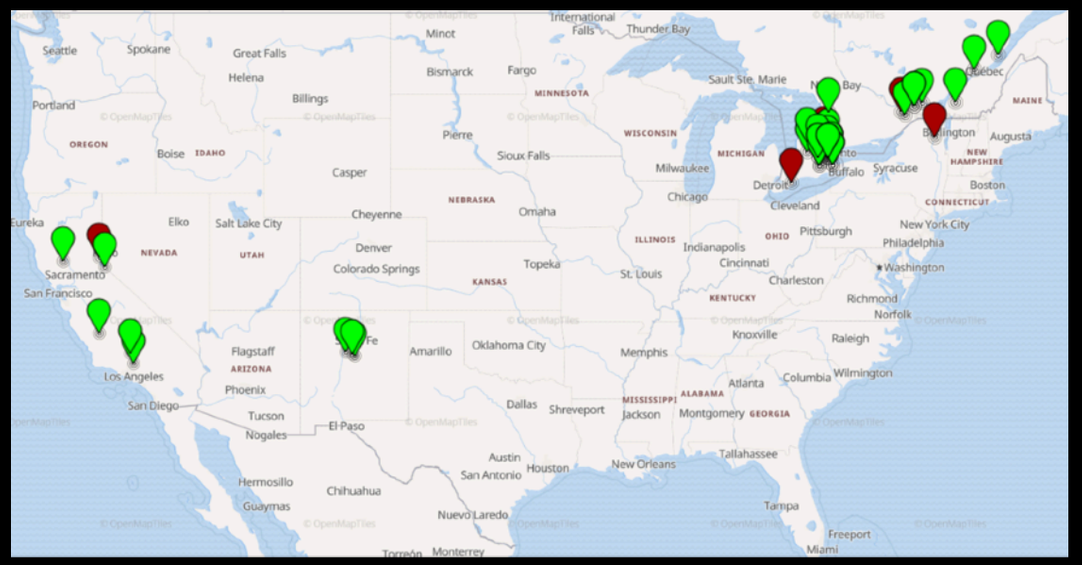
Region 11 Status

Growth

- Prior to this year, only 3 receivers in the US near Moriarty

- PASCO provided funding for R11 coverage

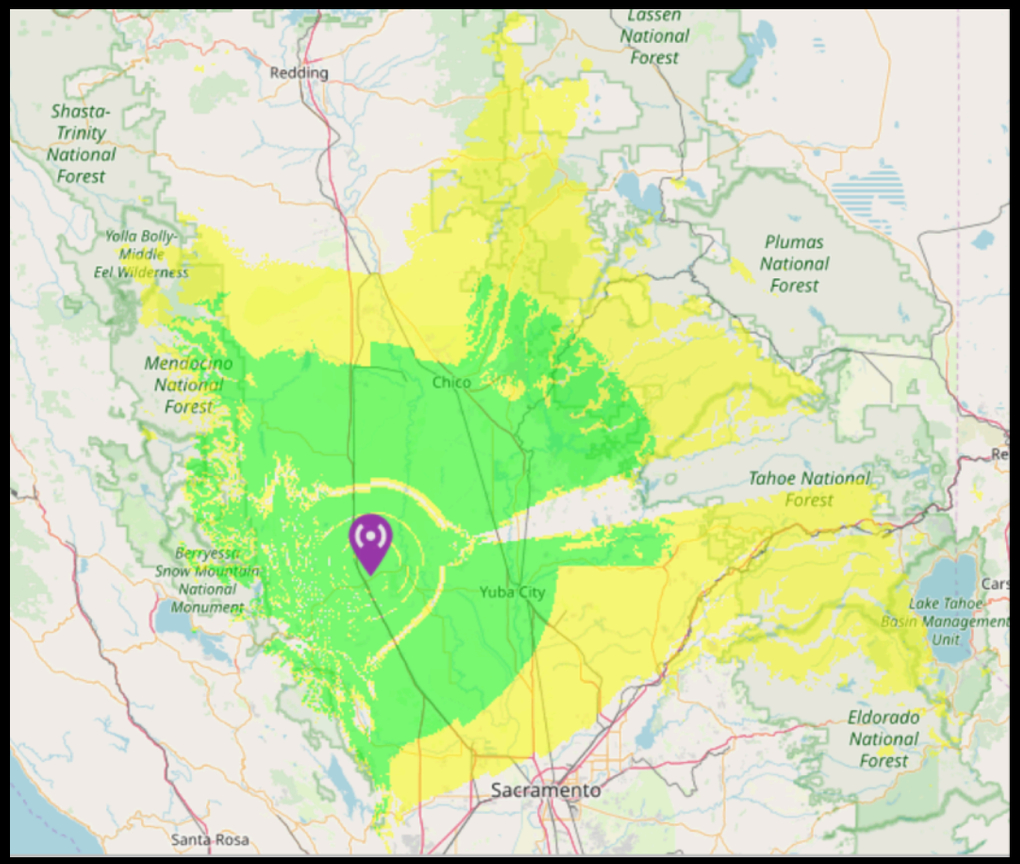
- We have tripled the receivers this year and have increased area covered by about 900%

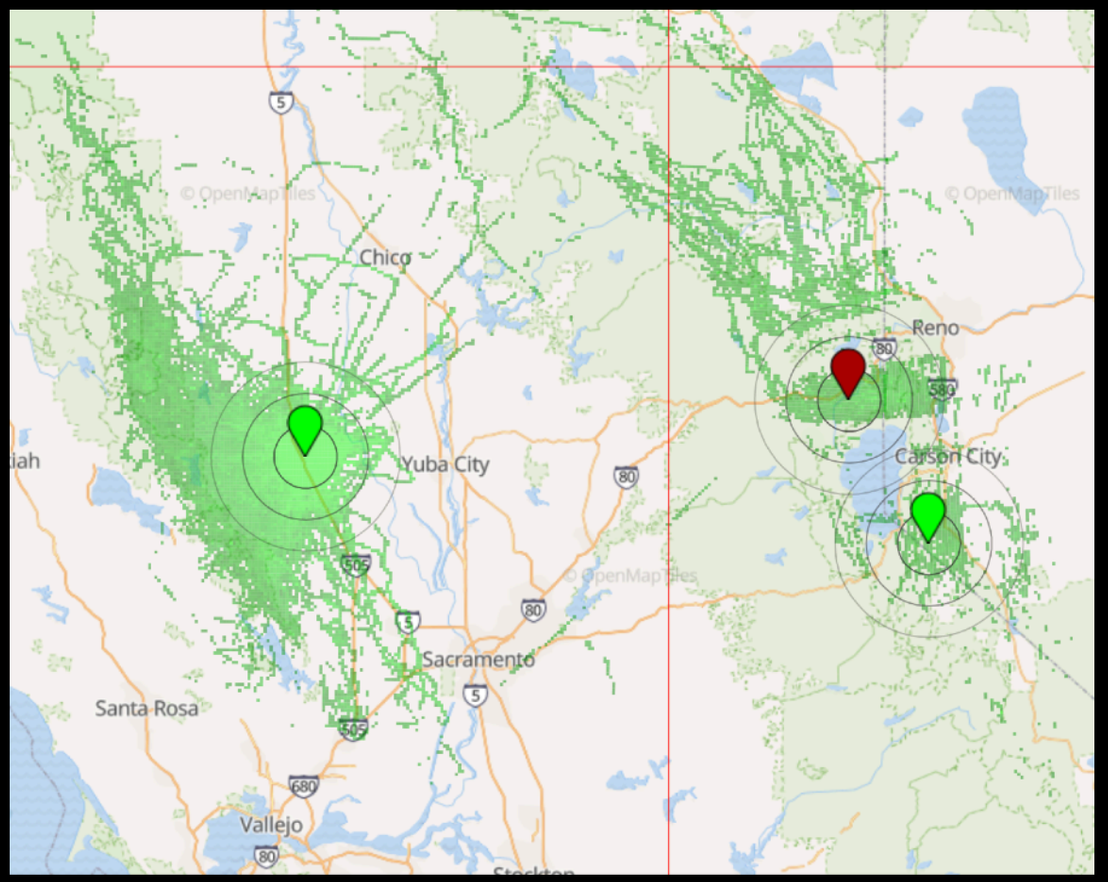


Williams

- First receiver installed by Noelle Mayes last year
- Huge thanks to her and the Mayes’ for believing it could work

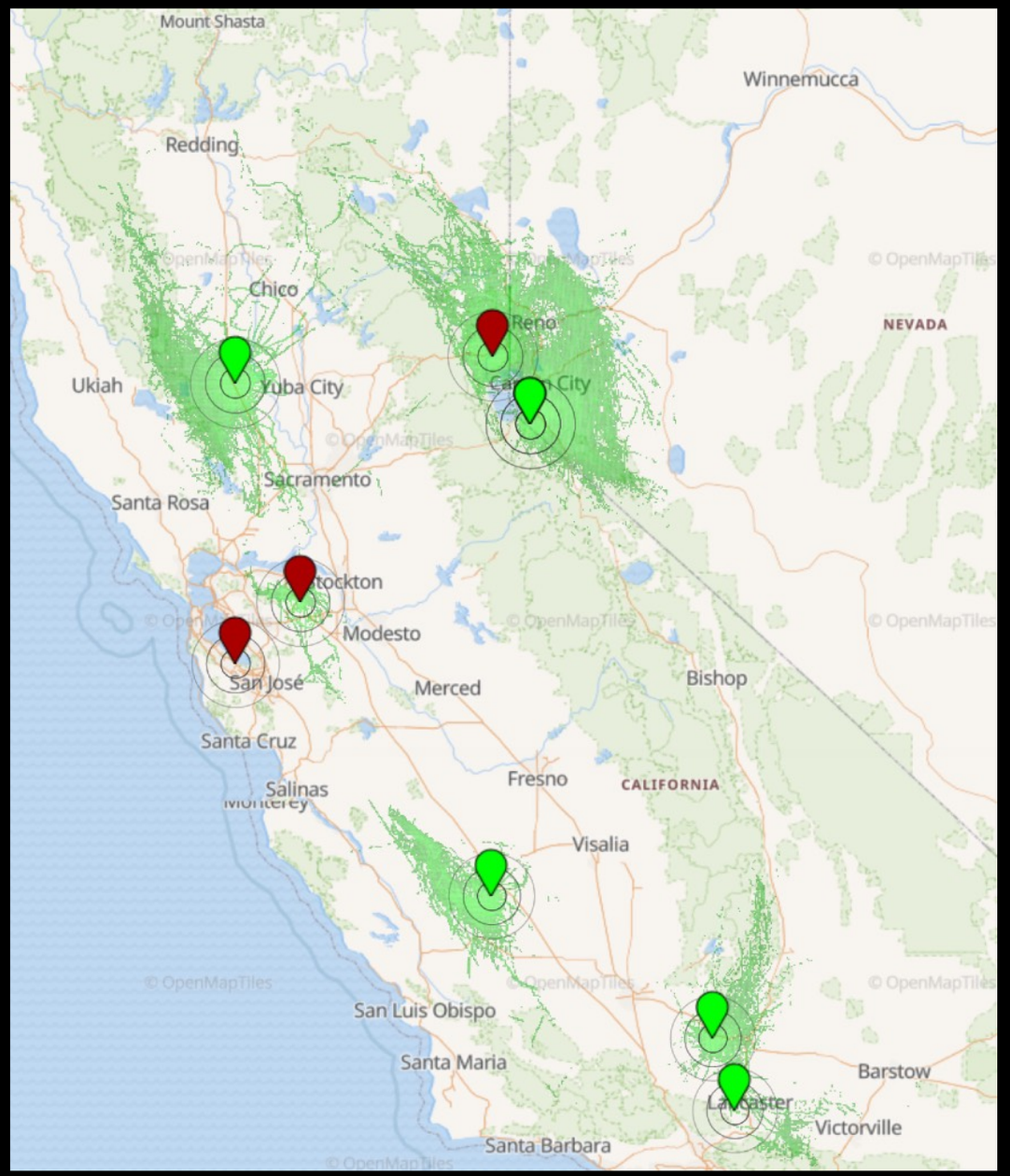
Williams Coverage





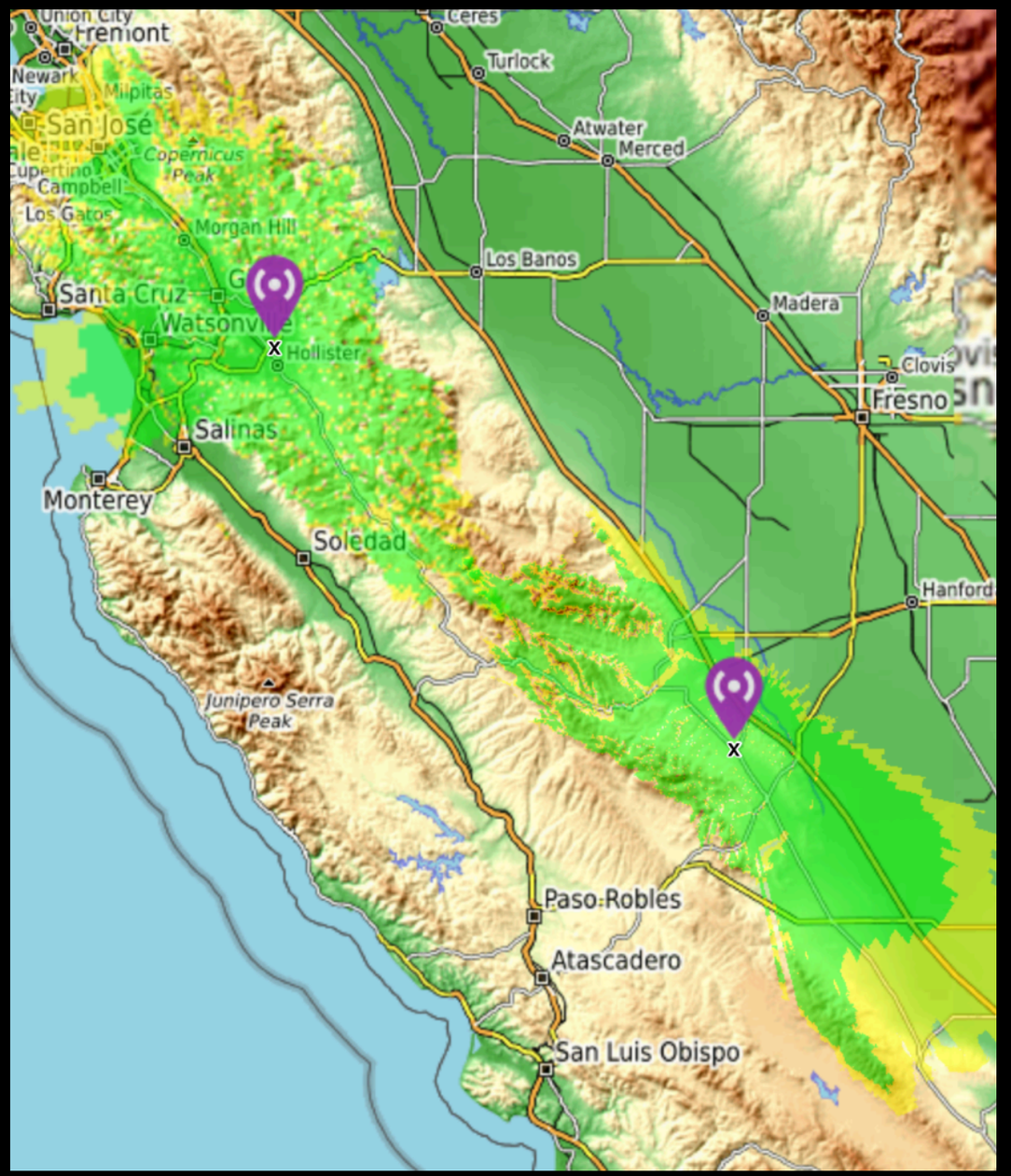
CA/NV Total Coverage

- Truckee: Mike Mayo
- Minden: Jennifer Ware / Jim Herd
- Avenal: CCSC
- Tehachapi: Jim Staniforth
- Palmdale: Britton Bluedorn



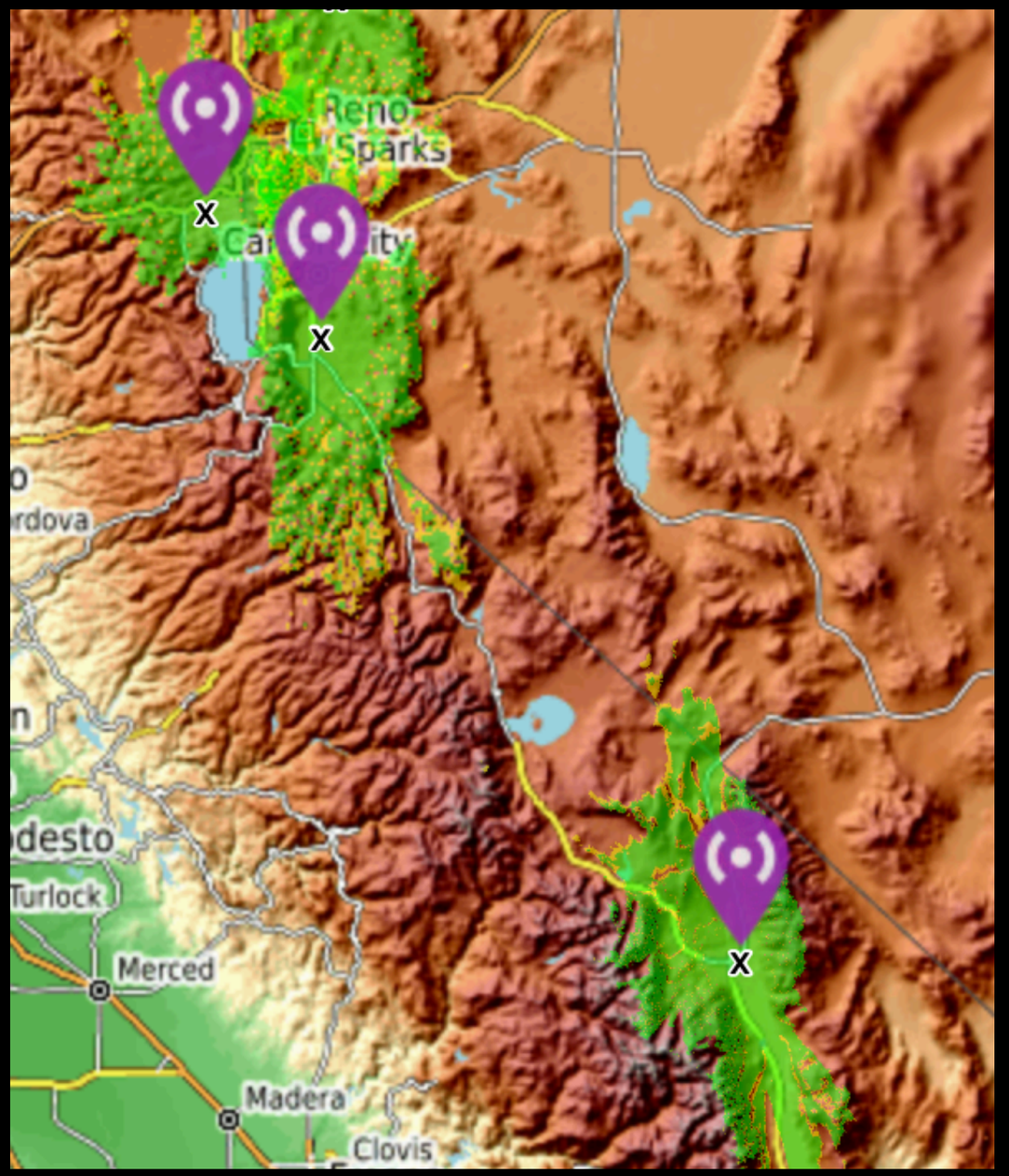
Planned: Hollister

- One is built and ready to be installed at Hollister
- I need a volunteer to install it
- Could also be nearby at someone's home
- Would complete coverage of the "milk run" to Black Mt.



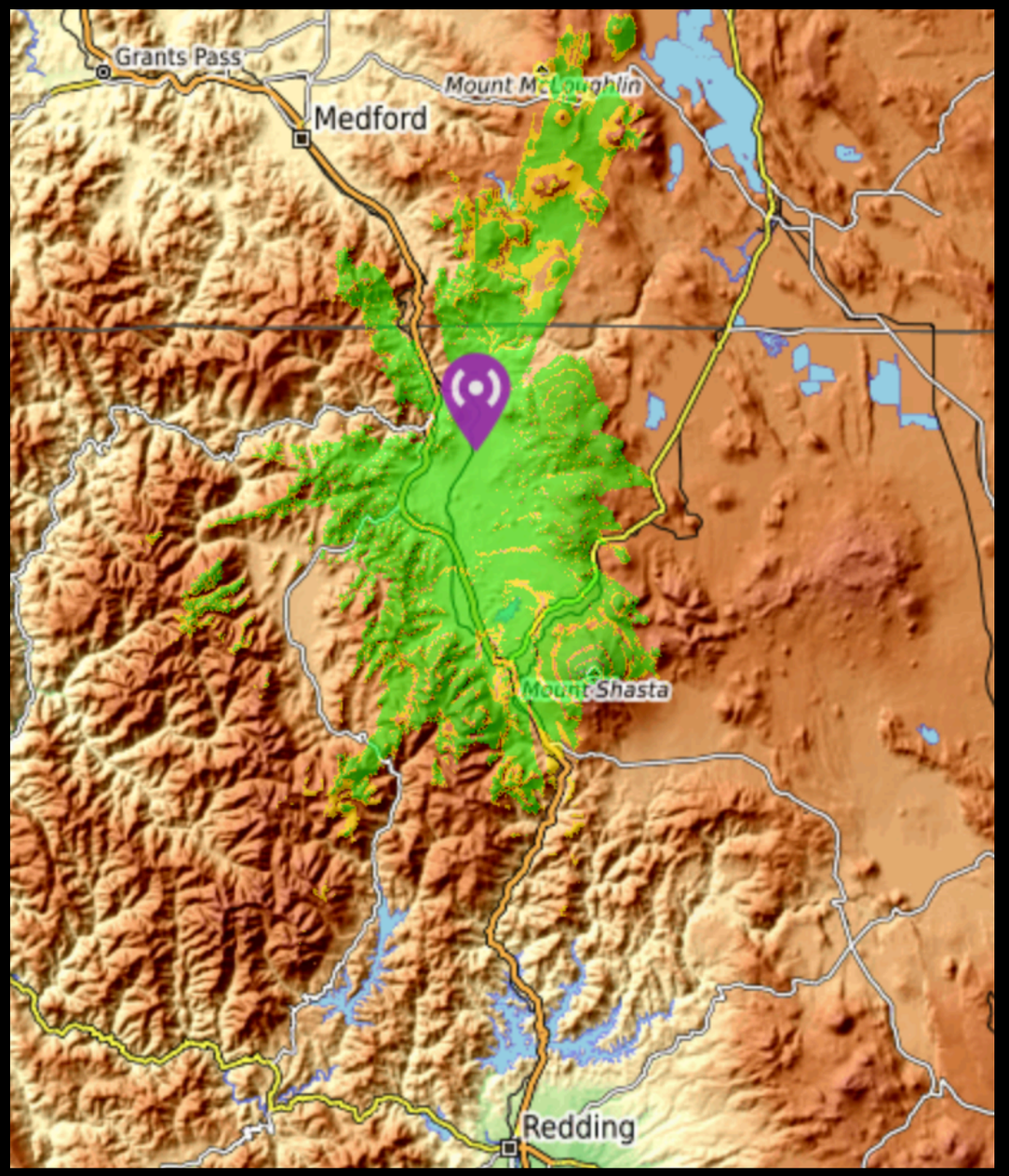
Planned: Bishop

- I have built one for Bishop
- Need a volunteer to install it
- Would span the gap from the Tehachapi receiver up to Mono Lake



Planned: Siskiyou

- Would give coverage near Oregon border
- Noelle Mayes offered to install this one
- I’m just lazy and need to drive the receiver to Williams

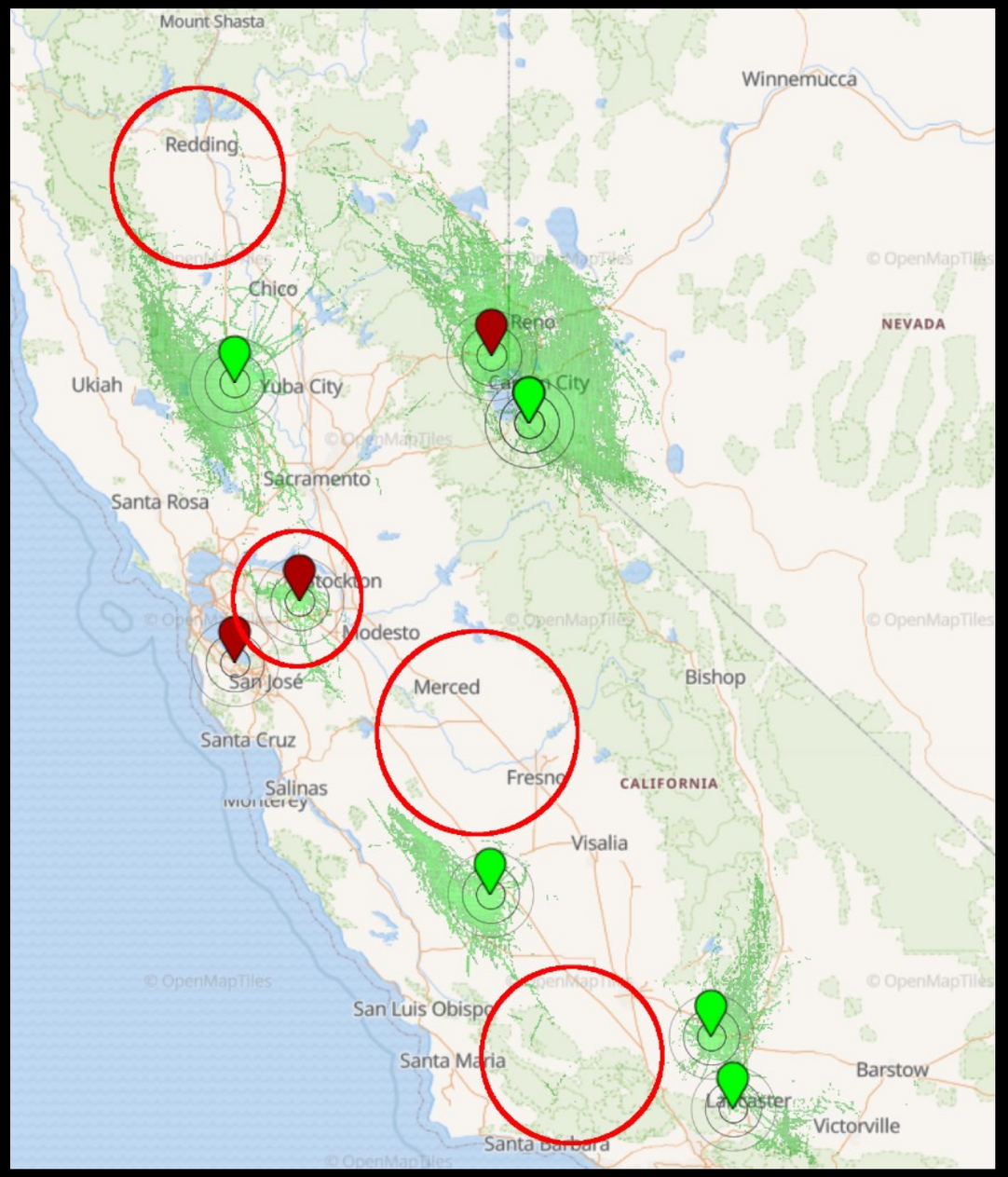


Air Sailing

- I sent one this year to cover that valley
- Stopped getting email responses
- Need somebody to go up there and find/install it

Wish List

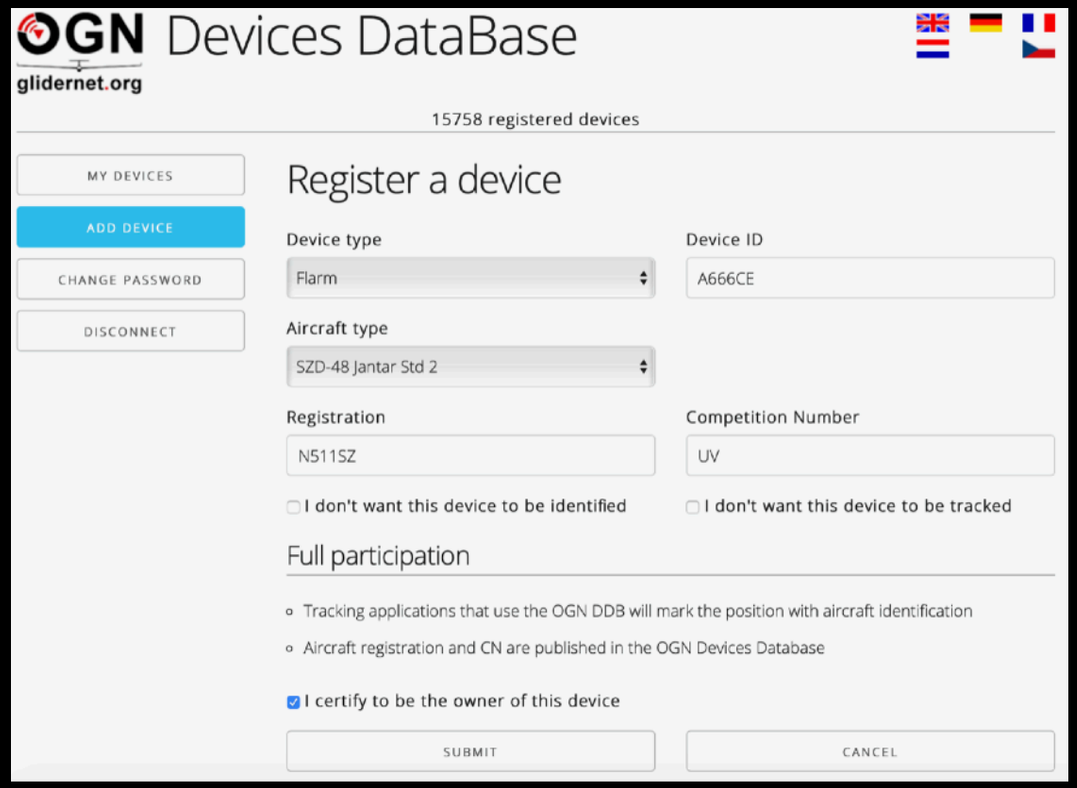
- We want to see coverage in these areas
- Need volunteers who could build/install/host here
- PASCO has enough funds remaining to build these
- This would cover nearly all of us the vast majority of the time



I Need Your Help

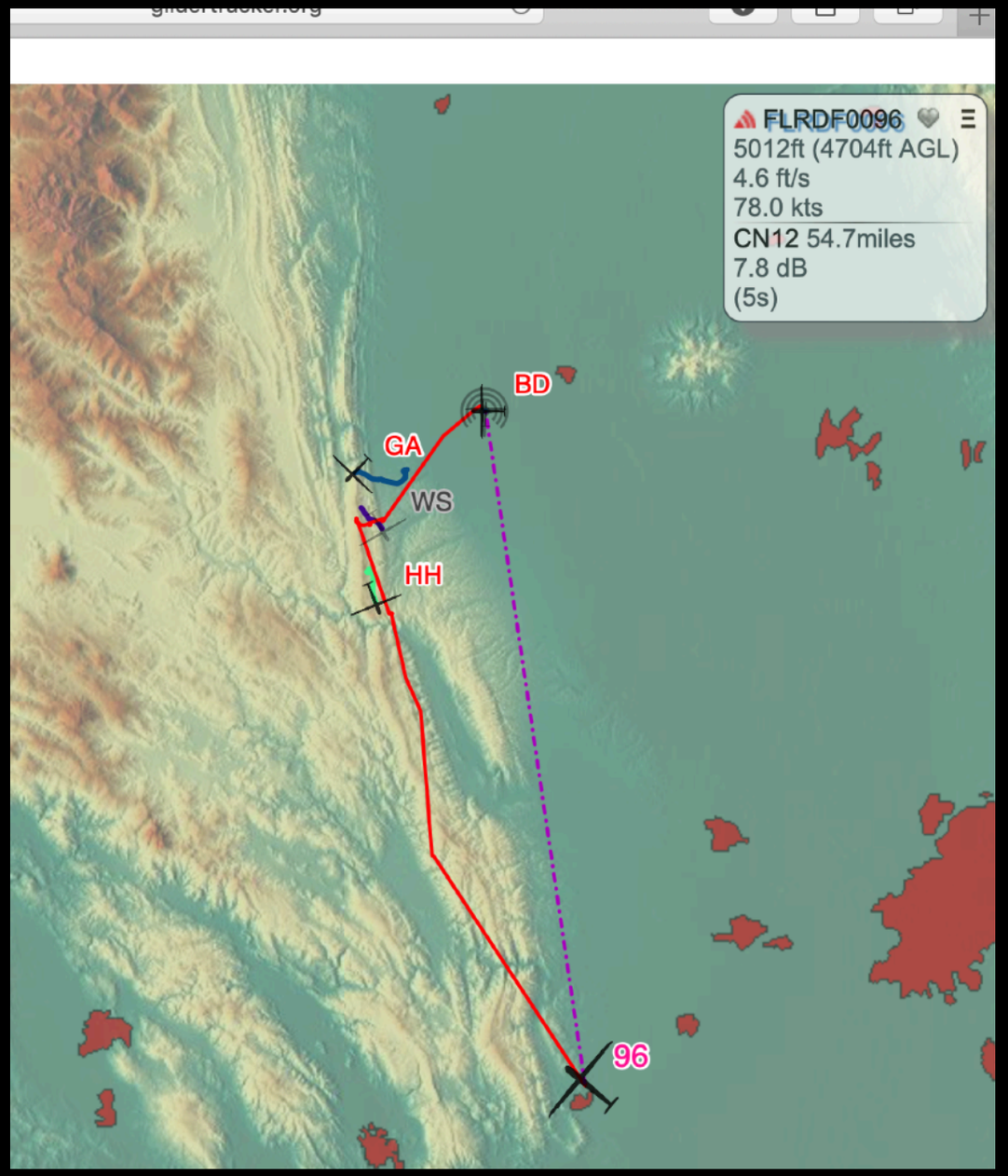
Get Involved: Register

- ddb.glidernet.org
- If you already have FLARM, it takes 30 seconds to register it with the OGN database
- Works like flarmnet, just more generic
- Can also add ADSB id and other ids that identify your aircraft



Get Involved: Display glidertracker at your gliderport

- Put up a computer monitor or old TV
- Hook it up to a chromecast or something and open glidertracker.org
- More eyes on the situation is more fun and also safer for everyone



Get Involved: Set up A Live Contest

Get Involved: Build a Receiver

- pglee@pm.me
- wiki.glidernet.org
- I can give you a parts list
- About $100-$200 depending on how much you want to DIY
- PASCO can cover the cost if we coordinate and approve
- Open-source stuff with vibrant community and documentation. Don’t be scared to try.

Get Involved: Write Software

- openglidernetwork@googlegroups.com
- https://github.com/glidernet

- Easy-to-use Python API to drink from the firehose of glider positions
- Need some more simple and modern tools that make the data useful

Questions?