

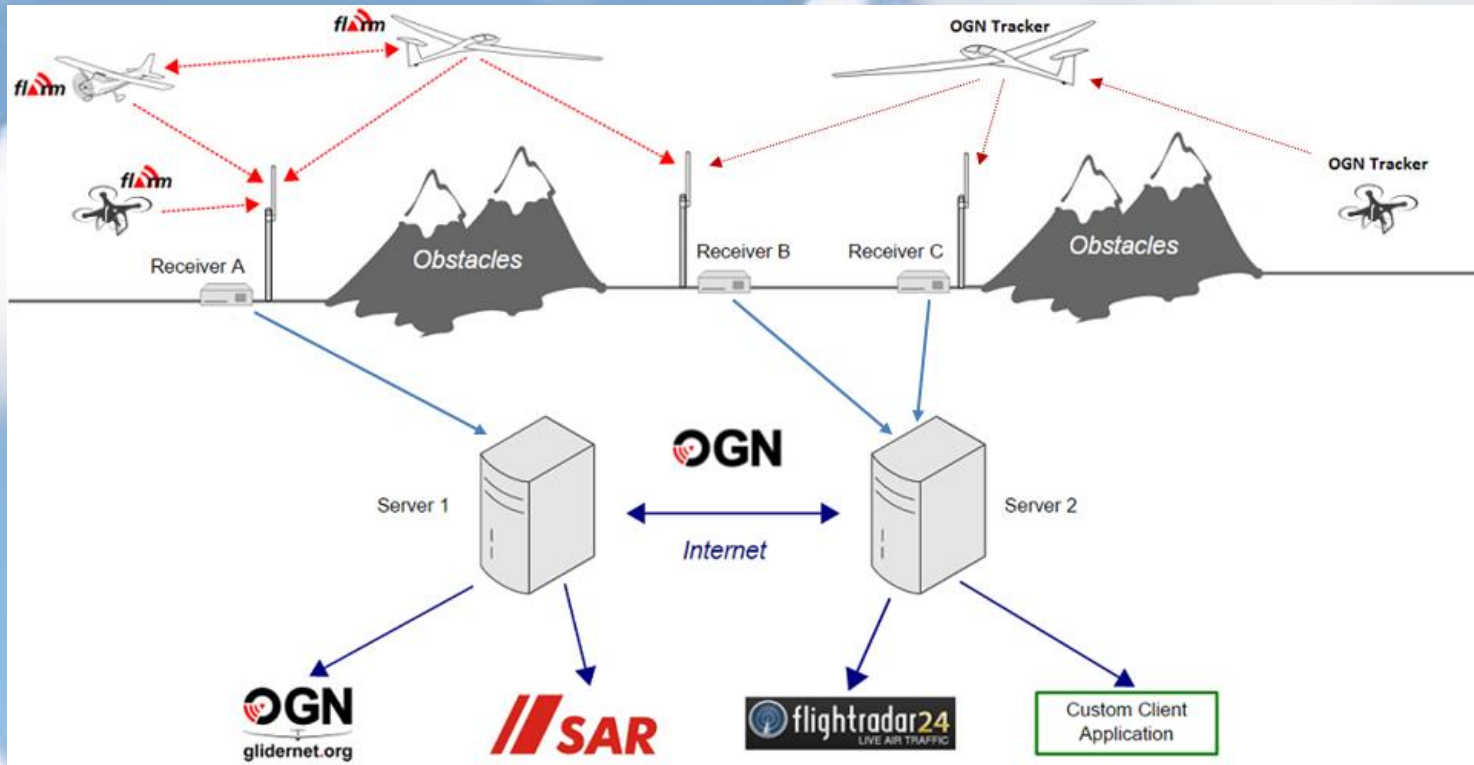
Open Glider Network (OGN)

John DeRosa

Presented at ChicagoLand Glider Council – January 20, 2019

<http://aviation.derosaweb.net/presentations>

jhderosa@yahoo.com



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Updated: December 19, 2021

PLEASE NOTE

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Thank you, John OHM Ω

What is the Open Glider Network?

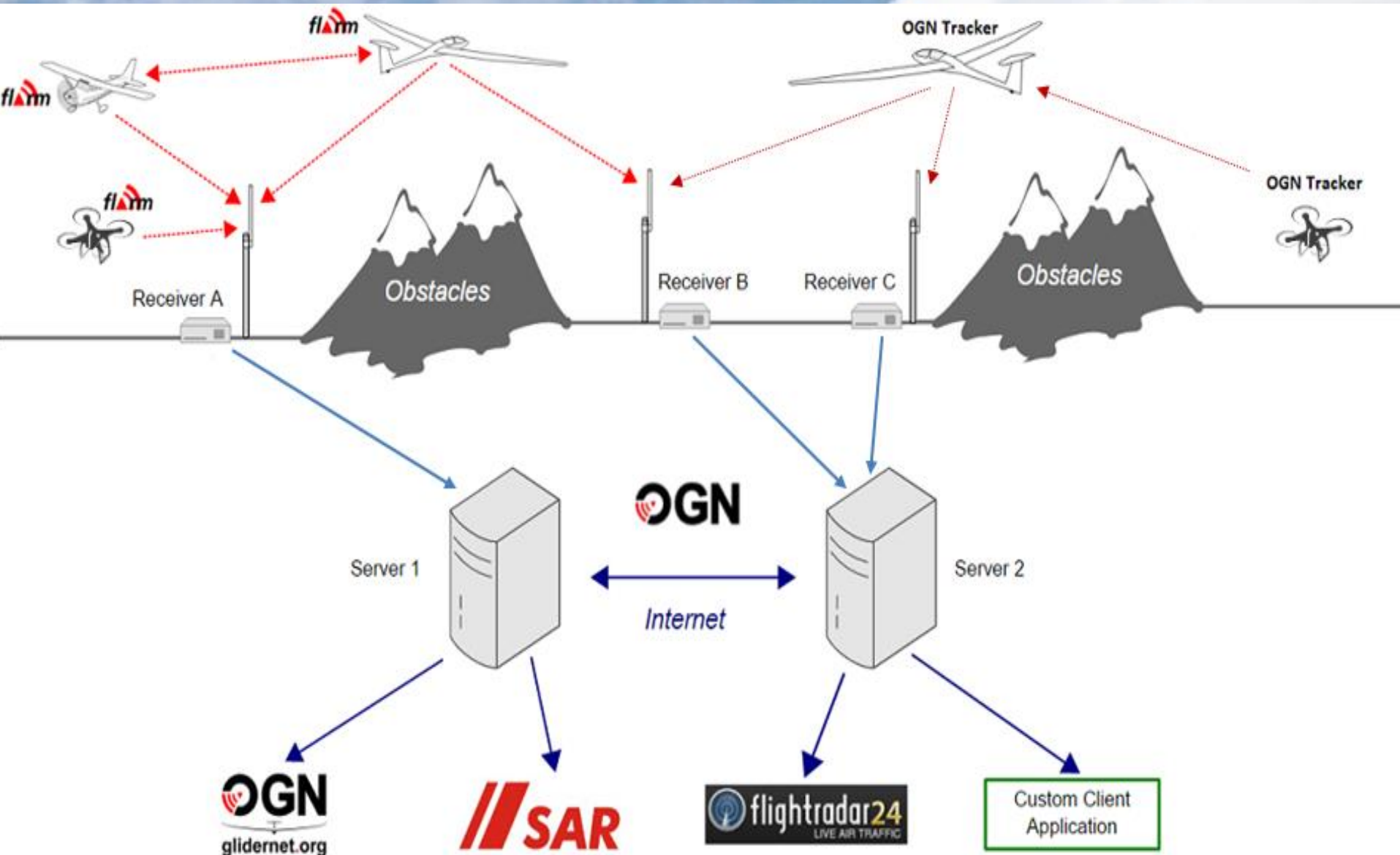
From <http://glidernet.org>

The objective of the Open Glider Network is to create and maintain a unified tracking platform for gliders, drones and other aircraft.

Focused on tracking aircraft equipped with FLARM and OGN trackers, OGN is also open for integration of other flying objects tracking data sources.

You can see beacons from FLARM PilotAware, SPOT, Garmin InReach, Skymaster, FANET (paragliders) and Spidertracks circulating through our network. The tracking data is freely available.

Open Glider Network



Why Have OGN?

(From Region 12 Report)

Creation of this OGN network will enhance the visibility and safety of soaring in Region 11. OGN receiver stations provide not only real time position reports and flight tracks of FLARM equipped gliders to computers and mobile devices with internet connections, but also provide real time data that could support search and retrieve/rescue operations.

If you are not familiar with the OGN network log into glidertracker.org and you will see all aircraft that have registered and transmitting FLARM devices. You will note heavy application of this technology in Europe and PASCO is actively supporting its introduction in our region.

Why Have OGN?

(From <http://glidernet.org>)

- Today FLARM is mainly utilized in gliders, however other small aircraft (planes, helicopters, deltas, para-gliders or even drones) are more and more often equipped with it, especially if operating in the areas intensively used by gliders, such as the Alps.
- Contrary to FLARM, OGN proposes an open transmission protocol and has an ambition to influence a standard for the tracking and surveillance.
- The OGN is a community project. It is based on software, hardware, receivers and other contributions from individuals and the open source community.

Why Have OGN?

(From <http://glidernet.org>)

- APRS linux based servers that receive and forward data. Data includes device location information, status of receivers, status of tracking devices (OGN trackers) and the status of the OGN APRS network itself.
- A device database (aircraft). Register your aircraft/drone with tracking device in the OGN device database here if you wish to influence the way how it's going to be visible in the system (anonymous vs recognized).
- OGN ground receivers, located at airfields, gliding clubs, summits of mountains or at private houses of our community members. They listen and decode radio beacons from aircraft in their vicinity and send position reports via network to the APRS servers.
- Software for Linux that can be installed on a PC or small mini-board computers (such as the Raspberry Pi, Cubieboard2, Odroid U3, etc.). It drives a USB DVB-T radio receiver and listens for, decodes, sends the position reports and participates in the OGN network.
- Websites and applications that can use and display the data. The most obvious use is to track aircraft on a moving map in real time, another use would be search and rescue (SAR), automatic flight logs, etc.

Open Glider Network

List of Countries Having OGN Receivers

Argentina	Italy
Australia	Lithuania
Austria	Namibia
Belgium	Netherlands
Canada	New Zealand
Chile	Norway
Czech Republic	Poland
Denmark	Romania
Estonia	Russia
Finland	Slovakia
France	Slovenia
Germany	South-Africa
Hungary	Spain
Iceland	Sweden
India	Switzerland
Indonesia	United States
Israel	United Kingdom

<http://wiki.glidernet.org/list-of-receivers>

Open Glider Network

OGN Receiver Quantities in Selected Countries

Germany – 281

France – 196

United Kingdom - 166

France – 85

Switzerland – 91

Netherlands – 43

Australia – 39

Italy – 31

Chile – 23

South Africa – 15

Canada – 8

Namibia - 6

United States – 6

<http://wiki.glidernet.org/list-of-receivers>

Open Glider Network

OGN Receivers in the United States

No.	APRS name	Description	Photo	Status	Contact
	AIRFIELDS				
1.	0E0	Moriarty Municipal Airport, New Mexico		 Last heartbeat 2021-12-19 19:23Z	Mark Hawkins
2.	10R3	Portland, Oregon		 Last heartbeat 2021-12-19 19:22Z	Caz Yokoyama
3.	ABQNM	Albuquerque, New Mexico		 Last heartbeat 2021-12-19 19:22Z	Mike A
4.	AntlpVly	Palmdale, California		 Last heartbeat 2021-12-19 19:20Z	Walter Rogers
5.	C83	Receiver located at Northern California Soaring Assoc. , Byron, California		 Last heartbeat 2021-12-19 19:21Z	
6.	CA69	Receiver located at Avenal, California		 Last heartbeat 2021-12-19 19:20Z	Philip Lee
7.	CasaGrand	Casa Grande, Arizona		 Last heartbeat 2021-12-19 19:20Z	Davis Chappins
8.	CN12	Receiver located at Williams Soaring , Williams, California	Webcam	 Last heartbeat 2021-12-19 19:23Z	Philip Lee
9.	CO15	Black Forest Soaring Society, Elbert, Colorado		 Down since 2021-11-06 17:01Z	John Gillis
10.	E68	Estrella Sailport, Arizona		 Last heartbeat 2021-12-19 19:24Z	Davis Chappins
11.	E77	San Manuel Airport, Arizona		 Last heartbeat 2021-12-19 19:20Z	Davis Chappins
12.	Edgewood	Edgewood, New Mexico		 Last heartbeat 2021-12-19 19:22Z	Mark Hawkins
13.	ElTiro	El Tiro Gliderport, Arizona		 Last heartbeat 2021-12-19 19:23Z	Danny Sorenson
14.	GHSA	Greater Houston Soaring Association, Texas		 Last heartbeat 2021-12-19 19:20Z	Stefan Murry

Open Glider Network

OGN Receivers in the United States

15.	Gilroy	Receiver located at Gilroy, California	 Last heartbeat 2021-12-19 19:21Z	Philip Lee
16.	KL94	Tehachapi, California	 Last heartbeat 2021-12-19 19:23Z	Jim Staniforth
17.	KTRK	Receiver located at Truckee Tahoe Soaring Assoc. , Truckee, California	 Down since 2021-09-26 17:34Z	Philip Lee
18.	LKPlacid	OGN receiver at ADK FBO during wave camps	 NOT FOUND in the DB	Dan
19.	Minden	Receiver located at Minden, Nevada	 Down since 2021-11-28 08:58Z	Philip Lee
20.	Minooka	Chicago Glider Club Gliderport (IL59) in Minooka, IL	 Last heartbeat 2021-12-19 19:23Z	Tomasz Sielicki
21.	NWTucson	Tucson, Arizona	 Last heartbeat 2021-12-19 19:18Z	Danny Sorenson
22.	Reno	Receiver located at Reno, Nevada	 Down since 2021-07-06 15:27Z	James D'Andrea
23.	RidgeCrst	Ridgecrest, California	 Last heartbeat 2021-12-19 19:20Z	Tom Serkowski
24.	SCOH	Soaring Club of Houston, Texas	 Last heartbeat 2021-12-19 19:20Z	Ken
25.	Tijeras	Tijeras, New Mexico	 Down since 2021-08-04 23:49Z	Dan Mockler
26.	TucsonSE	Corona De Tucson, Arizona	 Down since 2021-12-04 23:08Z	Davis Chappins
27.	TX23	Briggs, Texas	 Down since 2021-06-23 20:43Z	Charley Hill

<http://wiki.glidernet.org/list-of-receivers#toc34>

Receiver Drill Down – North America

(via <http://glidertracker.org>)

Open Glider Network Range

CNC3A

Goto

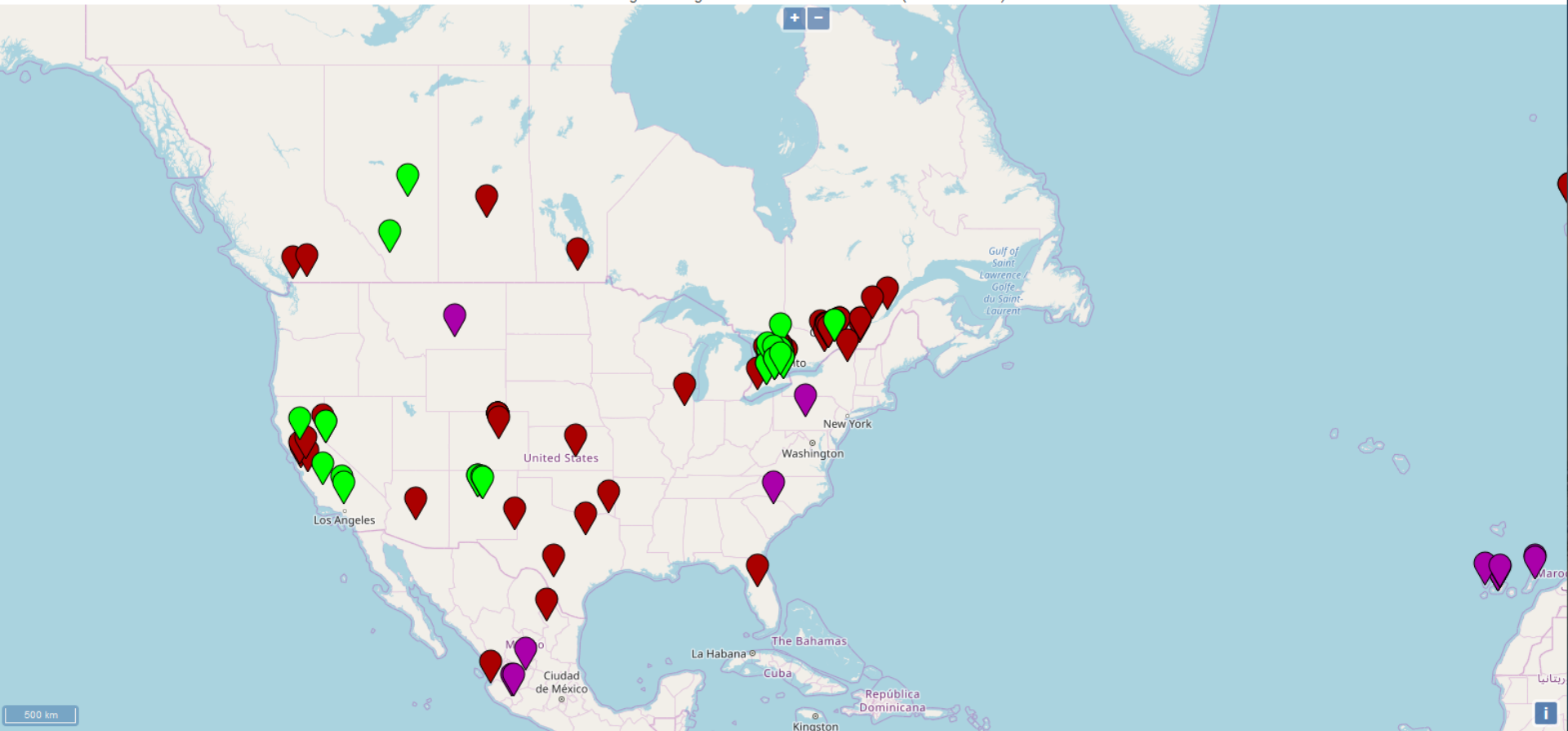
Show All

When ▾

What ▾

Options ▾

Maximum Signal Strength - CNC3A - Since 31/03/2015 (V6 Air Protocol)



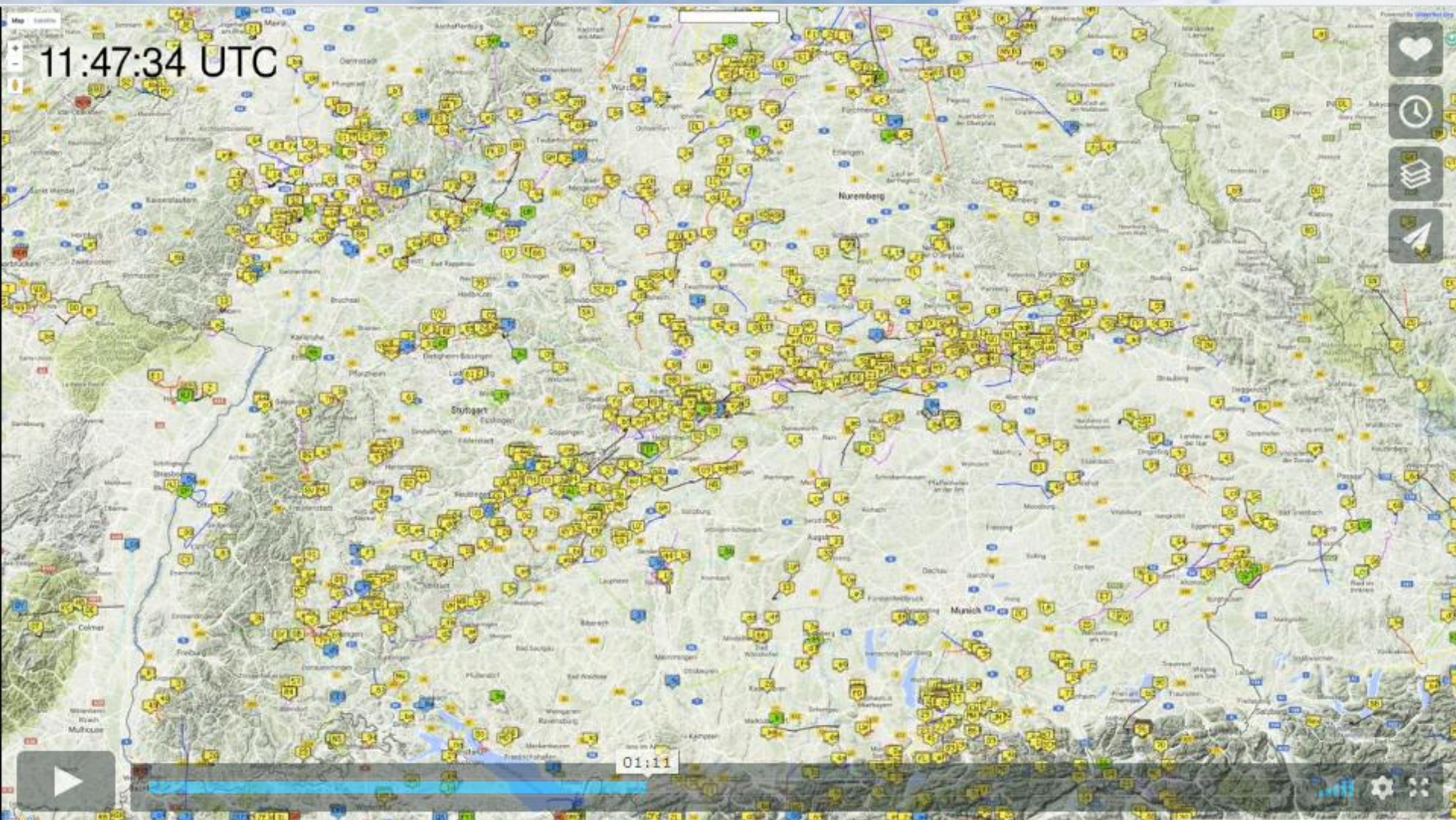
Data from the Open Glider Network
Credits

Blue icons represent UP old stations, Mauve ones DOWN
Green is 0.2.1 or above and UP, Red is DOWN new stations

Online OGN Receiver Viewing

- Live Web Pages
 - <http://live.glidernet.org>
 - <http://glidertracker.org>
 - <https://www.gliderradar.com/>
 - <https://www.navplan.ch>
- For Android
 - APRSDroid can be easily configured and used with OGN
 - OGN viewer Live App for OGN
 - Live viewer Live App by XCguide used by the paragliders folks
- PC software - XAstir program can be used to connect directly to one of the OGN servers and visualize APRS messages

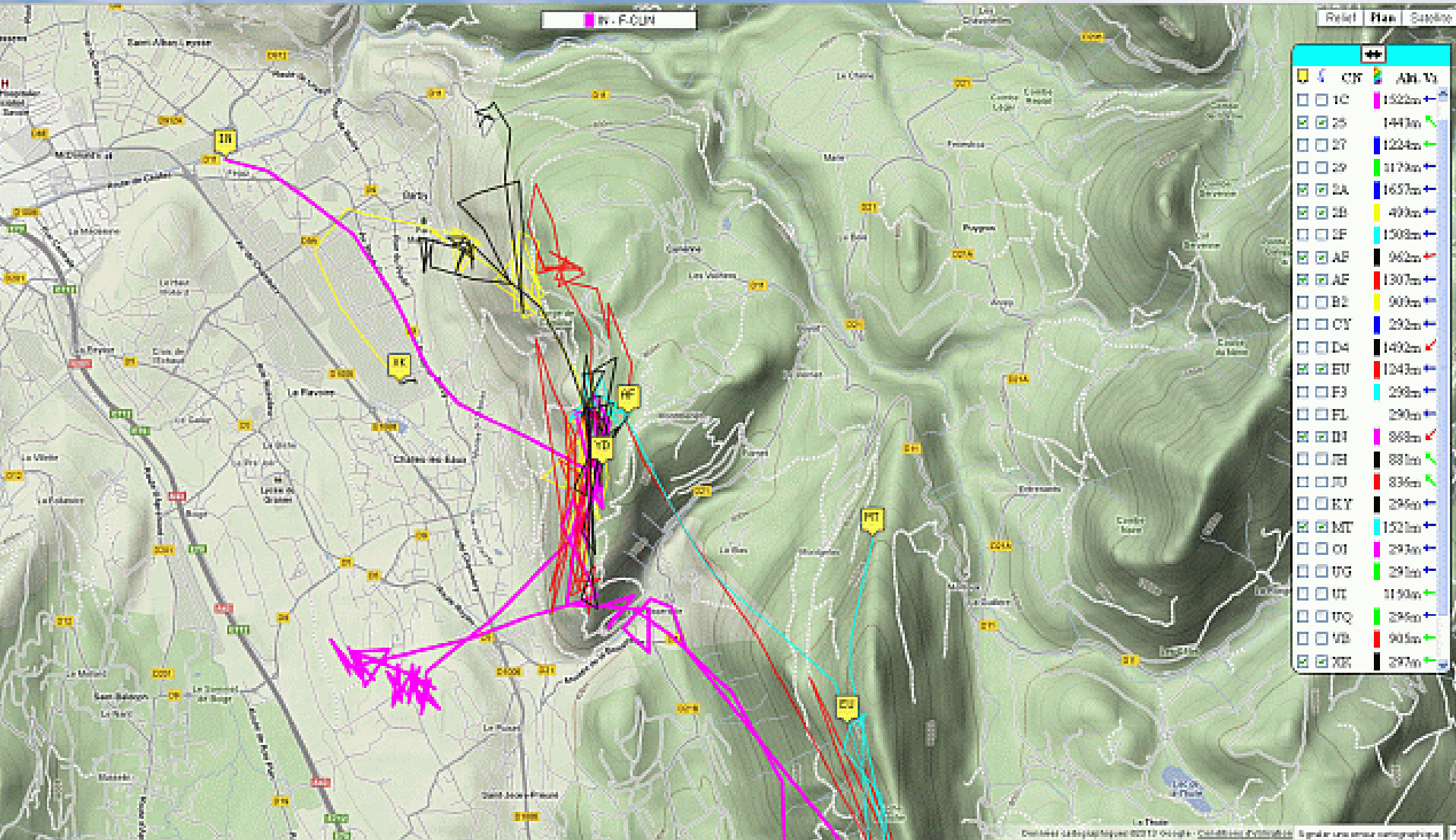
OGN The Movie – A Sunday in Germany



<https://vimeo.com/224374017>

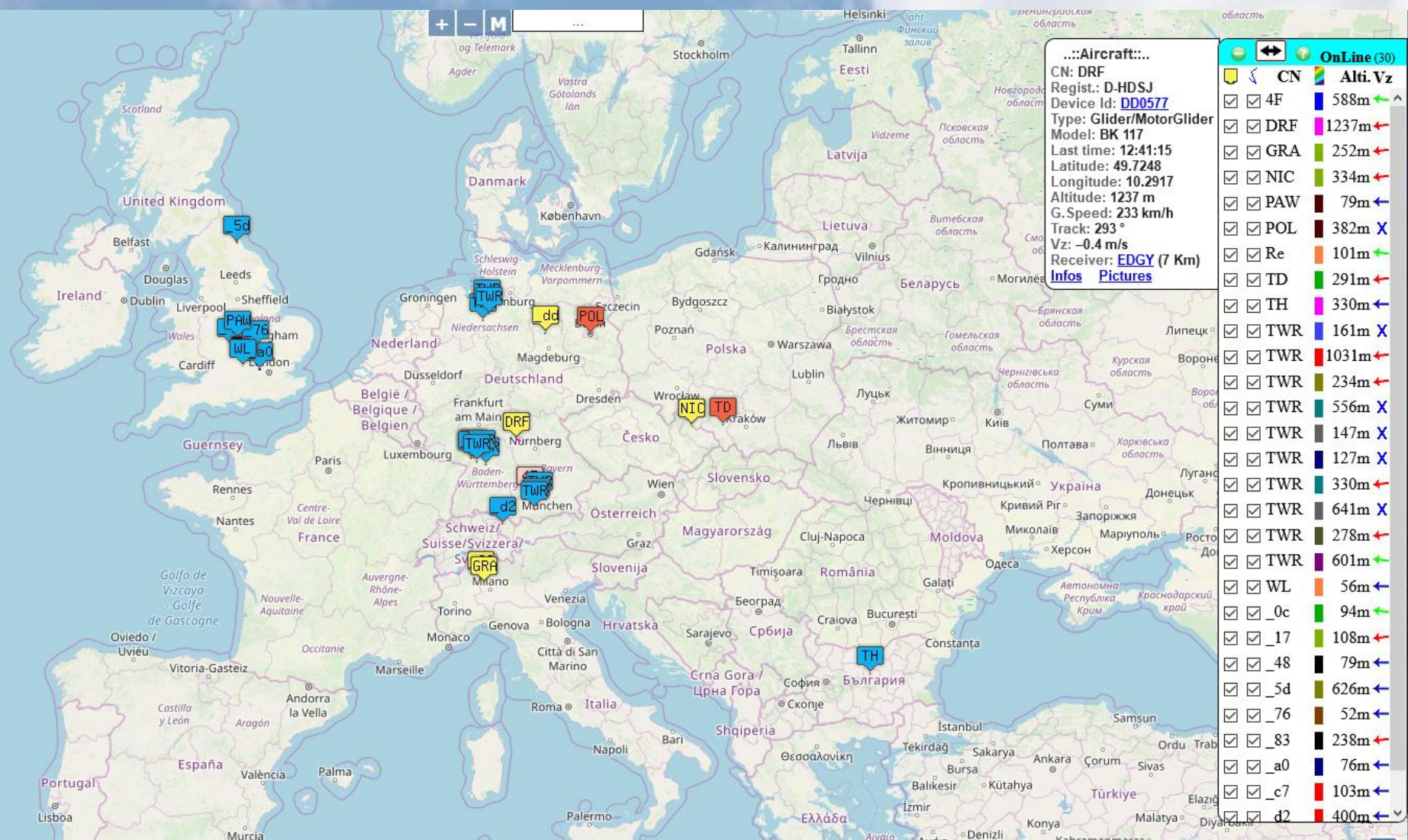
Open Glider Network (OGN) – Historic Data

From <http://live.glidernet.org>



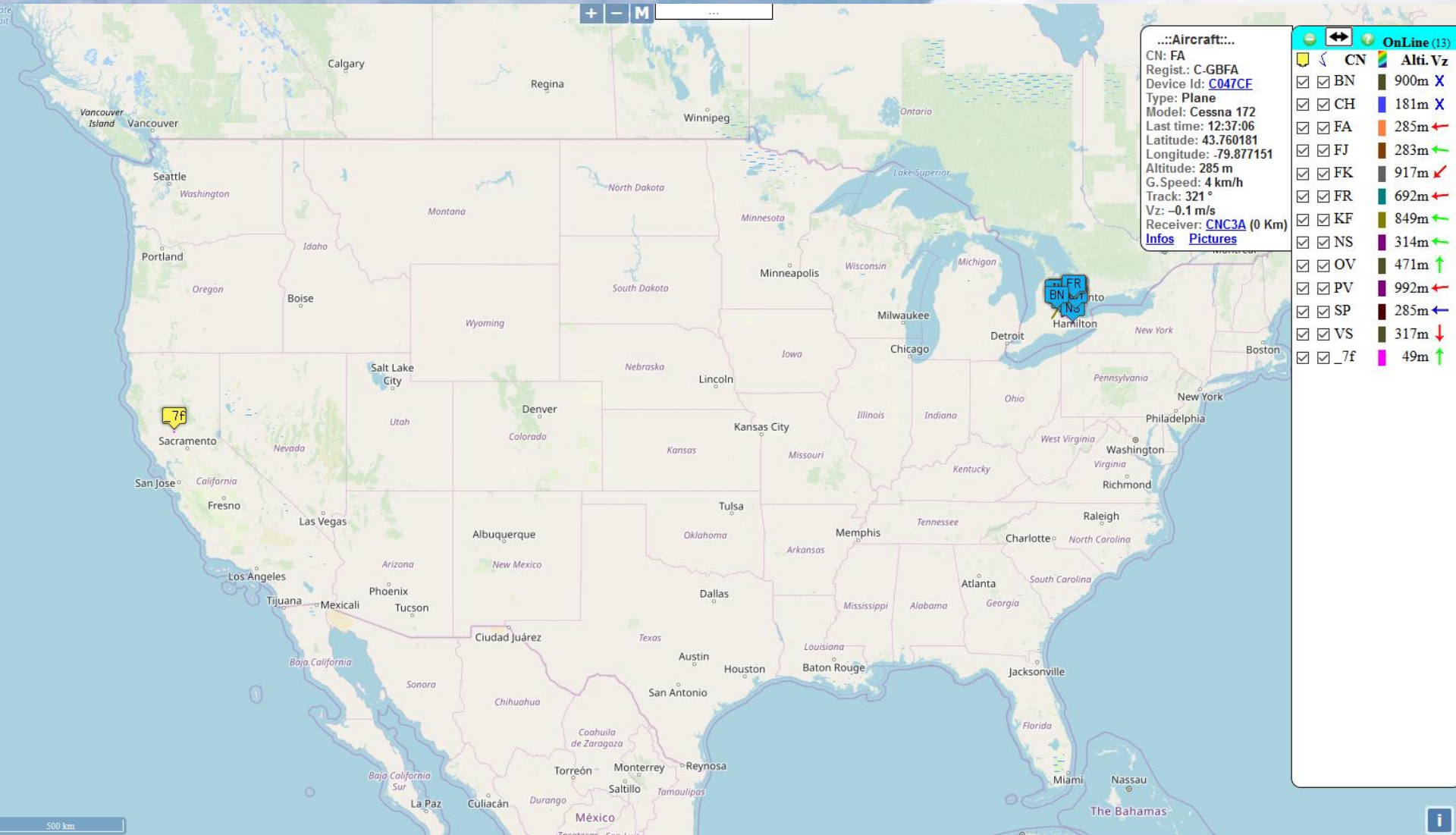
OGN – Europe – 19 Jan 2020 - 1300hrs CST

From <http://live.glidernet.org>



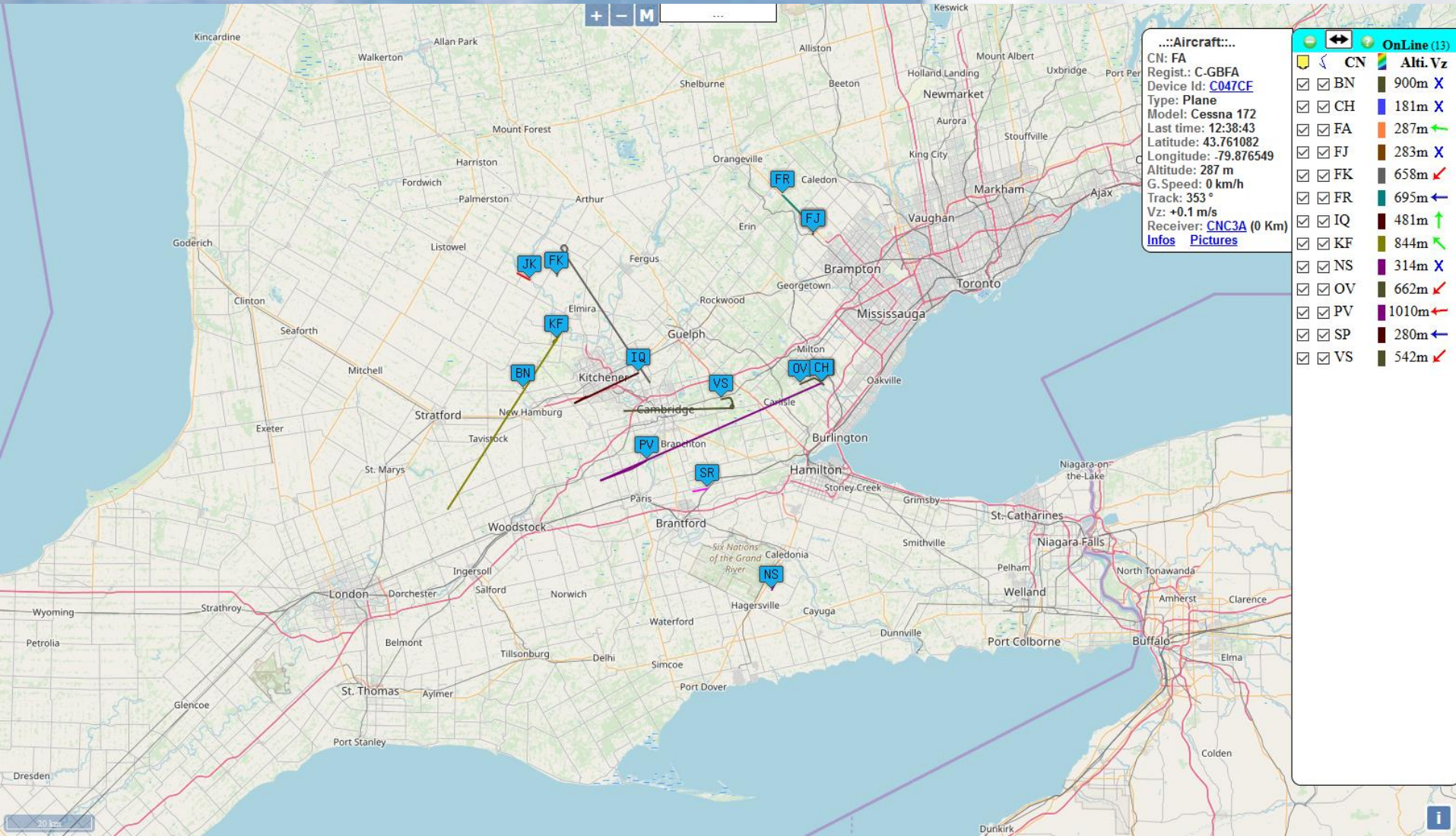
United States – 20 Jan 2020 - 1300hrs CST

From <http://live.glidernet.org>



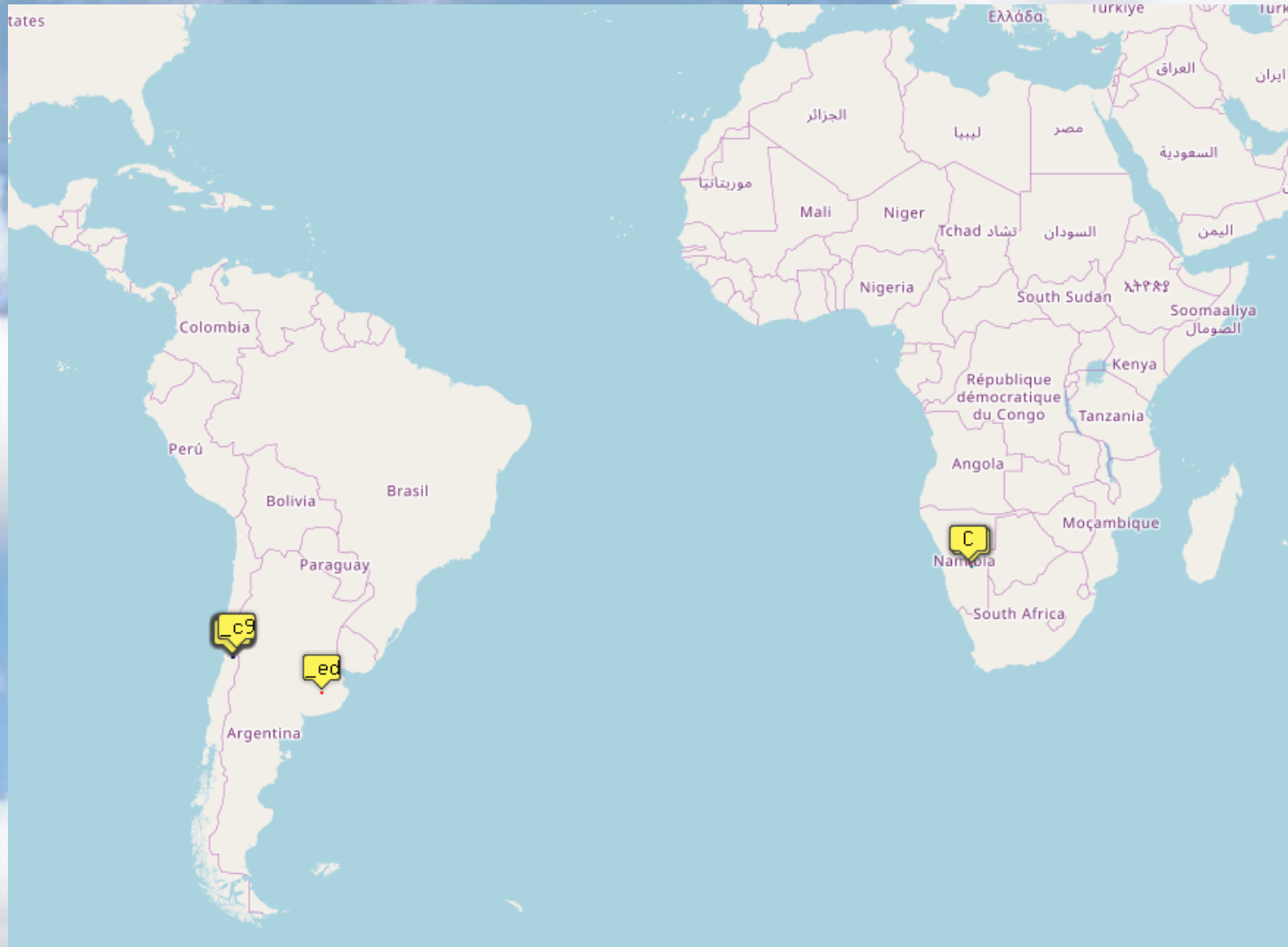
Toronto, Canada – 20 Jan 2020 - 1300hrs CST

From <http://live.glidernet.org>

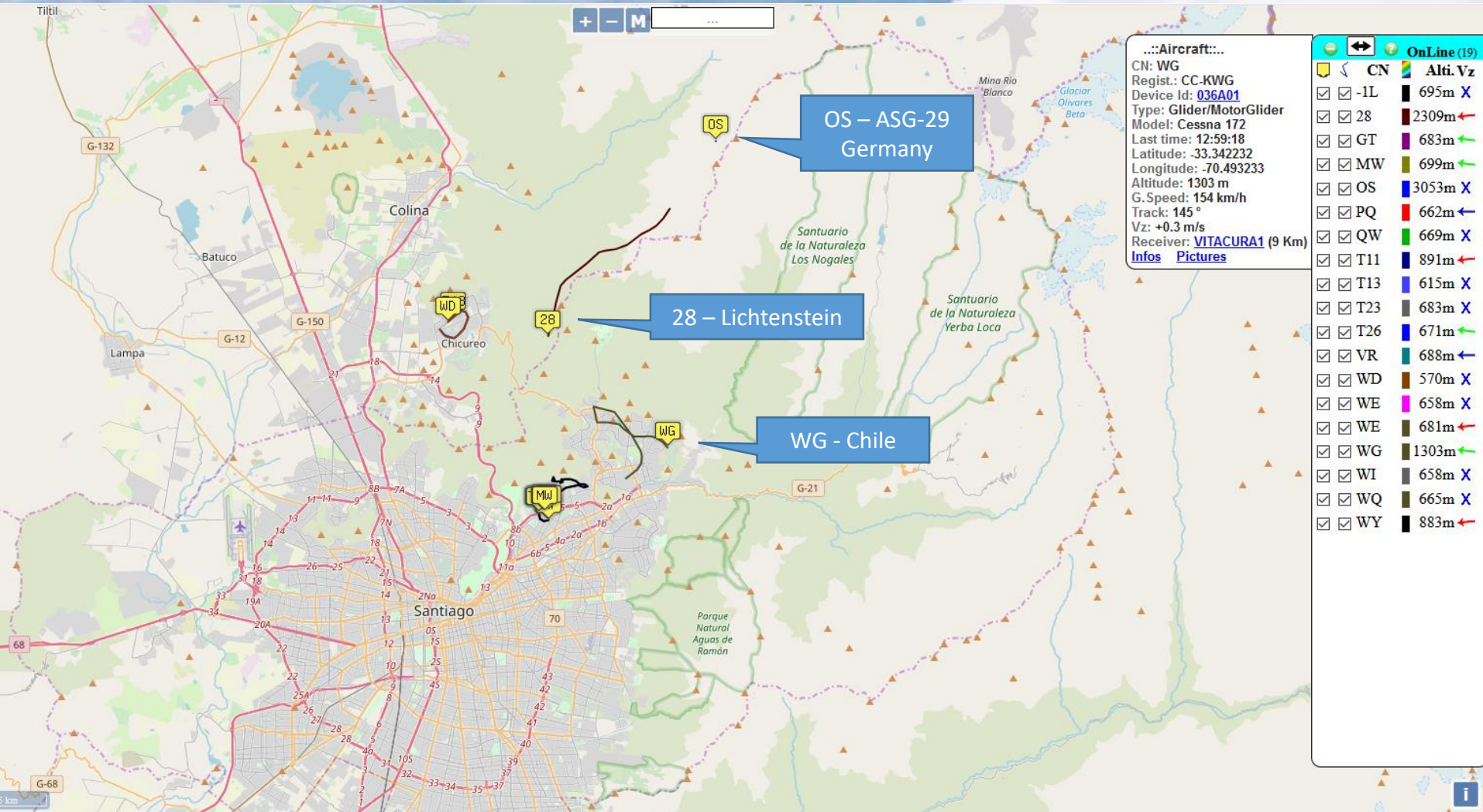


South of Equator – 19 Jan 2020 - 1300hrs CST

From <http://live.glidernet.org>

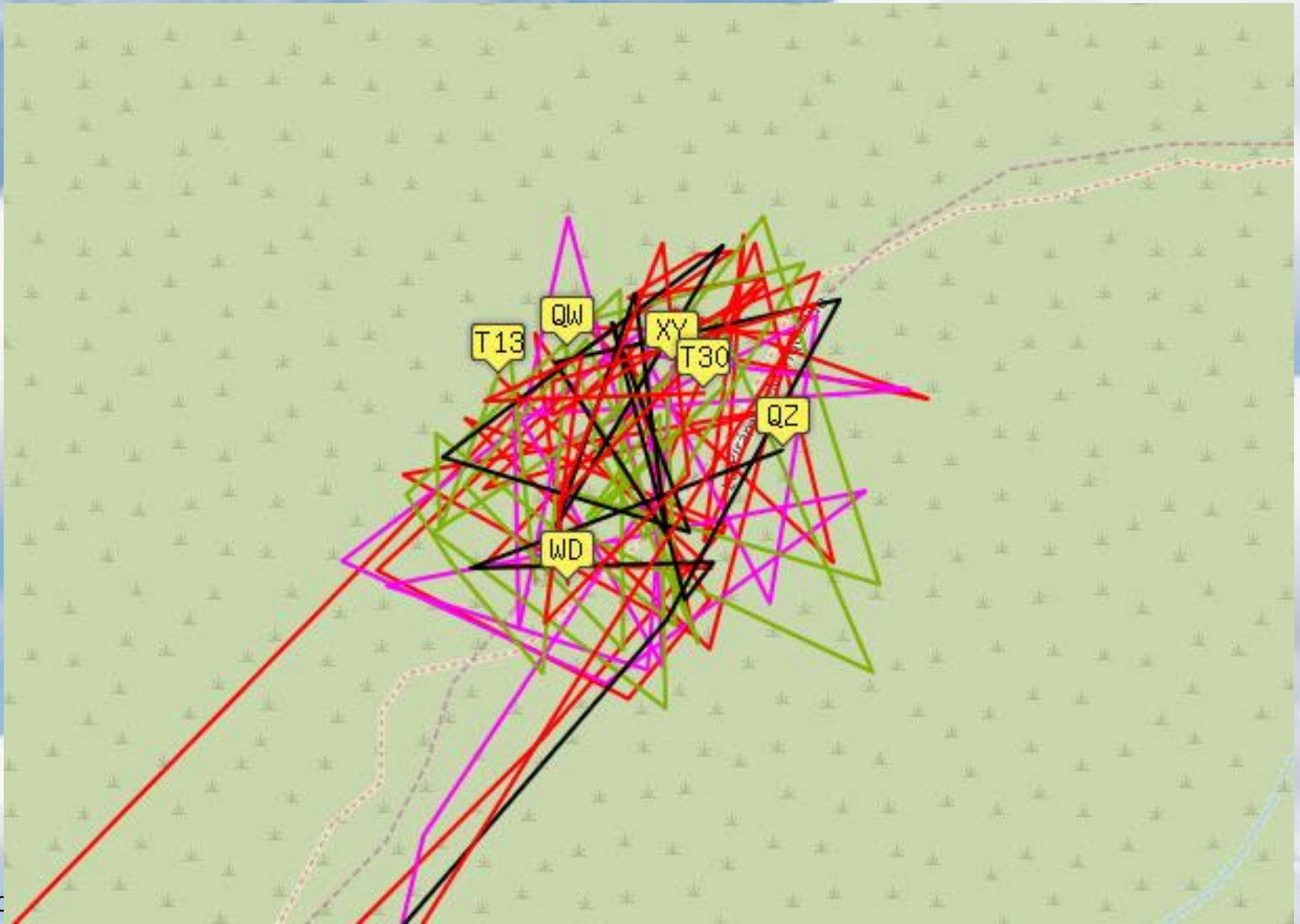


(via <http://live.glidernet.org>)

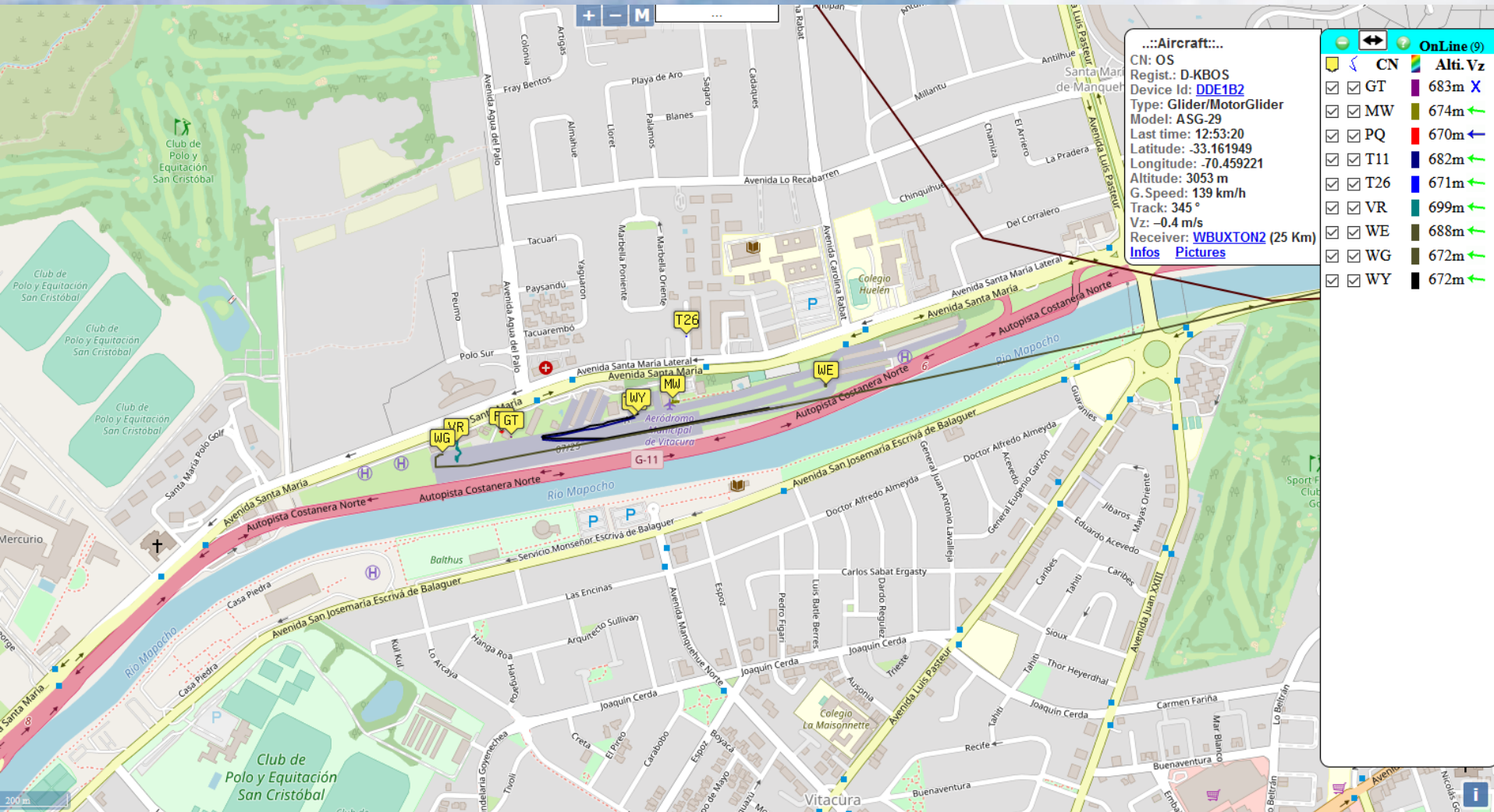


Santiago Chile – 20 Jan 2020 - 1200hrs CST

(via <http://live.glidernet.org>)



Aerodromo Municipal de Vitacura



Aerodromo Municipal de Vitacura



Club de Planeadores de Vitacura
<https://www.planeadores.cl/>



Club de Planeadores de Vitacura

← Club De Planeadores De Vitacura

All

By owner

360° view



Club De Planeadores De Vitacura

 Club De Planeadores De Vitacura

AUG 2017



Aug 2017

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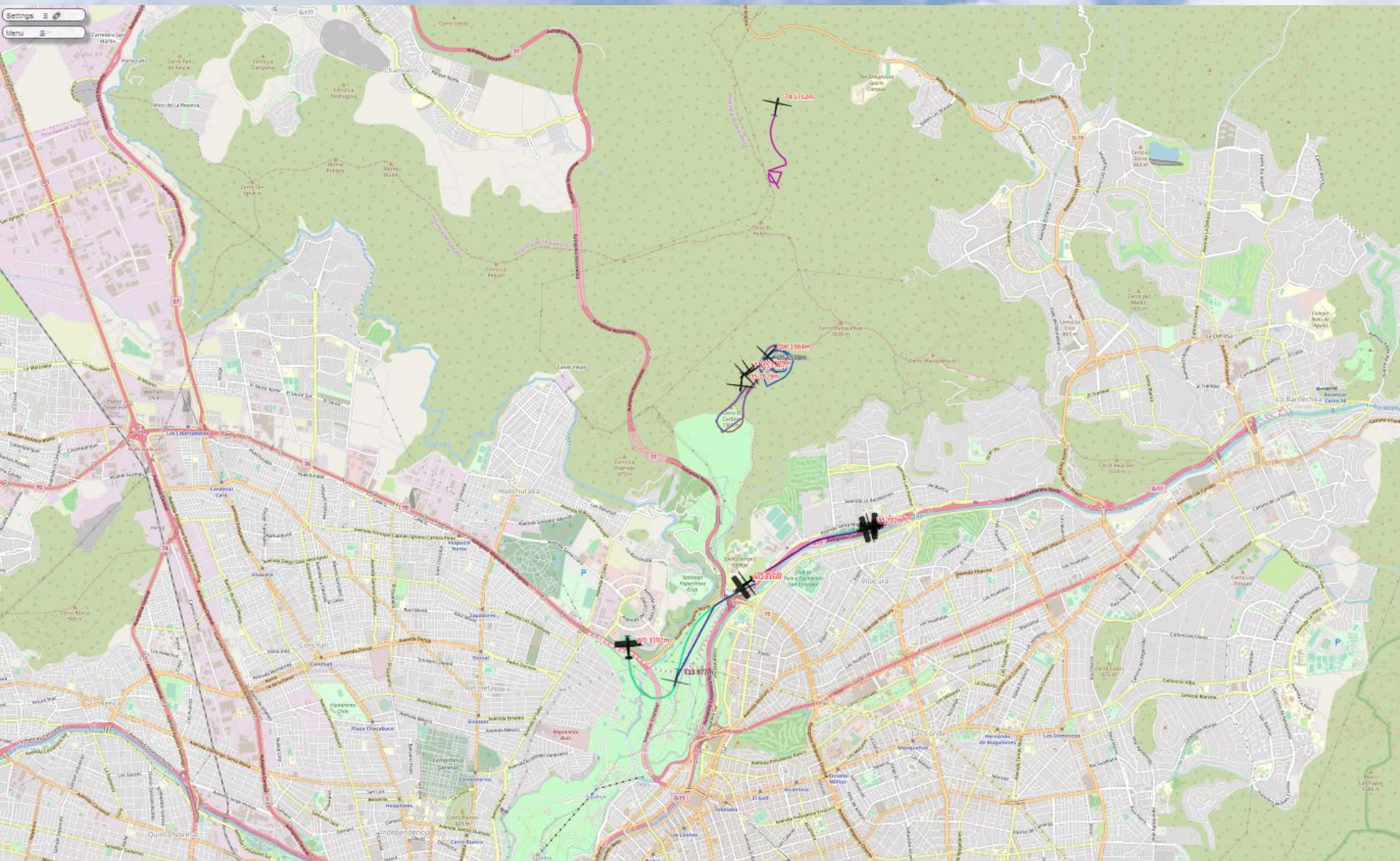


CLUB DE PLANEADORES
VITACURA - CHILE

Club de Planeadores de Vitacura - <https://www.planeadores.cl/>

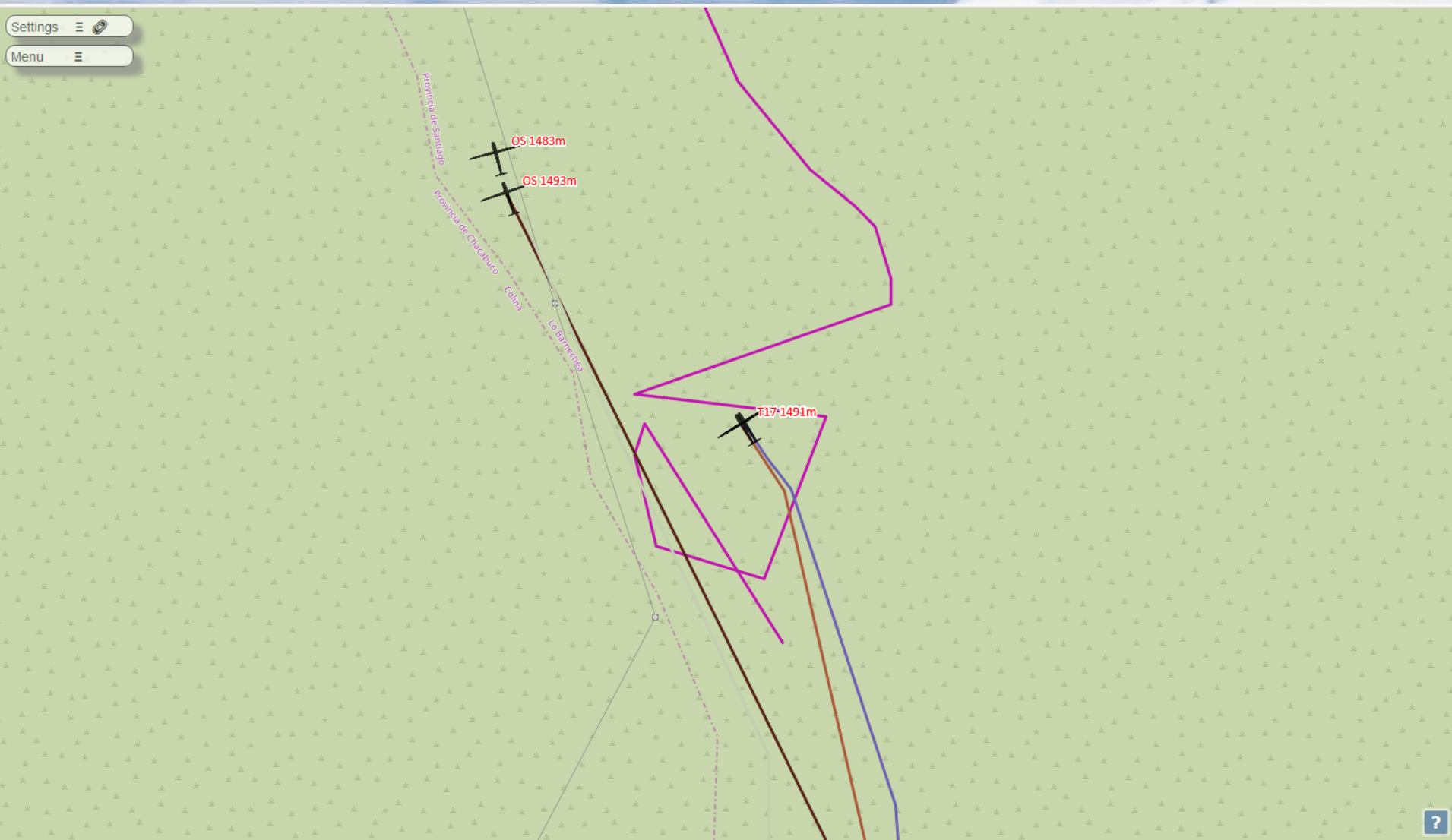
(via <http://glidertracker.org>)

(via <http://glidertracker.org>)



Santiago Chile – 20 Jan 2020 - 1130hrs CST

(via <http://glidertracker.org>)



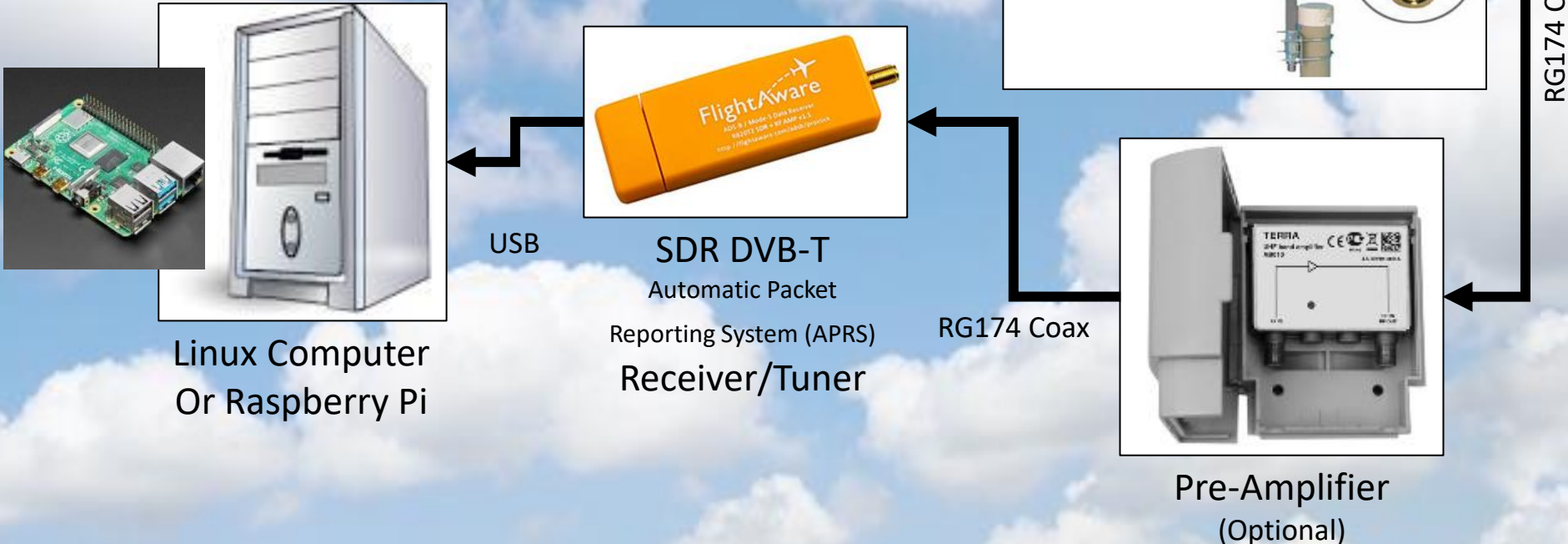
(via <http://glidertracker.org>)



OGN Receiving System

To set-up an OGN receiver you'll need

- 914MHz (US) Antenna and brackets \$50
- LNA Pre-amplifier \$50
- RG174 Coax \$30
- Type N to SMA Coax Adapter \$10
- DVB-T-Dongle (SMA to USB) \$40
- Computer / Raspberry \$50-\$200
- **Total Estimated Cost - \$200-\$300**



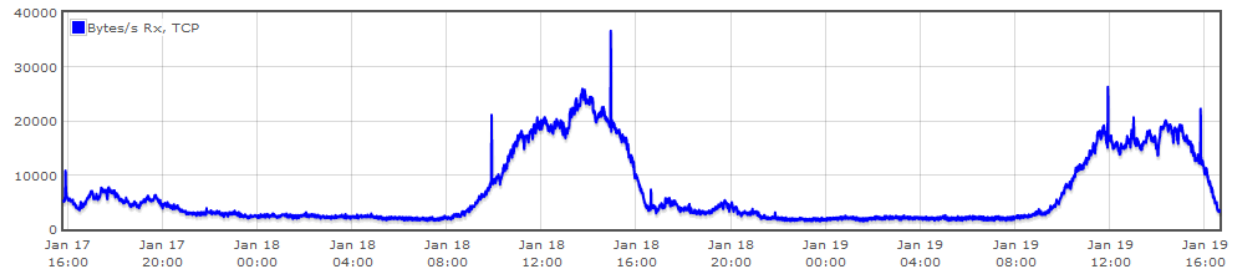
OGN Receiver Report

GLIDERN2 aprsc status
2020-01-19 16:39:31z



Server

Server ID	GLIDERN2
Server admin	Sebastien Chaumontet
Software	aprsc 2.1.4-g408ed49
Software features	epoll posix_cap clock_gettime gcc_atomics zlib ssl sctp
Uptime	202d18h
Server started	2019-06-30 21:48:05z
Operating system	Linux x86_64



Totals

Clients	373	0.17/s
Connects	7956997	1.0/s
Bytes Tx TCP	2962587536072	37796/s
Bytes Rx TCP	216803254865	3616/s
Packets Tx TCP	23080563928	309/s
Packets Rx TCP	1704091298	30/s
Bytes Tx UDP	0	0/s
Bytes Rx UDP	0	0/s
Packets Tx UDP	0	0/s
Packets Rx UDP	0	0/s
Bytes Tx SCTP	0	0/s
Bytes Rx SCTP	0	0/s
Packets Tx SCTP	0	0/s
Packets Rx SCTP	0	0/s

Duplicate filter +

Duplicate packets dropped	4404358	0/s
Unique packets seen	1693638086	30/s

<http://glidern2.glidernet.org:14501/>

OGN Receiver Report

Port listeners

Proto	Address	Name	Clients	Peak	Max	Connects	Conn/s	Packets Tx	Packets Rx	Bytes Tx	Bytes Rx	Tx/Rx bytes/s
tcp	[::]:10152	Full feed	6	87	200	1465222	0	13892906785	794748888/2048081/1947430	1768563562959	102817429595	13204 / 1517
tcp	[::]:14580	Client-Defined Filters	371	502	1000	6492329	0.55	7960256254	343938858/1628962/2601032	1037296077414	41928361110	10834 / 279

Uplinks

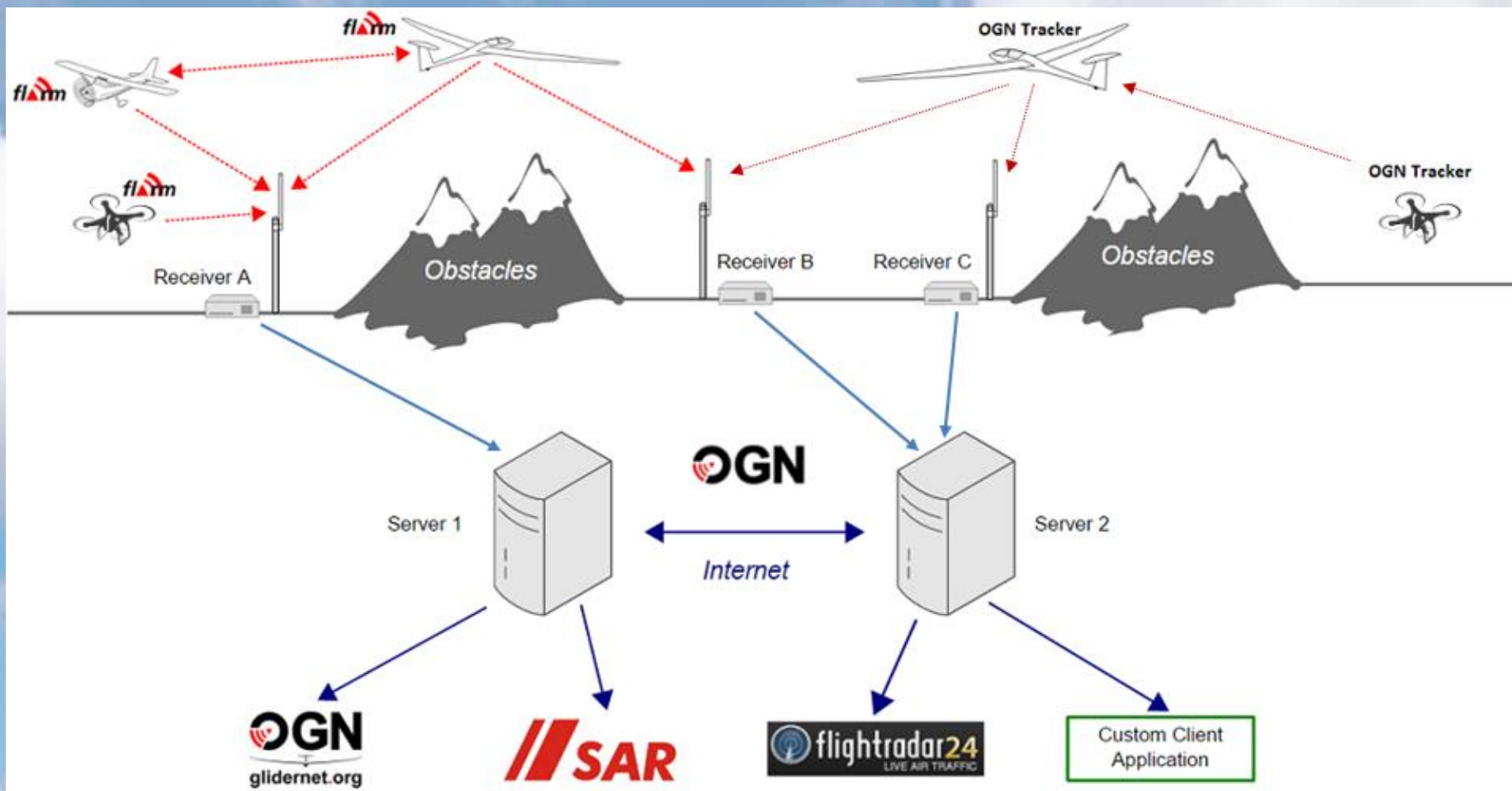
Server ID	Address	Mode	Connected	Up	Last in	Software	Packets Tx	Packets Rx	Bytes Tx	Bytes Rx	Tx/Rx bytes/s	OutQ
GLIDERN1	37.187.40.234:10152	full	2020-01-18 13:59:06z	1d2h	1s	aprsc 2.1.4-g408ed49	3880620	1160326/22644/5457	483185471	146632403	1769 / 698	0

Clients

Port	Username	Address	Verified	Up	Last in	Software	Packets Tx	Packets Rx	Bytes Tx	Bytes Rx	Tx/Rx bytes/s	OutQ	MsgRcpts	Filter
14580		87.149.208.217:37814	No	0s	0s		0	0/0/0	24	0	-18 / -5.9	0	0	
14580		83.160.88.128:40476	No	6s	6s		0	0/0/0	24	0	-7.1 / 0	0	0	
14580		77.160.117.32:39928	No	8s	8s		0	0/0/0	24	0	-7.1 / 0	0	0	
14580	Schwend	141.79.10.10:53268	Yes	9s	9s	RTLSDR-OGN	0	0/0/0	69	68	-3.0 / 6.2	0	0	g/ALL
14580		77.160.117.32:39926					0	0/0/0	24	0	-7.1 / 0	0	0	
14580		84.104.136.73:34197					0	0/0/0	24	0	-7.1 / 0	0	0	
14580		77.160.117.32:39922					0	0/0/0	24	0	0 / 0	0	0	
14580		77.160.117.32:39924	No	12s	12s		0	0/0/0	24	0	0 / 0	0	0	
14580		77.160.117.32:39920	No	12s	12s		0	0/0/0	24	0	0 / 0	0	0	
14580		69.131.49.51:41500	No	14s	14s		0	0/0/0	24	0	0 / 0	0	0	
14580		77.160.117.32:39918	No	14s	14s		0	0/0/0	24	0	0 / 0	0	0	
14580		84.104.136.73:34194	No	14s	14s		0	0/0/0	24	0	0 / 0	0	0	
14580		77.160.117.32:39914	No	16s	16s		0	0/0/0	24	0	0 / 0	0	0	
14580		77.160.117.32:39910	No	16s	16s		0	0/0/0	24	0	0 / 0	0	0	
14580		77.160.117.32:39916	No	16s	16s		0	0/0/0	24	0	0 / 0	0	0	

More than 380
Clients using this
OGN server

The End



See My Other Presentations

- Glider Electrical Wiring
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- Oxygen Systems
- Working with Glider Air Lines
- Sailplane Wiring
- Trailer Wiring & LED Lights
- Pilot Relief Systems
- Battery Testing
- Spar Alignment Tool
- L'Hotellier Fittings
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