

European GADSS Webinar

Benefits of Space-Based ADS-B and Aireon ALERT for an Accident over Oceanic Area



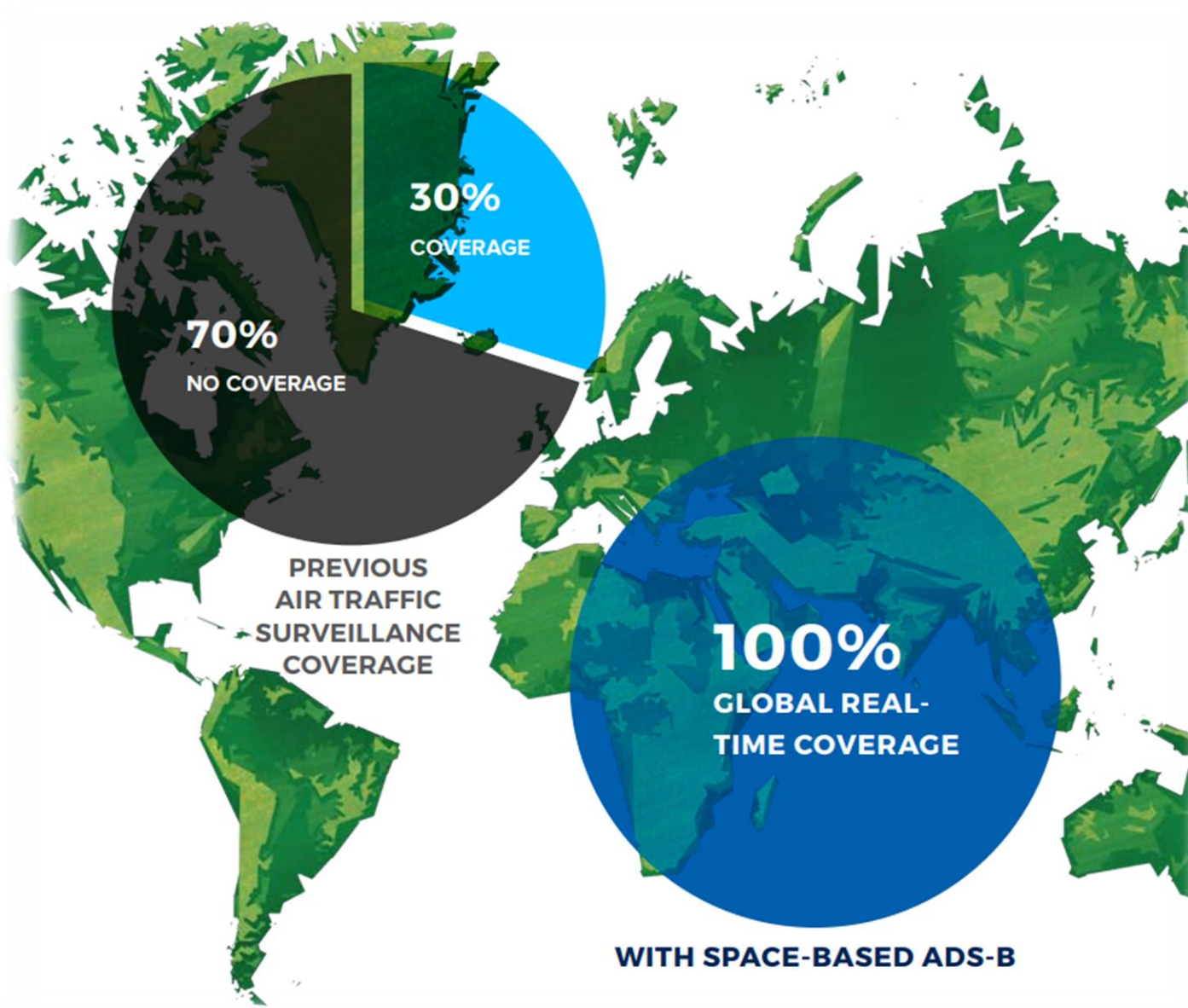
EUROCONTROL



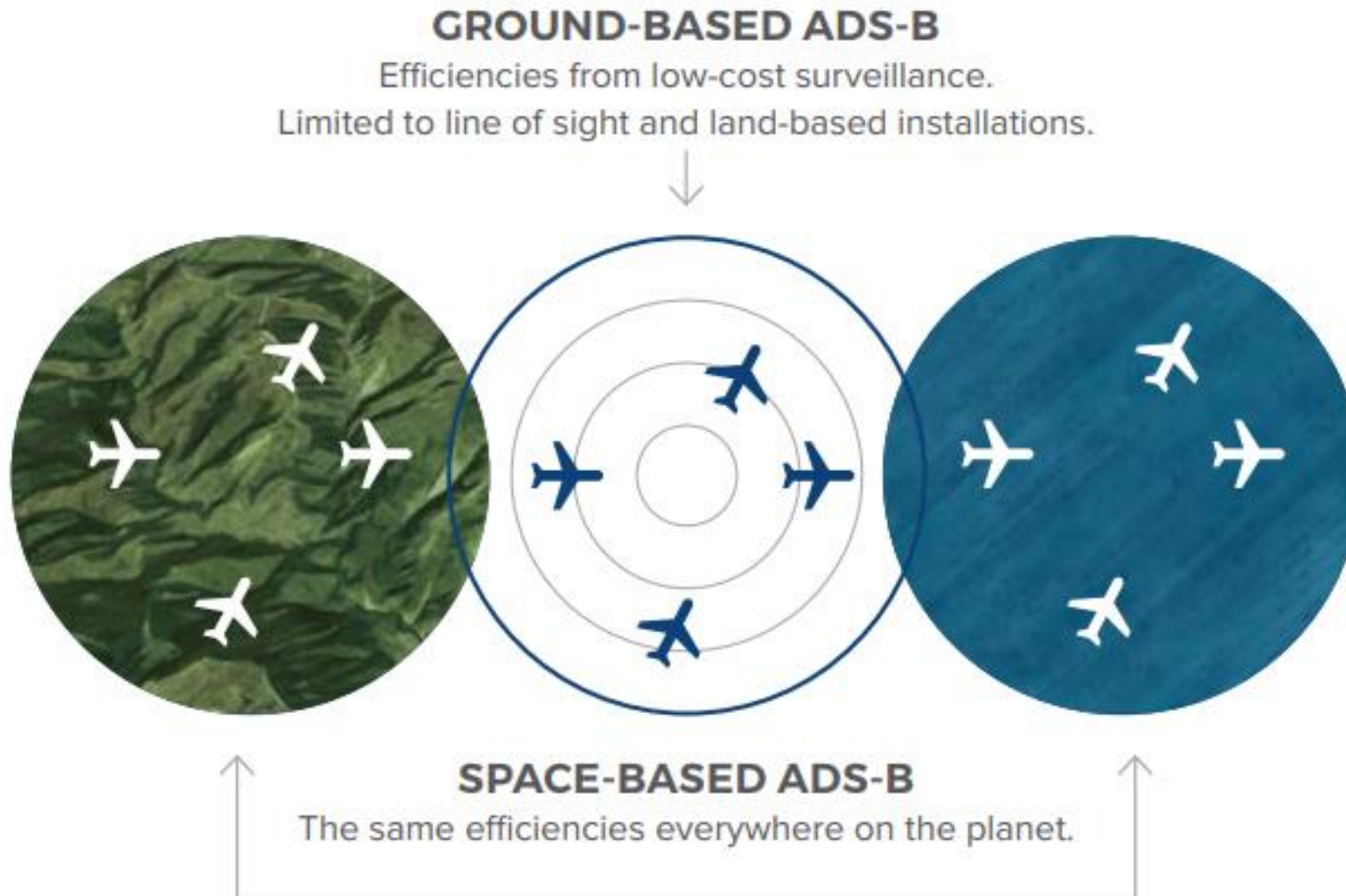
Global Air Traffic Surveillance Challenges



70% of the Earth has no Real-Time Air Traffic Surveillance: That has Changed



Line of Sight Limitations



Aireon Overview

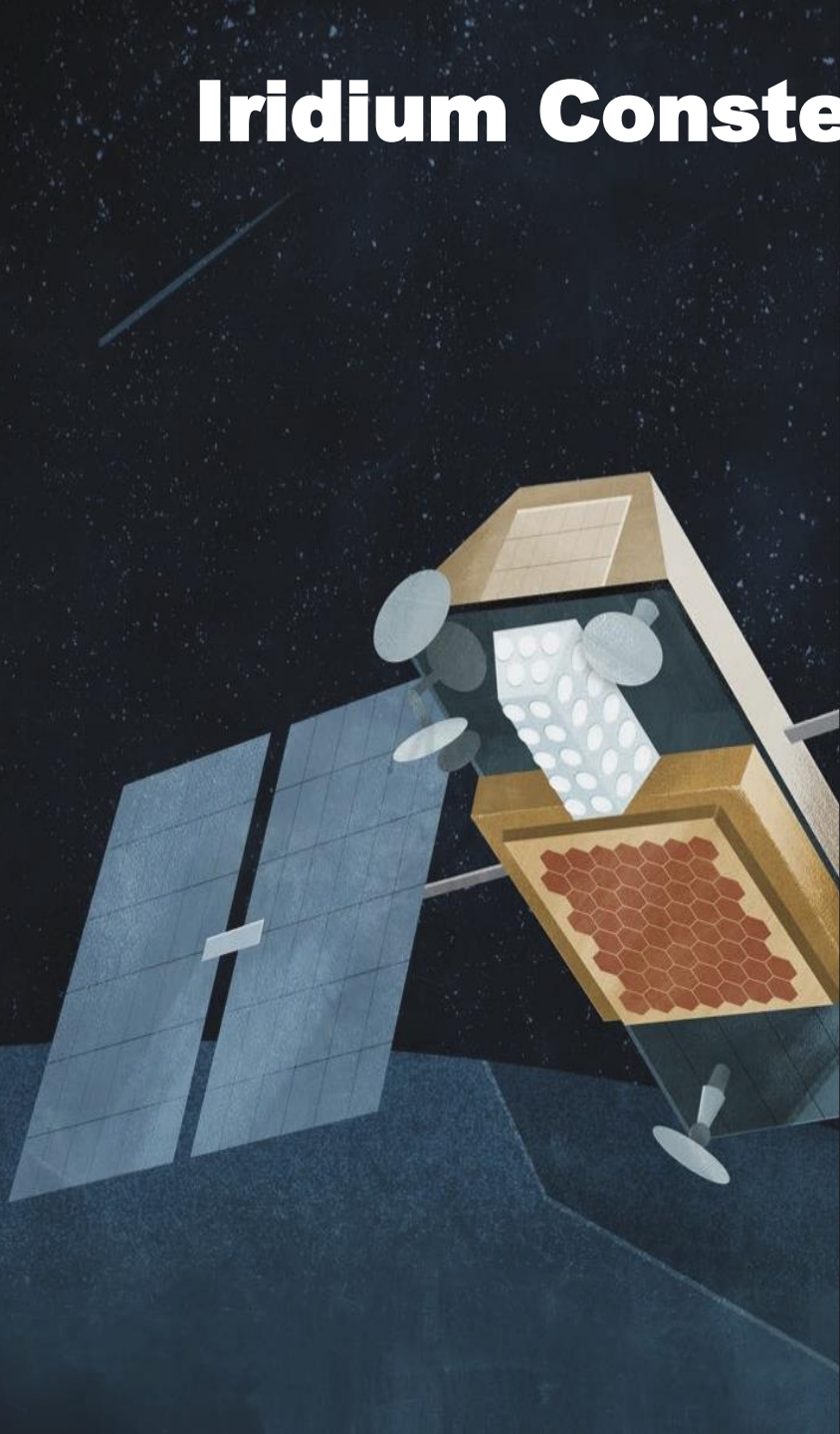




Global, space-based ADS-B



Iridium Constellation Overview



66 Total number of satellites
in the Iridium NEXT
Constellation

- 11 satellites per plane Plus
- 9 in-orbit spare satellites
- 6 ground spare satellites

Orbital Planes: 6

Availability: ≥ 0.999

Typical Lifecycle: 14 Yrs

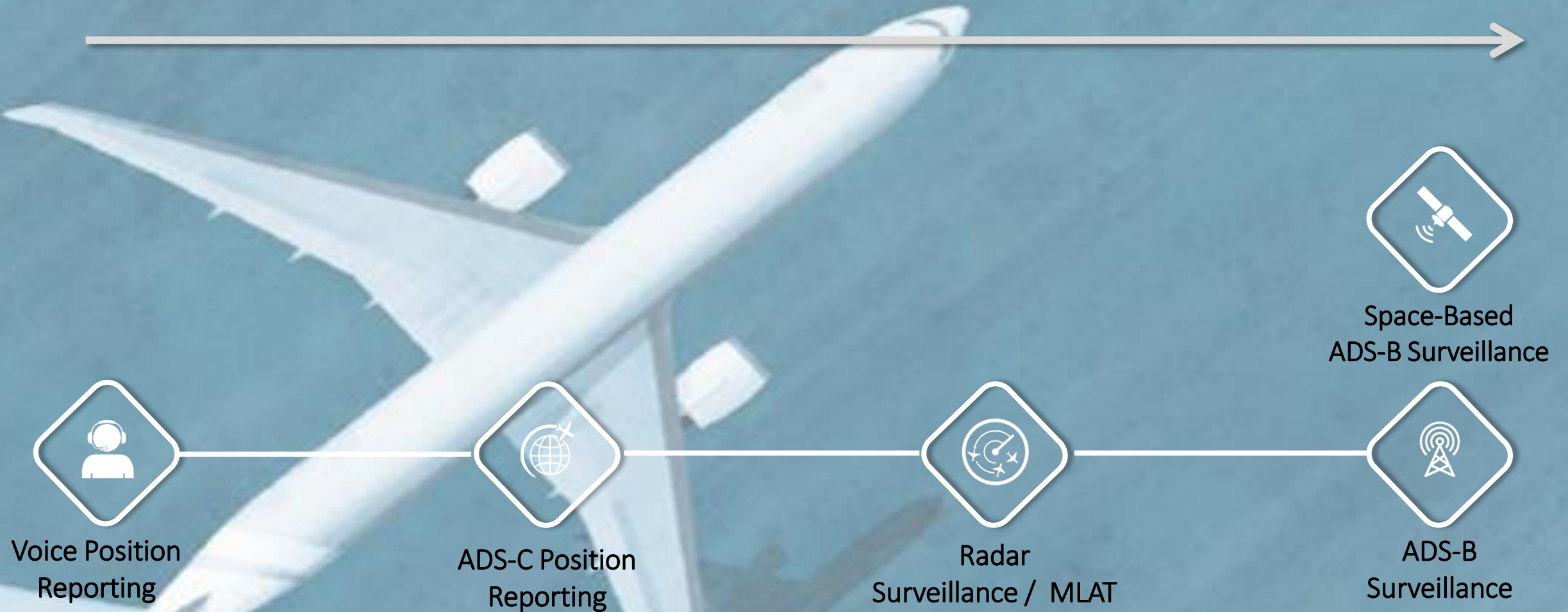
Operational Altitude: 485 miles (780 km)

Colored By Altitude



As of April 2019: 100% Global

Position Accuracy / Update Interval



**ATS
Surveillance**



AIREON LLC PROPRIETARY INFORMATION

Effect on Search and Rescue



SAR: Less Time on Search & Faster Rescue

Position Accuracy / Update Interval



Voice Position
Reporting



ADS-C Position
Reporting



Radar
Surveillance / MLAT



Ground and
Space-Based
ADS-B
Surveillance

		Narrow Body Aircraft	Wide Body Aircraft
Potential Search Area (Sq Km)	Cruise Speed (Knots)	427	475
	PIREP (30min)	491,165	607,798
	ADS-C (15min)	122,791	151,949
	Space-Based ADS-B (8sec)	9.7	12

Aireon ALERT



Aireon ALERT Statistics and Key Figures



394

Total, Active
Registrations

308

Unique
Organizations
Registered

119

Countries
Represented

145

Airlines
Registered

108

ANSPs
Registered

57

SAR
Organizations
Registered

67

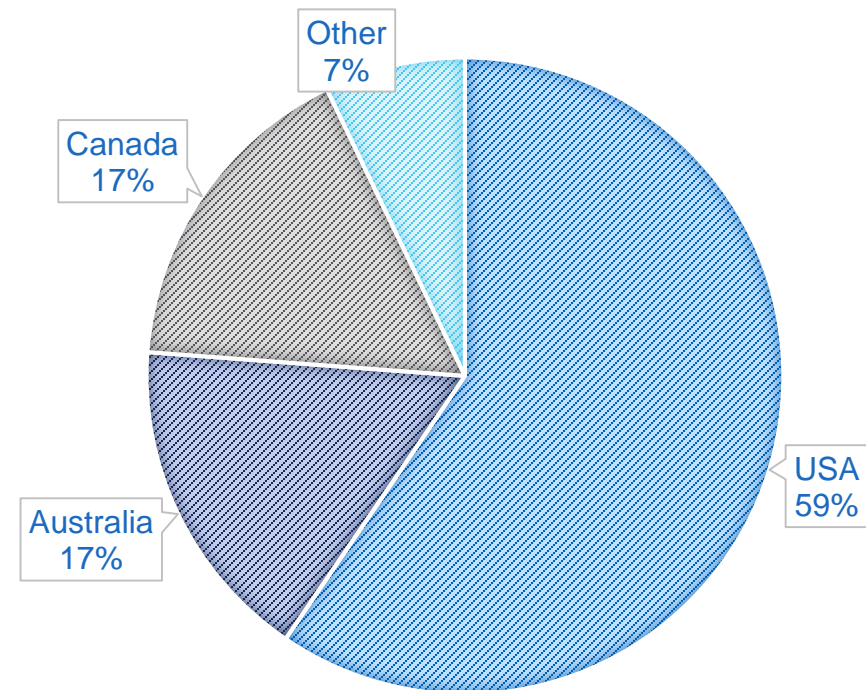
Regulators
Registered

17

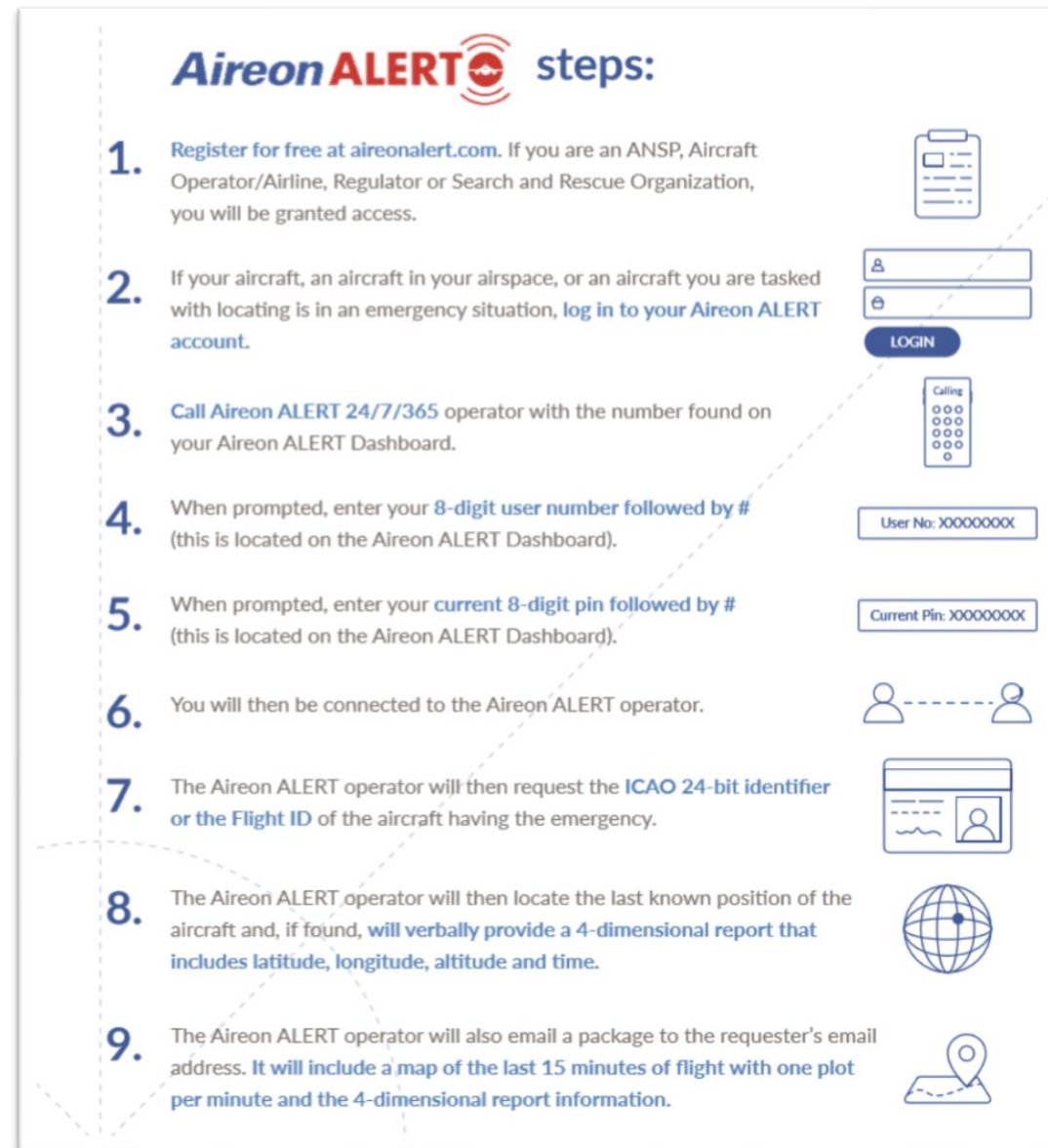
Others/Misc.
Registered

65 AIREON ALERT REQUESTS (BY COUNTRY)

■ USA ■ Australia ■ Canada ■ Other



How Does Aireon ALERT Work?

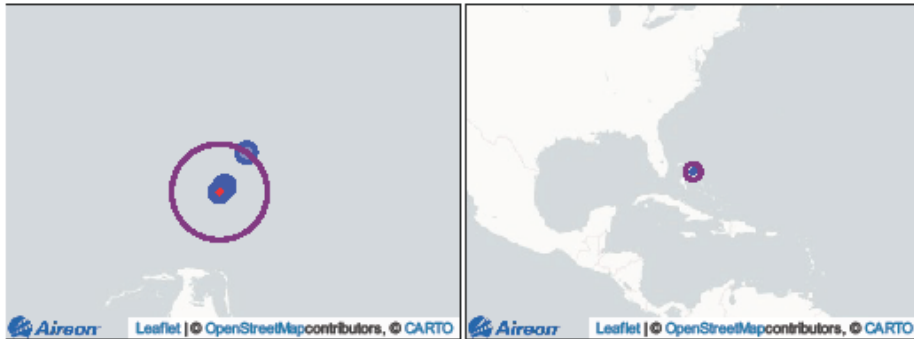


Aireon ALERT – Real Life Examples

- On 23 December 2019 a request was made by a SAR team in locating a missing Cessna Centurion aircraft in the Bahamas
- The last known radar target from FAA was received at 1300 feet and rescue was dispatched to that location to start a search grid
- Aireon data showed the last position >2NM away from last FAA position, allowing SAR to immediately direct the helicopter to the right position
- The pilot was found **ALIVE**, treading water in the ocean without a lifejacket as the plane had already sunk

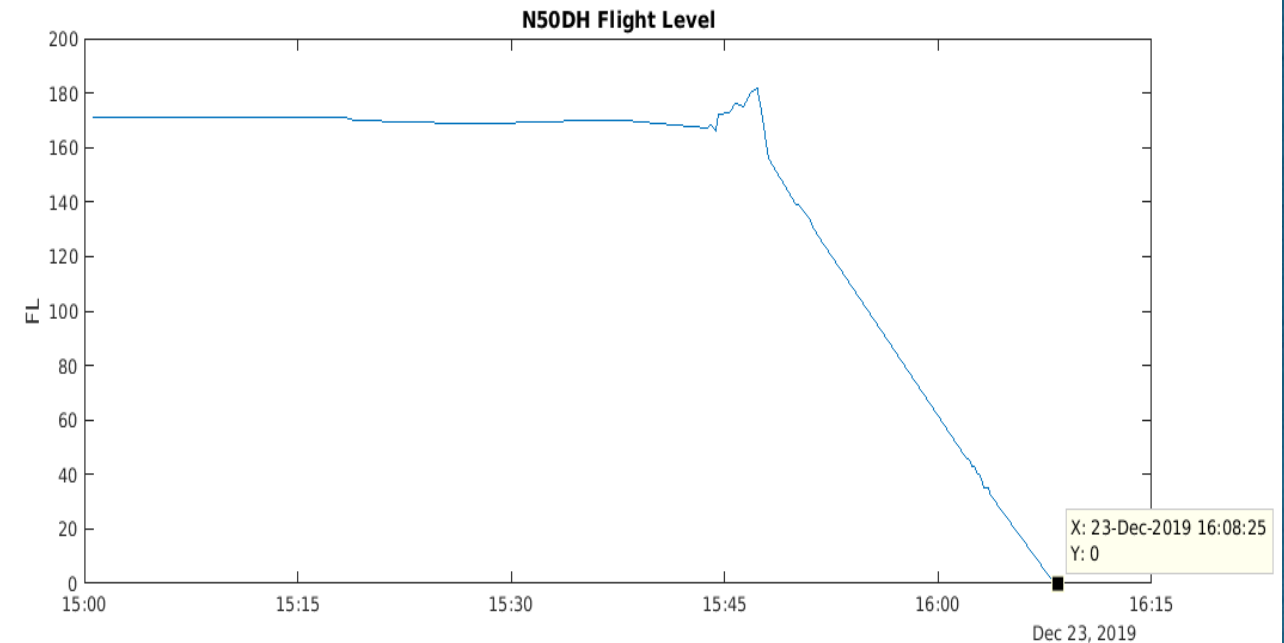


Search Criteria: FLIGHT ID N50DH



Timestamp	ACID	Mode 3/A	Latitude	Longitude	FL	Speed	Heading
2019-12-23 16:08:25 UTC	N50DH	2499	25° 42' 05" N	076° 38' 58" W	FL000 72.0	226	
2019-12-23 16:08:21 UTC	N50DH	2499	25° 42' 08" N	076° 38' 54" W	FL000 72.0	231	
2019-12-23 16:08:14 UTC	N50DH	2499	25° 42' 13" N	076° 38' 48" W	FL001 72.0	223	
2019-12-23 16:08:01 UTC	N50DH	2499	25° 42' 24" N	076° 38' 36" W	FL001 72.0	221	
2019-12-23 16:07:53 UTC	N50DH	0000	25° 42' 32" N	076° 38' 29" W	FL002 72.0	218	
2019-12-23 16:07:41 UTC	N50DH	0000	25° 42' 44" N	076° 38' 19" W	FL003 72.0	217	
2019-12-23 16:03:34 UTC	N50DH	2499	25° 46' 28" N	076° 35' 39" W	FL033 36.0	213	

Bahamas

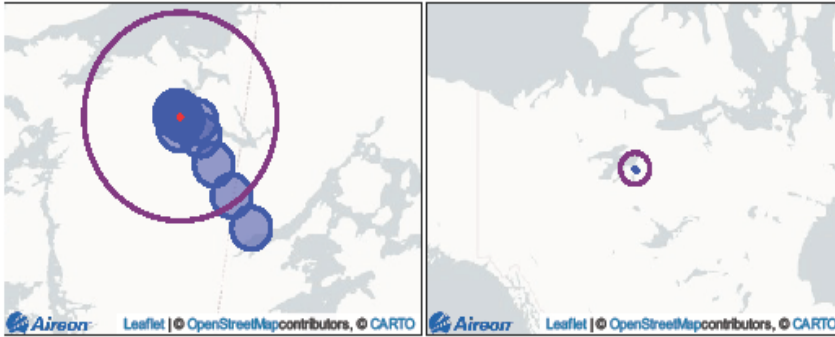


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Date Generated: 2019-12-24T14:47:39.669Z

The Aireon ALERT Services data is provided subject to the
Aireon ALERT Service End User License Agreements located at www.aireonalert.com.

Search Criteria: ICAO C07D86

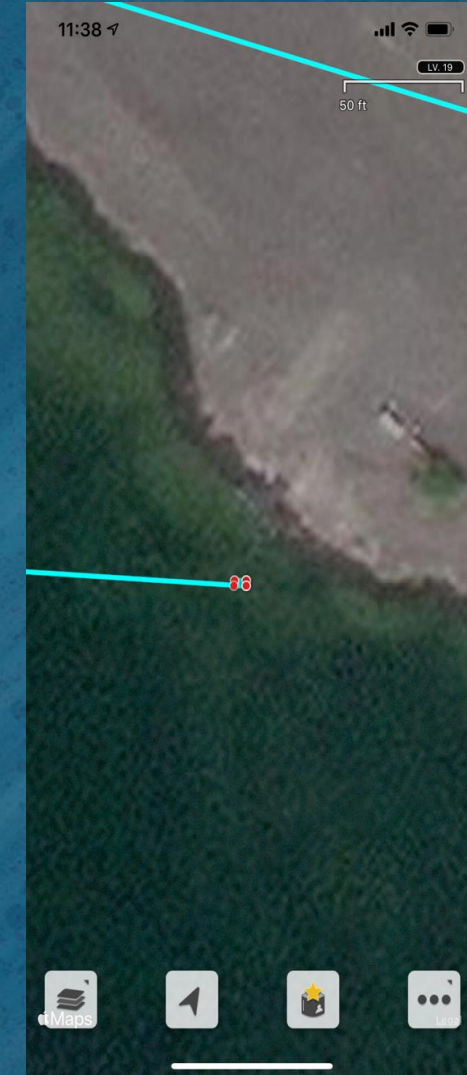
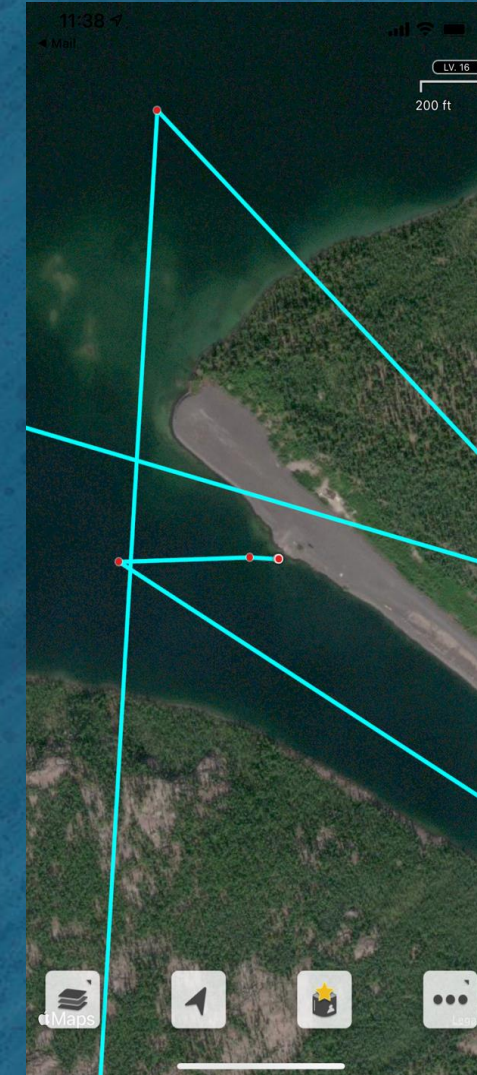


Timestamp	ACID	Mode 3/A	Latitude	Longitude	FL	Speed	Heading
2020-09-04 16:17:08 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:17:03 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:58 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:53 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:49 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:43 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:38 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:33 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:28 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:23 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:18 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:14 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:16:08 UTC	GVNX	0640	65° 36' 46" N	118° 09' 16" W			
2020-09-04 16:15:08 UTC	GVNX	0640	65° 36' 46" N	118° 09' 18" W			
2020-09-04 16:14:04 UTC	GVNX	0640	65° 36' 46" N	118° 09' 29" W			
2020-09-04 16:13:01 UTC	GVNX	0640	65° 36' 36" N	118° 08' 51" W	FL004	72.0	308
2020-09-04 16:12:01 UTC	GVNX	0640	65° 36' 32" N	118° 06' 58" W	FL010	72.0	147
2020-09-04 16:10:58 UTC	GVNX	0640	65° 36' 54" N	118° 10' 09" W	FL011	72.0	96
2020-09-04 16:09:57 UTC	GVNX	0640	65° 37' 02" N	118° 09' 46" W	FL010	72.0	318
2020-09-04 16:08:53 UTC	GVNX	0640	65° 36' 08" N	118° 09' 34" W	FL014	72.0	105
2020-09-04 16:07:51 UTC	GVNX	0640	65° 37' 00" N	118° 09' 26" W	FL017	108.0	283
2020-09-04 16:06:48 UTC	GVNX	0640	65° 35' 48" N	118° 06' 33" W	FL020	108.0	339
2020-09-04 16:05:46 UTC	GVNX	0640	65° 34' 18" N	118° 04' 43" W	FL021	108.0	327
2020-09-04 16:04:45 UTC	GVNX	0640	65° 32' 40" N	118° 02' 18" W	FL021	108.0	328
2020-09-04 16:03:44 UTC	GVNX	0640	65° 31' 00" N	117° 59' 41" W	FL022	108.0	329

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Northern Canada

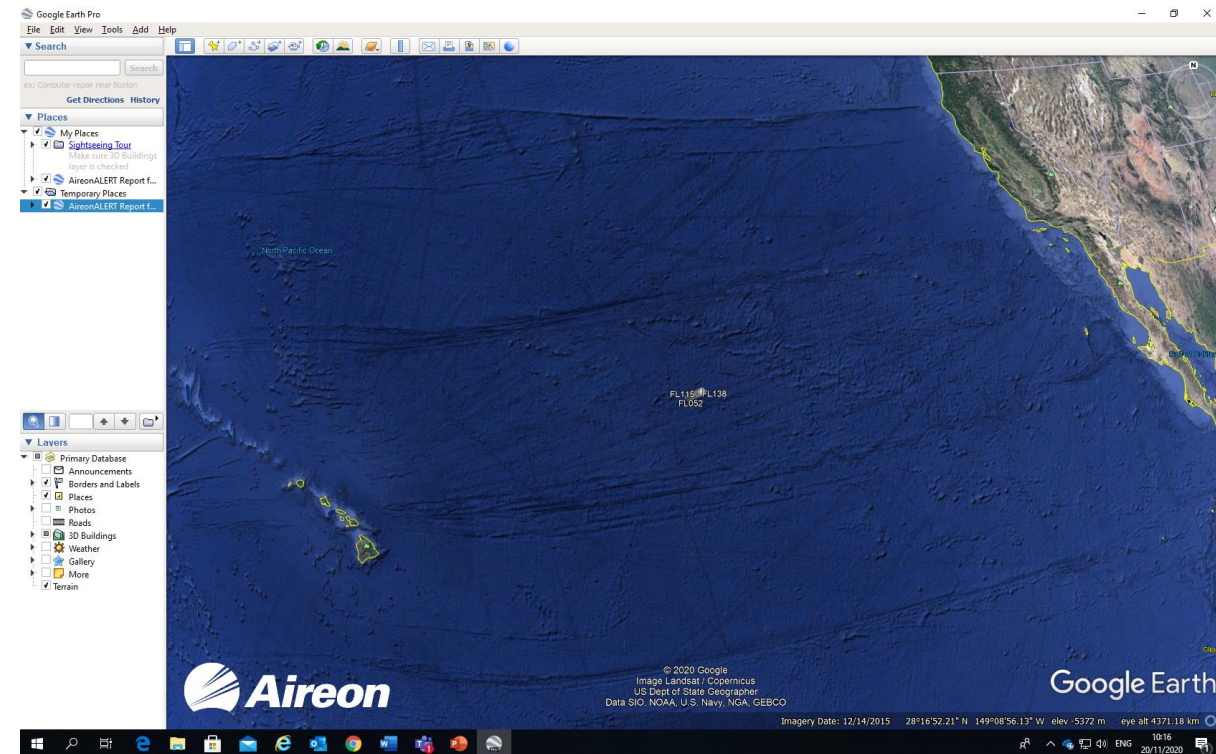


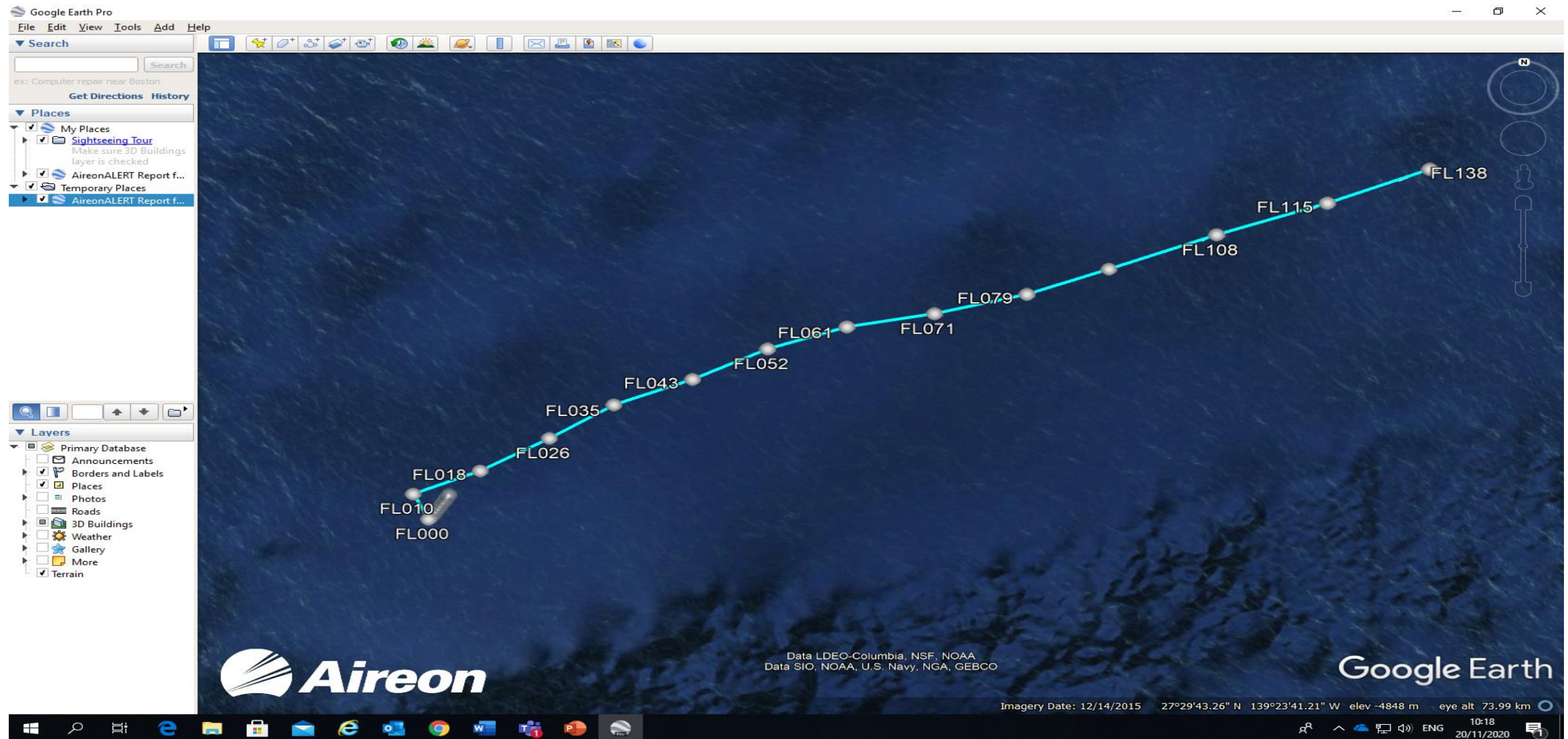
Search and Rescue Mission – Mid Pacific – 8th Nov 2020

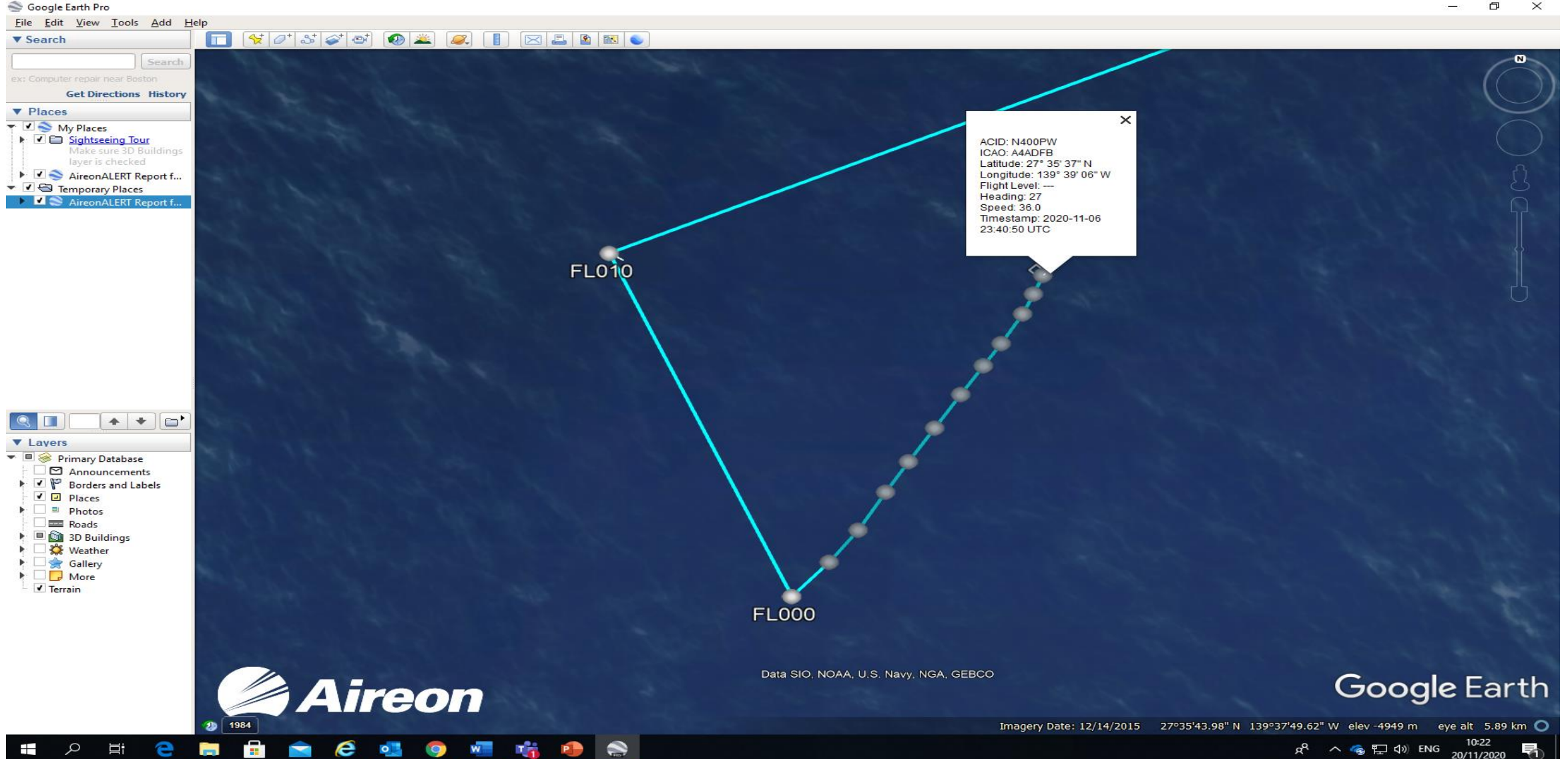
- Pilatus PC-12, with 2 crew, declared a mayday with an engine failure mid-pacific.
- The aircraft successfully ditched mid-pacific 1100nm from land.
- Aireon ALERT data tracked the aircraft down to sea level, including multiple returns whilst the aircraft floated on the surface.
- The Aireon data confirmed the ELT position to within 0.57 NM and was crucial in aiding the recovery of the crew alive 5 hours later by a passing cargo ship.

Australian JRCC direct quote:

“This is the second incident this week where your data has been invaluable for our SAR operations”







***Aireon* ALERT**

