VAISALA

Lightning detection for aviation: Safer, more efficient operations

Solutions Brochure

Lightning can be hazardous in airport environments as well as en route. Approaching thunderstorms can cause delays or even bring operations to a halt — costing thousands with every minute of delay.

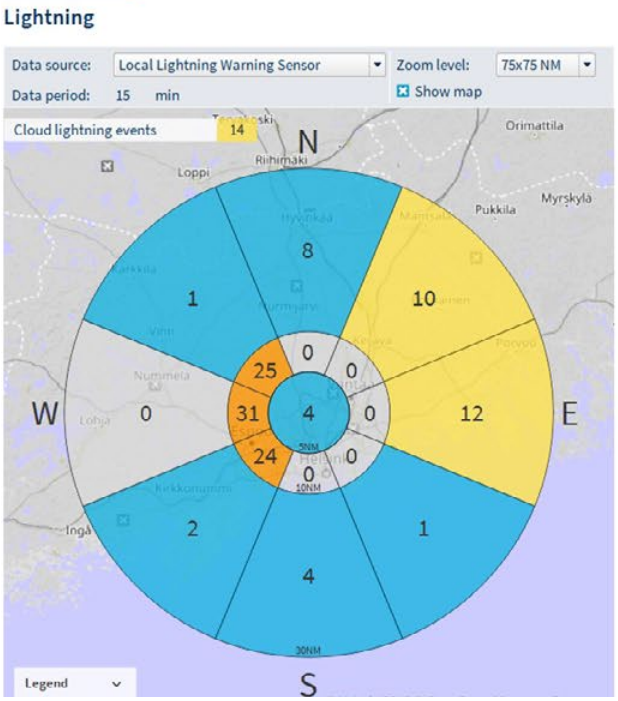
Pinpoint accuracy of the amount and proximity of lightning is the key to keeping operations moving, safely and with maximum uptime.

Vaisala's lightning detection technology delivers the most precise measurements, verified by independent validation studies, so you can optimize aviation flow, and determine the safest time to suspend and resume operations.

We provide single point sensors and the world's most accurate data from global lightning detection networks along with communication and display systems to support the full spectrum of airport operations.

Better safety with precision

Vaisala is the leader in providing reference grade lightning detection data, software and systems to enable safer, more efficient airport operations. Our lightning detection solutions also give air traffic controllers timely advance warnings so that aircraft can be vectored safely around the thunderstorms.



Lightning display with AviMet AWOS

Benefits for staff and customers

- Meteorological staff improve airport safety with better evaluation and reporting of lightning hazards
- Air Traffic Management alert pilots proactively and optimize air traffic
- Pilots increase safety & passenger comfort and save time & fuel
- Ground crew work more efficiently and safely thanks to timely, accurate alerts
- Airlines improve service with smoother and more on-time flights
- Customers enjoy more comfortable flights with fewer delays

AviMet® Automated Weather Observing System AWOS

The global standard for integrated airport weather observation, providing official weather for CAT III to non-categorized airports. Vaisala AviMet AWOS has the built-in capability to integrate lightning alerts from different sources. Designed to grow with the needs of your airport, configurations can include multiple technology options.

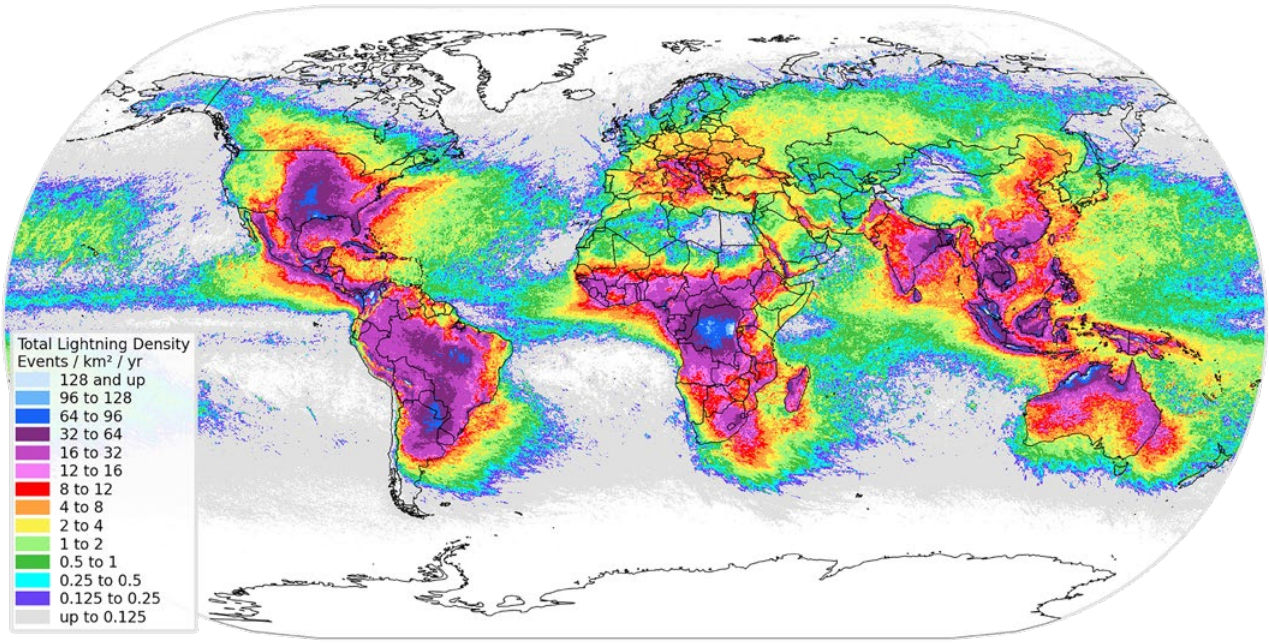
- Timely, accurate and relevant lightning alerts
- Superior data accuracy and quality
- Ease of use and operational excellence
- Full service – global and local

AviMet AWOS can integrate with a lightning system to provide advanced views on how thunderstorms and other weather phenomena are developing around the aerodrome and provide thunderstorm data reports such as METAR/METREPORT. In addition, the user can perform more advance meteorological analysis of the weather by combining different observations with Vaisala's remote sensing application, IRIS Focus.

Thunderstorm Local Lightning Sensor TSS928

The most precise, widely-used standalone lightning sensor at airports around the world.

- Detection of cloud, intracloud and cloud-to-ground lightning
- Provides timely and accurate data for alerts and warnings
- Enables down-to-the-minute decisions with real-time data
- Can be used together with lightning solution information to provide redundancy



Average global total lightning density 2015–2019: 10,661,259,470 events detected

Global Lightning Network GLD360

The only lightning network that provides high-quality, consistent coverage worldwide. Provides tracking and nowcasting of thunderstorm movements for airport and en-route operations.

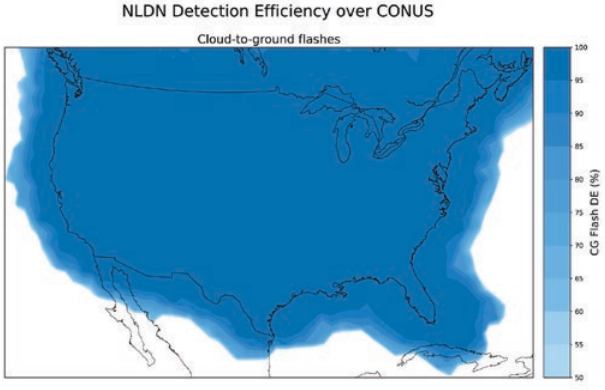
- Offered as a cost-effective subscription model
- Provides tracking and nowcasting of thunderstorm movements with Lightning Threat Zone
- Detects 100% of thunderstorms and 8 out of 10 cloud-to-ground flashes
- Location accuracy of 1.0 km

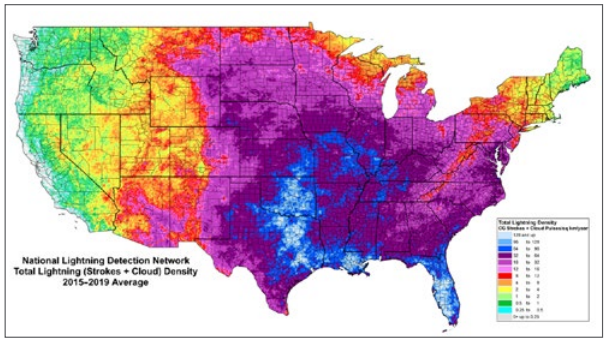
The two types of lightning are cloud-to-ground and cloud lightning. Both are hazardous for air travel. Information about the type of lightning in an approaching storm helps airport decision makers understand and assess risk level.

Local Lightning Precision Network

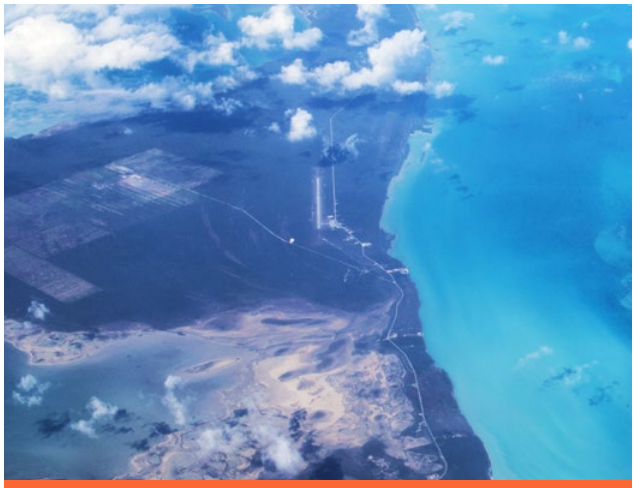
The best option for maximizing safety and efficiency thanks to its tracking and accuracy capabilities. In addition to providing lightning information, it offers options for tracking of adverse weather for aviation operations both around aerodrome and en-route.

- Superior capability to distinguish between cloud and cloud-to-ground lightning
- Detects nearly 100% of all cloud-to-ground flashes
- Consistent performance across the country with location accuracy values at and below 100 meters





More than a billion lightning events detected 2015-2019



Case study: Accurate storm detection in action in the Bahamas

In a small island nation like The Bahamas, a comprehensive storm detection system not only improves airport safety and efficiency, it can save lives. There are 28 airports serving over 5 million annual visitors across this archipelago. The country previously had a single Doppler Weather Radar at one airport, but the lack of insight in other locations left several islands vulnerable to approaching storms.

The Bahamas added a complete network of Vaisala storm and lightning detection systems, forecasting and service creation software, plus several more Doppler Weather Radars. Based at airports across the islands, the networked radars and sensor equipment allow them to see current weather including the presence, speed and severity of tropical cyclones in any area of the country.

The Bahamas now has a reliable early warning system that centralizes all weather conditions for complete situational awareness, and gives them the ability to alert the population of hazardous weather conditions.

Why Vaisala?

For over 50 years, Vaisala has been a pioneer in aviation weather technology, ensuring that every measure is taken for unparalleled safety, efficiency, and sustainability.

Our gold standard suite of solutions is trusted in more than 170 countries and over 2000 airports globally. In fact, every commercial flight around the world will use weather observations produced by Vaisala equipment or forecasts driven by our sensor measurements at some point in their journey.

With a commitment to constantly evolving our portfolio, Vaisala remains at the forefront of the industry, continuously exploring new horizons.

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