

**DEFENCE AND SPACE**  
Innovation

# SafetyWeather

Global detection of  
thunderstorms and  
convective turbulence



**AIRBUS**



# THUNDERSTORMS

Thunderstorms and convective turbulence have the most significant impact on safety and efficiency among all weather phenomena in aviation. Because of their risk potential, thunderstorms need to be circumnavigated and therefore can lead to significant delays resulting in higher operating costs and significantly higher CO<sub>2</sub> emissions. Weather experts around the world predict that the frequency and intensity of extreme weather phenomena will increase and get more unpredictable due to climate changes.

## **“Extreme weather events**

are expected to increase in both frequency and severity, driven by climate change.”

IATA, 2018.



# THE CHALLENGES

## Up to 40K USD costs per tail/year

It has been seen that, on average, delays related to extreme weather cost operators \$US 13-40k per tail each year.

For a mid-sized airline (75 aircraft) this can represent additional operating costs of \$US 3m, depending on the geographical location.

Based on data from Eurocontrol, 2018 and FAA, 2017.

## “Thunderstorms

have become more static, larger and higher making them increasingly difficult to fly around while turbulence and sudden strong winds around airports are making flying increasingly uncomfortable for passengers.”

Flight International, 2020.

## Today's thunderstorm forecasts

are based on numerical weather models and therefore do not show information on a granularity level that would help the industry to make effective decisions. Compounding this, an aircraft's on-board radar system cannot provide pilots with an awareness of all the thunderstorm cells along their current flight path. Therefore manoeuvres to circumnavigate thunderstorms can only be initialised at short notice, resulting in inefficient aircraft operations that lead to increased operating costs.

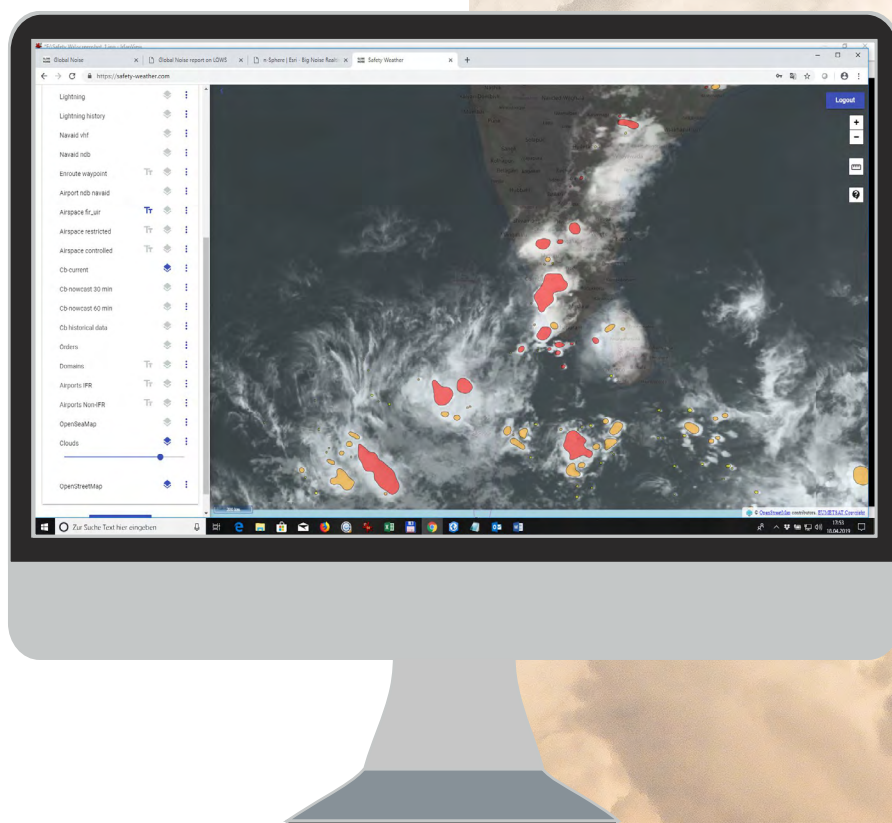
# GLOBAL DETECTION AND PREDICTION

Applying sophisticated algorithms to a global weather satellite data feed, the SafetyWeather Cb-Global product detects every single thunderstorm cell on the planet for more efficient and safer operations in aviation. Compared to conventional products, Cb-Global is a measurement rather than a model based forecast, with very precise detection and classification abilities.

For predictive insights the integrated nowcasting function calculates moving directions, speeds and future positions of all thunderstorm cells for the next 60 minutes. Additionally, Cb-Global can be enhanced locally with ground based weather radar data if available.

## OUR SOLUTION

- Precise detection and classification of Cb-cells
- Global coverage, including oceans
- 5 to 15 minutes update rate
- 60 minutes Nowcasting/ Prediction





# PLAN AND EXECUTE YOUR OPERATIONS MORE EFFICIENTLY



## Aircraft Operators

Optimised flight planning and inflight re-routing as well as increased safety and travel comfort.



## Air Traffic Management

Better understanding of current and future airspace capacity for safer and efficient operation plans.



## Airports

Enhanced airside capacity planning for smoother airport operations.

## Sharing the same view

The aviation industry has made it clear that a shared situational awareness of extreme weather phenomena like thunderstorms will directly contribute to safer and more efficient overall airspace.

SafetyWeather allows users to integrate the unique data stream into existing flight planning solutions, EFBs (Electronic Flight Bags), ATC/ATM solutions via an API. Additionally, SafetyWeather can be accessed directly through a web browser, allowing easier access to all stakeholders.

An increased and shared situational awareness is a key success factor for safe and efficient air traffic operations.

Request access to this unique capability, and take advantage of a personalised demonstration now! [safety-weather@airbus.com](mailto:safety-weather@airbus.com)



## Contacts

Semann, Mika

T +49 3179 4154

M +49 174 9748 196

E [safety-weather@airbus.com](mailto:safety-weather@airbus.com)



# AIRBUS

## **Airbus Defence and Space**

Willy-Messerschmitt-Straße 82024

Taufkirchen, Germany ©Airbus Defence and Space. 2019 All rights reserved. Airbus, its logo and product names are registered trademarks. Specifications are subject to change without prior notice. Statements made herein do not contain an offer.