

Emirates reduces unexpected severe turbulence with new initiatives

- A Monitor Desk Report

Date: 29 October, 2025

Airline's data-driven detection technology minimises impact of unexpected turbulence for smoother, safer flights across its network.

Emirates' current weather detection setup brings together SkyPath, Lido and IATA Turbulence Aware as a complementary configuration—with AI, machine learning, and real-time crowd-sourced turbulence data.



IATA TURBULENCE AWARE

Emirates feeds real-time turbulence data from its network into IATA's platform. The aggregated data from all contributing airlines is used for precise turbulence and weather management.



LIDO mPILOT WEATHER PREDICTIONS

Delivers a customised mobile navigational charting application including weather services for Emirates' operational requirements.



SKYPATH

- AI and machine learning-based weather predictions, collecting real-time turbulence reports from thousands of aircraft.
- Accelerometer technology translates movement of pilot handheld devices into turbulence measurements.



Dubai: As turbulence becomes an increasingly serious challenge for airlines due to its rising frequency and severity, Emirates has taken a proactive, data-driven approach to address the occasional inconvenience it may cause by planning smoother flights.

The airline has proactively adopted a diverse, multi-layered strategy leveraging multiple information sources to deliver real-time, accurate turbulence data. This approach has helped reduce unexpected severe turbulence encounters on flights across its network with new initiatives launched last year that have helped enhance the onboard experience for passengers and crew.

Emirates' current weather detection setup brings together SkyPath, Lido mPilot from Lufthansa Systems and IATA Turbulence Aware as a complementary configuration—delivering breakthrough innovation

through AI, machine learning, real-time crowd-sourced turbulence data, as well as pilot reports.

SkyPath: Emirates partnered with SkyPath last year to develop and improve AI and machine learning-based weather predictions that identify turbulence areas conventional methods miss. SkyPath's platform integrates real-time turbulence reports from thousands of aircraft with cutting-edge analytics, using advanced AI and machine learning to generate accurate predictions, even for areas with no current flight activity or challenging 'clear air' turbulence.

SkyPath gathers information from various data sources: Eddy Dissipation Rate (EDR) data for universal turbulence measurements, Automatic Dependent Surveillance-Broadcast (ADS-B) transponder data, and SkyPath's patented iPad accelerometer technology that translates device movement into precise turbulence measurements that provide pilots with actionable information. This multi-source, AI-driven approach ensures global coverage and industry-leading prediction accuracy.

Lido mPilot Weather Predictions: Emirates' long-standing partnership with Lufthansa Systems delivers a customised mobile navigational charting application tailored to the airline's operational requirements. Through partnerships with sources like the German Weather Service, Lido mPilot provides high-accuracy weather reporting, live cloud and convection data, plus turbulence and icing predictions for enhanced pilot situational awareness. Emirates continuously collaborates with the Lido team to improve weather data quality and global coverage.

IATA Turbulence Aware: Since joining IATA's Turbulence Aware Programme last year, Emirates has been actively contributing and consuming real-time turbulence data from its extensive network across the Middle East, Africa, Asia, and Australia. This data feeds into IATA's global turbulence platform, which aggregates inputs from participating airlines worldwide to provide a comprehensive, real-time view of atmospheric conditions.

By integrating these insights into its electronic flight bag charting application, Emirates equips its pilots with live, in-situ turbulence visualisations. This enables more informed decision-making in the cockpit, allowing crews to anticipate and avoid turbulent areas,

ultimately enhancing passenger comfort, operational safety, and fuel efficiency.

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