

The Weather Company aviation solutions – forecast services

Translating weather into operational decisions and savings

The Weather Company, an IBM Business, has been serving the time-critical weather needs of air carriers for nearly 30 years, during which time the company has earned a reputation as one of the most trusted and innovative aviation weather providers in the world. The Weather Company's ability to blend the aviation and meteorological expertise of its staff with innovative technology has resulted in some of the most advanced aviation forecast services designed to benefit pilots, dispatchers, airport operations and passengers

The Weather Company operates a proven 24/7/365 Aviation Weather Center to support the mission-critical operational needs of airlines and help them ensure safety, reduce costs and improve on-time performance. The Weather Company's services are FAA approved and meet FAA guidelines for Enhanced Weather Information Systems (EWINS), which allow us to successfully provide advanced terminal, enroute, and irregular operations support to a growing number of domestic and international carriers.

Advanced forecasts for terminal, enroute and irregular operations

Terminal Operations

To mitigate operational delays and cancellations on the ground, The Weather Company offers several services.

- **TWC Terminal Aerodrome Forecasts (TAFs):** Provides an added level of operational flexibility with TAFs issued on a scheduled or ad hoc basis, especially valuable when government forecasts are unavailable or imprecise.
- **Deicing Forecasts:** Winter weather guidance including precipitation rate and type tables suitable for anticipating deicing holdover times.
- **TWC Load Planning Forecasts:** Provides 3-hourly temperature forecasts critical for load planning at key airports.
- **Operational decision support:** Our aviation-experienced meteorologists consult directly with airline and airport operations to improve confidence and understanding ahead of and during critical weather situations.

Enroute Operations

To streamline and improve the effectiveness of route planning and enroute safety, The Weather Company continuously monitors and produces precise enroute alerts and guidance for turbulence, convective activity, icing, volcanic ash, and dust storms.

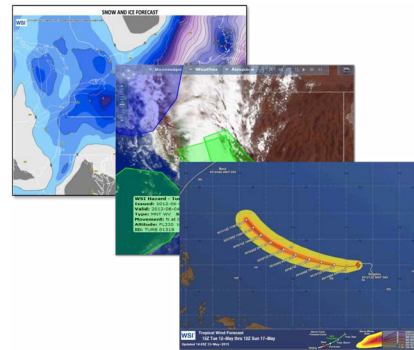
- **TWC Flight Plan Guidance (FPGs):** Provides a 12-hour forecast of global enroute hazards for altitudes ranging from the surface to FL500 (50,000 ft), depending upon the geographic area. FPGs are updated every 3 hours and as needed to ensure operators plan the most optimal and safe routes around hazards including turbulence, convection, icing and volcanic ash.
- **TWC SIGMETs:** When enroute hazards exceed preset thresholds such as intensity or aerial coverage, The Weather Company will issue a significant meteorological advisory or SIGMET. SIGMET guidance is provided graphically as well as in formatted text messages for significant hazards from turbulence, convection, icing and volcanic ash.
- **ETOPS Icing charts:** Provides icing potential at 10,000ft MSL for major oceanic routes to better assess ETOPS icing penalties.
- **Minimum Equipment List (MEL) decision support:** Dispatchers and equipment managers need to make frequent decisions on MEL-restricted aircraft. The Weather Company's aviation meteorologists have the tools and knowledge to assist in making the safest, most economical decisions for the affected flight.
- **Polar Operations:** The Weather Company produces a variety of products and services to enable dispatchers to plan polar operations including a solar activity message, minimum temperature forecasts at arctic ETOPS alternates, and graphical fuel freeze forecasts, among others.

Irregular Operations

For extraordinary weather situations that may force airlines into irregular operations, The Weather Company offers several services.

Tropical Event Guidance

- **Tropical Alert Messages:** The Weather Company issues tropical alert messages within one hour of government alerts that provide tropical cyclone position and intensity forecast discussions out to five days.
- **Tropical Risk Table:** To assist decision makers in planning operations, The Weather Company creates a product describing the level of risk concerning the strength of the cyclone and its proximity in reference to strategic airport locations.
- **Decision support services:** Interact directly with The Weather Company's meteorologists on the expected ramifications of an approaching tropical cyclone at key airports.



Winter Storm Support

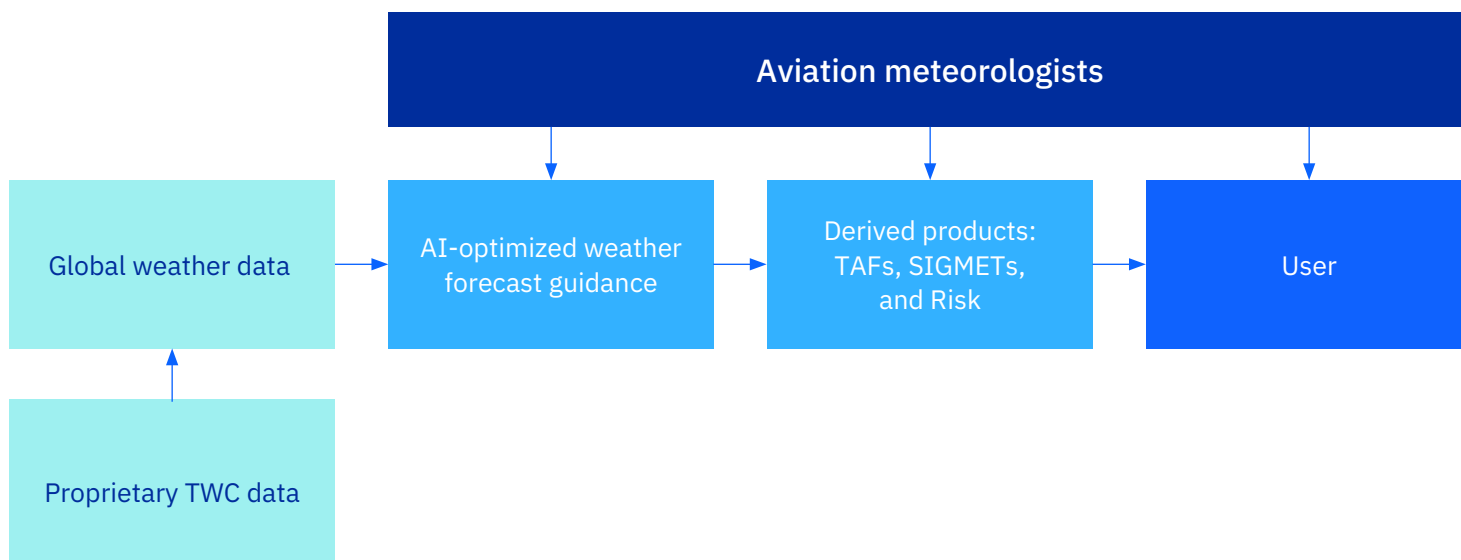
- **Decision support services:** To gain early insight into the potential impacts of disruptive winter storms, interact directly with The Weather Company's meteorologists on snow and ice intensities, event timing, winds, temperatures and confidence levels.

Convective Weather Events

- **Decision support services:** Consult directly with The Weather Company's meteorologists to determine the impact of convective weather for enroute or TRACON sectors as well as airport flight and ground operations.

The Weather Company difference

The Weather Company forecasting process



The Weather Company's forecast methodology combines the widest array of public and proprietary data with the latest automated forecasting technology to optimize the accuracy and value of our forecast products. This includes IBM GRAF, the world's only hourly-updating, high-resolution, global model that provides critical forecast guidance for short- and long-haul operations.

The Weather Company's meteorologists are routinely checked on their forecast verification and performances. By using a systematic forecast verification system, our meteorologists can receive real-time feedback on their skills based on location, time period and other parameters. These results are reviewed and are used to focus and identify where improvements are needed.

Embedded Meteorology Support solution

For airlines seeking enhanced, dedicated meteorology support, The Weather Company offers a proven solution used by numerous global airlines. The addition of onsite meteorologists within an airline's operations center provides superior real-time, on-demand weather consultation and insights on impactful weather and irregular operations supporting dispatchers, ground operations and airline management.

Leading-edge R&D team

The Weather Company is actively engaged in the meteorological research community to identify emerging technology that can be leveraged towards improving flight operations and safety. The Weather Company is investing considerable R&D resources to improve our forecasting capabilities including convective weather forecasting, severe storm detection and prediction, terminal area forecasting, and global aviation hazards. These innovations are a key component of The Weather Company's overall aviation weather program and a source for several current and future products to improve airline operations. These continuous investments in state-of-the-science weather forecasting technologies have led to The Weather Company being named the most accurate weather forecaster overall, year after year by the leading independent forecast assessment service, ForecastWatch¹

Proven products for airlines

FPGs, SIGMETs, and other value-added forecasts are available via proven dispatch and crew products such as Pilotbrief®, and Fusion. In addition, The Weather Company can provide standard XML and WMO formats via diverse communication paths for delivery to existing enterprise systems.

¹ ForecastWatch, Global and Regional Weather Forecast Accuracy Overview, 2017-2022, <https://forecastwatch.com/AccuracyOverview2017-2022>, commissioned by IBM



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