

The logo for DTn, featuring the letters 'DTn' in a bold, black, sans-serif font. A small blue circle with a white dot inside is positioned above the 'n'. The logo is set against a white background that is partially enclosed by a large, thin blue circle on the left side of the page.

DTn

MetConsole Low Level Windshear Alert System



The Most Reliable Windshear Detection System

Quick and accurate detection of windshear events is paramount to ensuring aviation safety. During take-off and landing, an aircraft encountering substantial differences in wind speed and/or direction over relatively short distances can result in the pilot losing control and crashing.

- Enhance efficiencies by automating processes and reducing staff workload.
- Increase safety by reducing the risk of human error.
- Decrease delays and weather-related cancellations.
- Ensure compliance with required guidelines and regulations.

One solution for all weather conditions

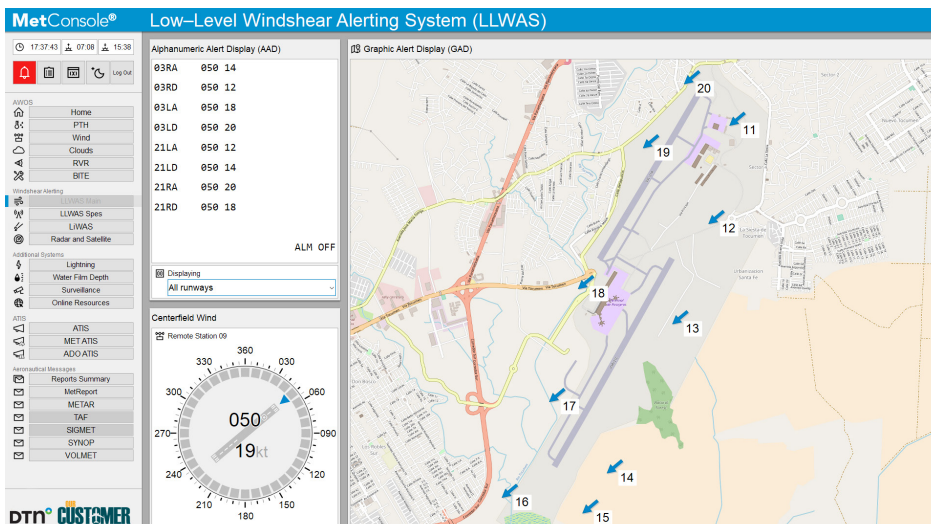
The MetConsole[®] Low Level Windshear Alerting System (LLWAS) is a module of the MetConsole Aviation Weather Suite. The MetConsole LLWAS operates by collecting real-time wind speed and direction readings from a carefully placed array of wind observation stations around the airport runway. Using MetConsole LLWAS provides you the freedom to select any brand of wind sensor because it is a sensor independent solution.

Wind information is processed by a redundant central computing system to determine the location and strength of dangerous and disruptive windshear and microburst events. MetConsole LLWAS uses the US FAA-approved Phase-3 LLWAS Algorithm originally developed by the University Corporation for Atmospheric Research (UCAR).

The area covered by the LLWAS can be extended by adding new wind stations — this can be achieved at any moment during the whole lifecycle of the system. Relying on an anemometer-based network provides an appropriate probability of detection (POD) in “all-weather conditions”: in-situ detection systems such as MetConsole LLWAS have the best windshear detection performance since they are not dependent on light or radio frequency scatters (e.g. aerosols or precipitation). The anemometer-based MetConsole LLWAS is the only type of shear detection system on the market capable of detecting both dry and wet windshear events, in all atmospheric conditions.

MetConsole LLWAS data can be integrated with other systems available via the MetConsole Aviation Weather Suite. The other modules include Automatic Weather Observing Systems (AWOS) or the Automatic Terminal Information System (ATIS). MetConsole features a powerful, flexible and highly configurable GUI that allows any combination of “screen objects” to customize the appearance of both the information and real-time alerts.

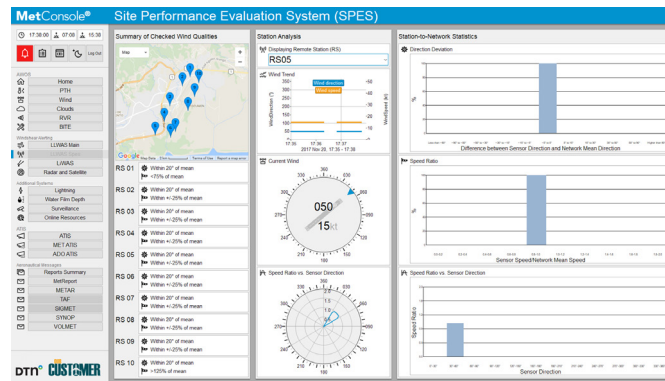
Shear alerts are issued when the expected headwind change along the runway corridor is higher than 7.5 m/s (15 kt) and they are evaluated every 10 seconds as long as this condition is satisfied. This way, MetConsole LLWAS is totally compliant with ICAO Annex 3 recommendations for Automated Windshear Alerting Systems.



The main screen of the MetConsole LLWAS solution

The SPES module

MetConsole LLWAS brings other unique capabilities, such as the Site Performance Evaluation System (SPES), a further enhancement that improves the ability of the system to correctly detect windshear and reduce the probability of false alarms. This module implements an algorithm developed by the MIT Lincoln Lab (ATC-207) for continuous evaluation of the quality of data coming in from the remote wind stations.



The SPES Module on MetConsole

Windshear alerts integration algorithm

The wind shear alerts integration algorithm allows the merging of windshear alerts generated by different sources (LLWAS, Radar and LiDAR) in a single set of alerts. This improves the POD and reduce the false alarm ratio (FAR) of the alerting system, while providing a single source of information to the Air Traffic Controllers (ATC), based on the algorithm developed by the MIT Lincoln Lab (ATC-187) for the integration of windshear alerts of TDWR and LLWAS systems.

Install your system

The MetConsole Aviation Weather Suite is designed to allow customers to deploy customized systems to meet local requirements. One LLWAS system is different from the next and DTN enables the flexibility and customizability via MetConsole to ensure you deploy the system you need.

The LiWAS features a long list of benefits including:

- A flexible scanning strategy
- Easy implementation
- Mid-range coverage (up to 10 km)
- High spatial resolution
- Full integration with the rest of the DTN Weather Systems

The LiWAS was initially conceived as an enhancement to LLWAS networks. It is a state-of-the-art solution to track headwind changes by using a Light Detection And Ranging (LiDAR) remote sensing system, and it may work independently or can be integrated with LLWAS thanks to the Windshear Alerts Integration Algorithm.

Reduce windshear concerns today

www.dtn.com