DTN MetConsole® Low Level Wind Shear Alert System (LLWAS)

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.

DTN LLWAS will help you:

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

DTN MetConsole LLWAS

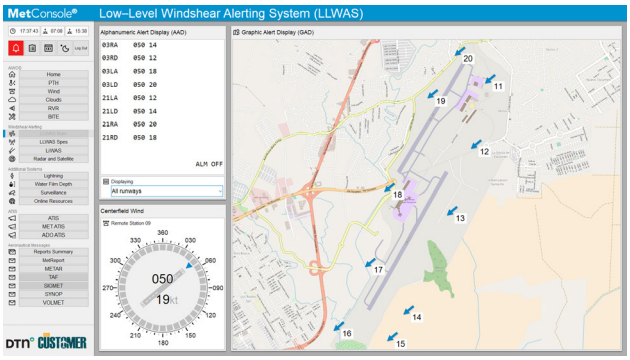
One solution for all possible weather conditions

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.

The 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.

Because our solution is software centric, the information produced by MetConsole LLWAS 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.



The main screen of the MetConsole LLWAS solution

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 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.

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 provides 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.

DTN MetConsole LLWAS

Install your system

The entire 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.

Concerned customers can go beyond and step into a new level with the DTN LiDAR Windshear Alerting System (LiWAS).

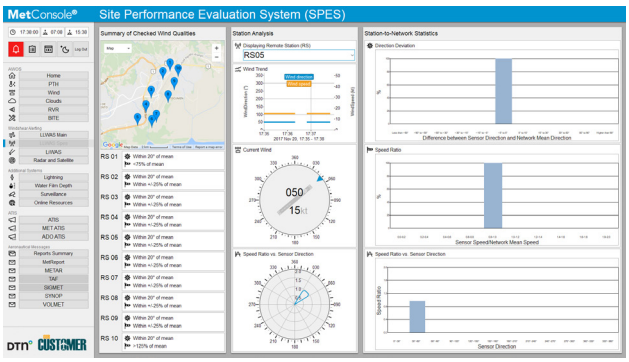
The LiWAS was initially conceived as an enhancement to LLWAS networks. It is a state-of-the-art solution to track headwind changes by using a Light Detection And Ranging (LiDAR) remote sensing system, and it may work independently or integrated with LLWAS thanks to the Windshear Alerts Integration Algorithm.

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

About us

DTN has more than 35 years of experience in Weather Systems and an extensive knowledge about Low Level Windshear Detection and Alerting Systems. As it can be consulted on the UCAR website, DTN was the first company in the market in being licensee of the UCAR LLWAS Phase-3 algorithm (since 1996, under the trade name Telvent Almos). This fact allowed DTN to acquire the knowledge when the FAA windshear program was still in development, learning directly from the scientists that were involved and who developed the currently used windshear detection algorithms.



The SPES Module on MetConsole

About us

DTN has been in the Weather Systems business for more than 35 years, providing high value products to comply with the most rigorous standards of its customers.

In particular, DTN's Aviation Weather Solutions have been installed and integrated in more than 300 airports worldwide already.

Get to know DTN LLWAS and the rest of DTN Weather Solutions at www.dtn.com or contact us at+31 345 544 080.

DTN is a full member of:

EUROCAE & HMEI

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