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# Vaisala AviMet® – Weather at your service

Safety is the key priority in aviation. Accurate weather information is vital in ensuring the safety of airport operations. Properly managed weather information can also significantly improve airport operations and may have a considerable impact on an airport's capacity and efficiency.

In the future, weather information will be used even more extensively to support all activities and all phases of aviation operations at airports. In the weather systems field, this means a change from automated weather observing systems to total weather information solutions. To be prepared for the upcoming challenge, Vaisala introduces the Vaisala AviMet® - a total aviation weather management solution that bridges the gap between meteorological and air traffic management communities.

## Massive increase in air travel

Many things have changed in the past 30+ years that Vaisala Aviation Weather has been in the business of delivering weather observation systems to airports. There has been a massive increase in air travel in recent years. Accurate, timely and reliable weather information has continued to be a key factor in ensuring

that planes can take off and land safely in various weather conditions.

With the ongoing increase in air traffic, airports are under pressure to enhance their efficiency. Airport weather measurement systems are no exception. Recent studies show that weather contributes to more than 40% of all airline delays in the USA. To minimize the effect of weather on airport operations, the weather systems and solutions should ensure the users get a complete picture of the weather and its impacts. The weather information provided should also support each user's specific needs. Weather data should move freely between aviation weather service providers, airlines, air traffic management operators, and airports.

## AviMet® in a nutshell

Making the best use of all resources at an airport means synchronizing the actions of all groups. It must also be taken into account that weather influences various airport operations in different ways. To gain maximum efficiency, weather data should be provided in an optimal format for each user group, from maintenance teams to the air traffic control tower.

Vaisala's vast experience in all weather-related airport activities has produced solutions for the most demanding



*A customer-specific controller's display was designed for the FAA Runway Visual Range System using Vaisala AviMet's new display development tools.*

environments. Vaisala AviMet® is a weather management system that supports customers' decision-making processes and improves the airport's performance.

The heart of any reliable aviation weather system is reliable measurements around the aerodrome. Vaisala AviMet's system architecture allows the use of a multitude of measurements. In all cases, the specific measurements and measurement locations are decided based on the user needs. For example, additional sensors may be placed outside of the aerodrome in order to offer nowcasting capabilities.

The Vaisala AviMet® weather management system supports a host of aviation applications. With meteorological data acquisition, validation, calculation, distribution and storage capabilities, AviMet® works equally well with centralized, de-centralized and networked airport environments – preparing the airport for future expansion. All Vaisala AviMet® solutions are designed in accordance with relevant ICAO and WMO recommendations and regulations.

### Interoperability with other airport systems

As the need for real-time decision-making increases, requirements for the supporting tools also change. The primary requirement is for seamless co-operation. Meeting international standards is an important step in achieving interoperability. Vaisala strongly supports standardization efforts from organizations such as ICAO, WMO, EUROCONTROL, EUROCAE and SAE.

Vaisala AviMet® has been designed from the start to work seamlessly with other airport systems. It is not only a meteorological tool; it supports AFTN, AMHS and other aeronautical standards including the Aeronautical Information Exchange Model (AIXM) and the related Aeronautical Information Conceptual Model (AICM). Vaisala AviMet® will also support the corresponding weather information concept, as soon as the standard is released.

Another important aspect of interoperability is the concept of single seat display. Vaisala AviMet® can integrate data from other airport systems and make it available for AviMet® displays anywhere

Vaisala AviMet® display showing airport weather information in night-time conditions.

at the airport. This technology allows airports to reduce the number of displays required, creating more ergonomically designed work environments.



### We are reliable

The availability of weather information is of key importance at any airport. To make sure that data is always available, Vaisala AviMet® solutions are designed to ensure fault tolerant operations.

System reliability is not enough. Customers pay most attention to the reliability of the total solution including the company, its offering and its services. Vaisala is the world's largest manufacturer of aviation weather solutions with close to 100 deliveries each year. The one thing that Vaisala people are most proud of is our spotless history of successful aviation weather system and solution deliveries.

### Challenge us!

During past years, Vaisala has taken on the responsibility of delivering turnkey aviation weather solutions and maintaining these systems throughout their

lifecycle. This is the trend we want to continue.

Traditionally, aviation weather observations have been understood as an ICAO mandated AWOS system with sensors placed along the runways. However, weather affects all airport operations, not only air traffic control. Vaisala AviMet® solutions can be used to support de-icing decision-making, runway maintenance operations - to name but a few. Whatever the weather challenge may be, Vaisala's approach is to work jointly with our customers to find the best possible solution. Vaisala AviMet® is a platform that easily adapts to varying situations.

We believe that our most demanding customer is also our best customer, challenging us to improve our performance over and over again. Do you have a challenge that would make you our best customer? Please contact [aviationsales@vaisala.com](mailto:aviationsales@vaisala.com) ■

Weather's share of delayed flights at major US airports (Sept 2006 – Feb 2007).							
	September	October	November	December	January	February	Total
<b>Weather Delay</b>							
Number of Delays	58,124	70,849	58,346	66,131	68,189	65,894	387,533
% of Total Delayed Operations	45.44%	46.29%	45.95%	42.09%	45.55%	41.68%	44.40%
Delayed Minutes	3,160,988	3,787,477	3,000,199	3,664,527	3,493,291	3,623,135	20,729,617
% of Total Delayed Minutes	44.98%	45.48%	45.38%	42.12%	44.61%	40.86%	43.76%
<b>Non-Weather Delay</b>							
Number of Delays	69,776	82,218	68,644	90,997	81,526	92,219	485,388
% of Total Delayed Operations	54.56%	53.71%	54.05%	57.91%	54.45%	58.32%	55.60%
Delayed Minutes	3,867,334	4,541,111	3,611,097	5,035,967	4,338,151	5,244,055	26,637,715
% of Total Delayed Minutes	55.02%	54.52%	54.62%	57.88%	55.39%	59.14%	56.24%

A flight is considered delayed when it arrives 15 or more minutes off the schedule. Delayed minutes are calculated for delayed flights only. When multiple causes are assigned to one delayed flight, each cause is prorated based on delayed minutes it is responsible for. The displayed numbers are rounded and may not add up to the total.

Source: US Bureau of Transportation Statistics, Airline Service Quality Performance 234, [www.transtats.bts.gov](http://www.transtats.bts.gov)