

NOW, WHERE WAS THE TURBULENCE?

News / Airlines



A good flight is the one that is on time and has not been whipped around by turbulence. Here Swedish AVTECH comes into the picture with its advanced technology to predict invisible turbulence and bad weather. It's the only weather service on the market based on the high definition weather data from UK's Met Office.

AVTECH was formerly a research institute and not an actual developer of commercially available aviation software. During its 25 years in operation, the company has gained a rock-solid technical knowledge of the many diverse aspects of aviation, which has now transformed into a series of patented, weather related services providing airline pilots tools to make optimal decisions during a flight and to assist in many aspects of route planning.

“Our SIGMA service goes beyond normal weather reports, since it's the only service that has access to UK's Met Office's high definition weather data”, says Niklaes Persson, Business Unit Director, R&D. “Combined with our patented algorithms, SIGMA can predict weather hazards with an accuracy of only 10 km, individually for any flight. Normally the pilots have access to a global weather grid that covers a very coarse area of 140 km.”

Significant fuel savings

The information from the Sigma service is supplementary to the normal weather sources approved by the authorities; SWC and SIGMETs.

“The source is the same, but the information is more in detail and related to individual flights”, says David Rytter, Chief Technical Officer. “The big benefits with more precise weather hazard information are better safety through turbulence avoidance and reduced fuel costs.”

Sigma and various other of AVTECH’s products have been thoroughly tested by, for instance, Norwegian and Lufthansa Cargo.

“They have both reported significant fuel savings, because the pilots have been able to avoid bad weather and unfavorable winds better than before”, Rytter says. “The system shouldn’t be too hard on the wallet either, since the cost per flight to upgrade to our service amounts to about the price of a cup of coffee.”



Now with a graphical interface

SIGMA is available as a part of the normal Flight Management System, but the real magic starts to happen when you use the new iPad app named AVTECH proFLIGHT, with its easy-to-use graphical interface.

“The interface shows both the horizontal and vertical views and makes it easy for the pilot to decide on how to avoid bad weather, wind and turbulence”, Niklaes Persson says. “All the required weather-related information for a specific trajectory is presented graphically in real time. The same weather data can of course be printed out also on the ACARS printer along with the normal SIGMET report.”

Persson points out that it’s now very easy for pilots to test the app, since it’s free for use for a trial period of three months.

“It’s as easy as downloading the demo from Appstore and signing up for a trial”, he says. “Being a commercial airline pilot myself, I must say it has been a joy to develop this product together with our skilled programmers.”

High definition weather vs. standard weather

The International Civil Aviation Organization (ICAO) has agreed that the Met Office and its American equivalent NOAA (National Oceanic Atmospheric Administration) gather the meteorological information worldwide and produce the weather charts for global aviation as a standard service.

“Now Met Office has invested some 100 million pounds in computing power and can more accurately than before predict when and where the jet streams change their speed or aren’t straight”, David Rytter says. “When this happens, it churns up the air in the same way as changes in a river’s flow cause turbulence in the water. We process this data in our SIGMA service and can distribute up-to-date weather forecasts tailored to any flight’s trajectory and timeline.”



11 DECEMBER 2018

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