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Hot Topics

Airplanes as weathermen

IT from Lufthansa Systems improves weather forecasts for airlines

Winter weather with icy temperatures and snow, wind or thunderstorms can have an influence on the routing that is planned for a specific flight. That is why precise weather information is essential when airlines calculate the optimal route in terms of time, fuel and costs. But the common weather forecasts as we know them are of limited use for flight planning systems such as Lido OC because they concentrate only on the weather on ground. Airport weather is in fact important for take-off and landing but for route optimization upper air data of various heights are required.

To improve such weather forecasts, more than 280 aircraft in the Lufthansa fleet are able to collect weather data for Germany's National Meteorological Service (Deutscher Wetterdienst, or DWD). Lufthansa Systems is responsible for the coordination with the DWD and developed the software for processing data collected by aircraft and transferring them to DWD. These data increase the accuracy of weather forecasts.

Aircraft Meteorological Data Relay, or AMDAR, is a system for collecting weather data during a flight. LH Passage, LH Cargo, LH Cityline and the DWD have worked closely together with Lufthansa Systems in this field since 1999. Each day, around 950 queries are sent to aircraft and over 28,000 weather reports are prepared for the DWD. The DWD feeds the AMDAR data into their numerical weather prediction systems in order to calculate the weather forecasts for all German airports. Further the data are distributed to weather services worldwide. For aviation the ICAO World Area Forecast Centers in London and Washington are using the Lufthansa AMDAR data for forecasting the upper air winds and temperature, which are used in Lido OC for route optimization.

Since pilots themselves need information like barometric pressure, air temperature and wind speed, aircraft are already equipped with measurement devices, and no extra weather sensors or hardware are needed on board to collect AMDAR data but special software is required. Through an online portal, the DWD can request measurements and specify its requirements. The E-AMDAR Data Optimization System (E-ADOS) from Lufthansa Systems then selects the flights, which fit best to the requested profile from all available flights in order to prevent redundant measurements. The measurements are activated on board via a data link transaction and carried out at the specified intervals. Optimizing this process has reduced the number of reports and the costs associated with them by 40% this year. The individual measurements are pooled together on board and sent to the ground system together with the date, time, phase of flight, flight number, aircraft ID and geographic coordinates. On the ground, these data are made anonymous and formatted for the DWD before being forwarded to the customer.

Lufthansa Systems mainly provides the DWD with meteorological data from Germany and Eastern Europe as well as from data sparse areas in Asia and the South Atlantic. Lufthansa Systems in close cooperation with the European AMDAR project is currently talking with some European airlines, which are interested to collect weather data with their aircraft as well. This would increase the accuracy of aviation weather forecasts in other countries and thus enable airlines to further improve the optimization of routes.

Lufthansa Systems increases airlines' operational flexibility

Loadsheet on Workpad provides vital take-off data to pilots

Shortly before a flight takes off, the captain receives a load sheet in the cockpit. This document states the aircraft's load status, weight, number of passengers, distribution of cargo and center of gravity, among other things. Such information is critical for the crew to enter the right settings so as to ensure a safe position of the plane in the air. Any interruption to the transfer of this data, such as in the main computer server or the communication links, would make it impossible to automatically generate the load sheet, in which case the cockpit crew would have to prepare it manually. To avoid this, Lufthansa Systems together with Lufthansa German Airlines developed an IT-based solution for cockpit crews which is independent of other systems.

With this, the flight crew enters basic information on the flight, aircraft, passengers, fuel and distribution of cargo and the user-friendly system produces a load sheet containing all the relevant data. The solution is already in use with Lufthansa. The Loadsheet on Workpad solution downloads the underlying data required for the weight & balance process to a laptop computer for offline use. This data is refreshed via the normal update procedure of the Pilot's Workpad on the ground. Lufthansa Systems uploads the data on a central server.

When connected to this server, the system updates the relevant information during flight preparations. This ensures that flight crews always have valid data at their disposal. As flight crews are now able to create load sheets conveniently on their own, the new solution helps airlines guarantee the mobility of their fleet in the rare event of disruptions in communication links.

News

KLM cityhopper and Lufthansa Systems extend cooperation in crew management and operations control

KLM cityhopper continues to optimize its crew management and operations control using NetLine/Crew, NetLine/Ops and NetLine/Ops Maintenance Control from Lufthansa Systems for another three years. A contract to this effect was recently signed between the two partners. This agreement extends the good, trust-based cooperation between the Dutch airline and the IT provider which started in 2001. NetLine/Crew covers all aspects of crew management and ensures the efficient use of crew resources. KLM cityhopper uses NetLine/Ops and NetLine/Ops Maintenance Control in order to optimize the day-to-day operation, considering the aircraft utilization as well as maintenance issues.

The integrated use of the NetLine products allows the Dutch airline to gain flexibility in its operations and to explore additional cost saving potentials. KLM cityhopper will be able to quickly and reliably run through various scenarios, generate plans and make decisions. This is made possible by the high degree of automation and the flexibility of the solution which has secured a leading position in its segment.

KLM cityhopper is a 100% subsidiary of KLM, part of the Air-France-KLM group. The airline runs a large part of the European network of KLM. Within the KLM framework, KLM cityhopper runs 270 flights a day to 45 destinations. In addition, the Dutch airline also offers customised ad hoc flights to third parties. Its fleet consists of 53 aircraft, including 2 Embraer 190, 18 Fokker 100, 21 Fokker 70 and 12 Fokker 50.

Tunisair plans flights with Lido OC **Ten-year contract for leading dispatch solution from Lufthansa Systems**

Tunisair, Tunisia's largest airline, is going to use the flight dispatch solution Lido Operations Center (Lido OC) from Lufthansa Systems for the next ten years. The airline's IT subsidiary, AISA, and Lufthansa Systems concluded the landmark contract which will enable the carrier to realize significant efficiency gains by optimizing flight routes and saving fuel and emissions. Raouf Khelil, Operational Logistics Director at Tunisair, explained the management's decision: "In the current economic environment, it is important for us to check all options to enhance the efficiency of our operations. Lido OC is the only solution on the market that can achieve the savings in fuel and emissions we were aiming at. It even opens up new opportunities for reduced air traffic control charges and other expenses, so it will directly have an impact on our operating costs." Matthias van Leeuwen, Senior Vice President Sales EMEA South at Lufthansa Systems, said, "We welcome Tunisair as our latest Lido OC user. By implementing this modern solution, Tunisair is taking a leadership role in the region in terms of operational efficiency. It is an excellent investment in the future." Lido OC fully meets the requirements for safe and reliable flight operations that are at the core of any airline's operations. Beyond this basic prerequisite, the solution delivers utmost flexibility and opportunities to reduce costs. With its modern technology and user-friendly architecture, Lido OC covers all aspects of flight planning and the associated follow-up processes. Drawing on its own database, Lido OC automatically calculates the ideal route between two airports and creates reliable and easy-to-understand briefing documents for each flight. Crews can access the briefing documents provided by the Lido Briefing module over the Internet using a PC or laptop and a Web browser. Tunisair celebrated its 60th anniversary last year. The Tunis-based carrier flies 30 modern aircraft to over 47 destinations in Africa, the Middle East and Europe.

Meet Lufthansa Systems

If you would like to talk to one of our IT experts about any specific solution in detail, we would be happy to coordinate a meeting. You can find us at the following events:

Name of Event	Date, Location	Solutions presented
Loyalty 2009	February 10-11, 2009 Vienna, Austria	FrequentLine
Hamburger Strategietage 2009	February 12-13, 2009 Hamburg, Germany	Solutions for Media, Logistics and Industry, as well as a presentation on IT security standards
Network USA 2009	March 1-3, 2009 Dallas/Fort Worth, Texas, USA	NetLine/Plan