



**BIG
FLYING
DATA**



Data is becoming a relevant factor in virtually every sector of the economy, including aviation. But who does it belong to, and how can it be put to meaningful use? With its digital platform AVIATAR, Lufthansa Technik has the answers.

Aircraft today are flying computers. As well as processing a vast amount of digital information, they are constantly producing new data themselves. Whether speed, altitude, air pressure, or the temperature and performance of the engines – all these parameters are recorded by sensors. A modern long-haul aircraft like the Airbus A350 already produces more than a terabyte of data per flight. That is roughly equivalent to the storage capacity of a typical laptop. The proportion of such aircraft in operation is currently still small. However, this will change massively in the future when more new aircraft types such as the Boeing 777X or the 737 Max join the airlines' fleets. These fully digitized aircraft will give operators a whole new understanding of their operating patterns. An abundance of information that will enable airlines to better understand their fleets' technical performance in the future.

Predict, prepare, and protect

But what can these volumes of data be used for? One important application is forecasting servicing and maintenance events. Predictive maintenance enables aircraft operators to minimize unscheduled aircraft downtime, which typically involves very high costs and operational challenges. The data also provides new ways to analyze the status and failure of systems and components. If, for example, a particular component fails

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on multiple aircraft with a similar operational profile after a similar number of flight hours, predictive maintenance systems can detect similar patterns. The relevant components can then be replaced on comparable aircraft before the critical number of operating hours is reached, avoiding unnecessary aircraft on ground (AOG) events. This also saves costs because repairs do not have to be carried out far from a base, no unscheduled spare parts need to be procured, and no replacement aircraft is required. In addition, the number of delayed or even cancelled flights can be kept to a minimum. And in an age of constant customer evaluations, satisfied passengers are certainly not a factor to be neglected.

Own and control your data

Before the data can be used in this way, however, The platform must first be stored and processed. Lufthansa Technik has launched the AVIATAR digital platform and the Aviation DataHub for this purpose, open to all companies in the airline industry. It not only stores data generated in the air, but all information related to airline operations with a clear focus on technical and flight data. What makes it special: Unlike the large airframer data platforms, the information remains under the aircraft operator's control. "The operational data belongs to the airlines, not the manufacturers," says Dr. Johannes Bussmann, CEO of Lufthansa Technik." AVIATAR and the Aviation DataHub offer airlines, lessors, and OEMs the option to store their data securely and access it at any time. What happens to this data and who can view it is completely in the hands of the organization

that owns the data. This makes AVIATAR the only platform for the global aviation industry where customers can decide who has access to flight and technical data. To make it clear that Lufthansa Technik claims no sovereignty over the data, the Aviation DataHub is open to all aviation companies. "At present, Lufthansa Technik is still the majority shareholder," says Dr. Bussmann, "but in the future, other partners could participate to strengthen the platform's neutrality further."

Unleash the power of data

For the data collected to become truly meaningful, it must be analyzed, monitored, and tracked. For this, Lufthansa Technik relies on AVIATAR, its digital platform for differentiated data analysis. With Condition Monitoring, for example, customers can monitor their fleet. Maintenance planning applications generate service forecasts with a single click, and other solutions allow airlines to manage layovers and order spare parts. At present, the platform already collects data from several thousand aircraft – and the number is rising. The decisive difference to the competition: the open and neutral concept with a strong focus on MRO and technical operations. AVIATAR is not only open to airlines and lessors but also to other providers of aircraft technical services such as OEMs or other MRO providers. "We consider competition to be good for business," says Frank Martens, senior director of sales for AVIATAR and Digital Products at Lufthansa Technik. "And if the best solution prevails in the long run, then every market participant benefits."

That's why AVIATAR is designed as a digital ecosystem in which digital solutions and services from other providers are available alongside Lufthansa Technik's services. Frank Martens is convinced: "With AVIATAR, we are offering a digital power platform to shape the future of aviation – not only for, but together with our clients."

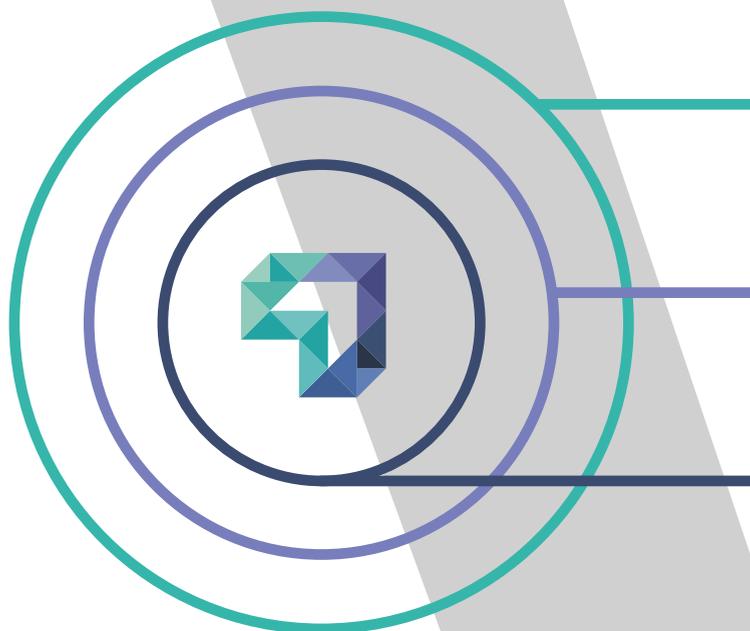
On the way to a new dimension in maintenance

AVIATAR currently brings together a unique variety of solutions and digital services. Each of them represents a valuable tool for improving MRO services. But above all, the interaction of the different digital products provides a unique synergy for airline technical operations that no other platform in the industry can offer. The advantage for customers: They can put together a customized digital service that exactly meets their needs. This is not insignificant, considering that more than half of airlines' total operating costs are related to MRO services. With predictor plugins, reliability management, condition monitoring, fleet management, event analytics and technical logbook solutions, the range of AVIATAR services has grown continuously since its launch in mid-2017.

Bridging the digital and physical worlds

Digital solutions and data-driven insights are, however, only one part of the solution. To truly deliver on the promise of predictive maintenance, you need the capacity to actually perform a repair. Here, Lufthansa Technik offers a unique combination of prediction and fulfillment. "We are currently the only provider that can translate the data analysis into action," says Frank Martens. "If the analysis of the data identifies a weak component, we can replace it directly during the next check or improve it on all identical aircraft in a fleet. We can also use the data generated when the component is repaired in our workshops to optimize the algorithms. This makes AVIATAR the ideal platform for airlines because it combines Lufthansa Technik's decades of engineering expertise with Silicon Valley-style data science know-how. The result is a unique value creation chain for customers in which predictive maintenance and automated fulfillment are seamlessly intertwined."

Discover some of our solutions



MONITOR & DETECT

Prioritize the technical health of your fleet in real time and manage recommended actions



PLAN & OPTIMIZE

Improve your tech-ops efficiency and planning capabilities



PREDICT & RECOMMEND

Avoid AOGs, operational delays and flight cancellations, and increase reliability

