DATA MANAGEMENT

The future of aviation data management:
on the ground and in the air

By Marek Rakowski, Senior Manager Product & Strategy, SITA FOR AIRCRAFT

Each new generation of aircraft taking to our skies is more technically advanced and data-driven than the last. Where legacy fleets were limited in their data acquisition and offload capabilities, operators of new generation aircraft are producing data like never before.

Through the thousands of sensors modern aircraft carry onboard, along with the latest connectivity links and intelligent data management systems, it is now possible for airlines to extract the full value of data and enhance their connected aircraft operations. The challenge for airlines, however, is putting this into practice.

THE PATH OF CONNECTED DATA

Marek Rakowski, Senior Manager Product and Strategy at SITA FOR AIRCRAFT, explains: "Aircraft data management begins with the aggregation of data from multiple sources onboard the aircraft, including aircraft interface devices and avionics systems. This data is then categorized, handled and encrypted before it is sent to the ground.

"However, airlines can choose when this aircraft data is used. Data can either be packaged and routed to the ground for later use, or it can be processed directly on the aircraft for pilot or crew applications."

But what do data management advances, enabled by SITA FOR AIRCRAFT's neutral and secure connectivity provision, mean for airlines, original equipment manufacturers (OEMs) and maintenance, repair and overhaul operatives (MROs)?

THE BENEFITS OF SEAMLESS DATA EXCHANGE

As Marek sees it: "There are two clear benefits of enhanced data management enabled through advanced connectivity and pragmatic data management principles.

"On the aircraft, there are immediate operational benefits for the aircraft by enabling onboard connectivity to support data exchanges. These include reducing fuel consumption, optimizing flight routing, and profiting from real-time weather updates.

"As for data management on the ground, there are major advantages for maintenance processes as it becomes easier to understand and predict component wear and failure, and position replacement parts appropriately – thereby avoiding aircraft-on-ground (AOG) type situations."

Marek adds: "If airlines don't take advantage of the new data parameters being provided by next generation aircraft and seamless connectivity, they are going to miss significant opportunities to optimize their operations. However, airlines also need to be smart in how they manage and share data with their OEM, MRO or software provider to

maximize the potential of what in fact is their own aircraft data."

While airlines are conscious of their data's value, issues associated with flight safety or pilot performance are often packaged up in big data sets, thereby requiring careful handling. Because of this, many airlines have formed data committees to better manage data exchange practices. Increasing OEM requests for airline data also mean that airlines are often compelled to embark on many individual time- and resource-intensive projects, to distribute data to different parties.

For this reason, airlines are seeking simplicity, and a removal of the complexity involved in dealing with multiple suppliers, IT integration projects, and the associated costs these bring.

WHAT ARE THE LIMITATIONS TO CURRENT AIRCRAFT DATA EXCHANGE PRACTICES?

While there currently exist a range of methods for airlines to harness and share data, most come with significant disadvantages for airlines. One option is for an airline to form bespoke, one-to-one relationships with their OEMs, MROs or other partners. A disadvantage of this is that the onus is then on the airline to create and manage each relationship individually, which comes with its own time, cost, and IT resource implications.

Many other frequently adopted options require airlines to put aircraft data fully into the hands of one external entity and thus lose control over who can access it and in what way. As Marek explains: "The data belongs to the airlines first and foremost. Airlines should be able to have access to all of the data being offloaded from the aircraft, not only a specific subset, and at a price."

THE FUTURE OF AIRCRAFT DATA EXCHANGE

SITA FOR AIRCRAFT is already connected to most airlines around the world, many of whom have trusted the company for decades to manage their data as a neutral partner.

Marek explains: "No matter what the communications link, SITA FOR AIRCRAFT can help airlines extract benefits from data without the hassle of setting up their own infrastructure to handle large data volumes or deal with third party integration considerations. When it comes to data management, regardless of the network being used, SITA FOR AIRCRAFT can secure data, analyze and decode that data, and leave the customer in control of the data to use as they wish."

He adds: "SITA FOR AIRCRAFT has always been synonymous with properly handling customers' data, both in the air and on the ground. SITA FOR AIRCRAFT's expertise in delivering secure and neutral cloud-based aircraft data-brokering services grants airlines the freedom to connect to any aircraft over any link, and remain fully in control of their data.

"In addition, the neutrality of products like e-Aircraft® DataHub, DataCapture®, AppsConnect® and AoIPConnect® allows SITA FOR AIRCRAFT to not only receive data from our direct customers, but from any airline. Our technology on-ground and onboard the aircraft is agnostic, regardless of who the datalink provider is, thus ensuring airlines have full control of their data at all times."

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As the world digitally transforms, the air transport industry has to adapt to meet the demands of the future.

Imagine having access to a global, new generation aircraft communications ecosystem, that makes that digital transformation possible. An ecosystem with in-built reliability, coverage, flexibility and innovation for all aircraft, across every network, simply-delivered.

SITA FOR AIRCRAFT is bringing forth this digital transformation for the air transport industry.

• By enabling the seamless flow of communications

• By understanding safety- and operations-critical processes

• By empowering airlines to harness the value of connected aircraft data

• By enhancing airline operations, and the onboard experience.

This is the next great leap in aircraft communications, and the solution is imminent.

Are you ready?

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