The challenge of unlocking connected aircraft big data

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THE CURRENT CHALLENGE

Despite the advent of the digital age, aircraft safety, flight and maintenance operatives can still be seen striding out onto the tarmac to collect the latest performance data on a flight – manually with a USB stick, and a full week after the flight.

And this is true for many airlines. With around half of current fleets not equipped with automated data collection capabilities, airlines often collect aircraft data manually, as part of overnight maintenance regimes. But this can mean a delay of hours, errors in the collection process, inefficient data mining and a lack of quantifiable metrics.

Marek Rakowksi - Senior Manager, Product & Strategy Aircraft IP Enablement Services at SITA FOR AIRCRAFT, explains: “Currently, losing aircraft data between air-to-ground operations, and long lag times between flights landing and flight ops, safety or maintenance ground analysts receiving the aircraft data, are all too commonplace,” he says.

“Any issues spelled out by aircraft data can only be recognized, and then dealt with, once it has been physically collected, and then transferred and dissected. And of course, flight ops, safety or predictive maintenance activities can only be carried out in response to the rate at which that information becomes available. The trend is for automatic wireless transfers from aircraft to ground. However, existing market solutions require costly investments and authorizations.

“Then there’s the sensitivity of airline data to take into account. Data transfers need to be secured from aircraft-to-ground, with data shared only with authorized internal or external stakeholders.

“In short, the prospect of overcoming these complex hurdles and considerations to achieve your airline’s efficiency aims can seem like an impossible dream. That is, unless a solution is found that can address all those requirements, together.”

THE CHALLENGE

We are in the era of aircraft big data. Over the past 60 years, the volume of data generated by aircraft has rocketed from five parameters in 1958 to 200,000 today – a staggering increase of nearly four million percent.

Airlines increasingly rely on aircraft data to enhance operational efficiencies. To do this, they require effective data management solutions to fully understand their aircraft data and ensure safer operations, on-time departures and arrivals, and improve customer satisfaction. Indeed, SITA FOR AIRCRAFT experts estimate that airlines can sometimes lose up to a quarter (25%) of their aircraft data due to poor management.

SITA FOR AIRCRAFT DataCapture® addresses this challenge.
Furthermore, for multi-fleet airlines, as all fleets require the same level of data management discipline and effectiveness, DataCapture® enables the airline to raise retrofitted fleets to the same level as their modern aircraft.

Rakowski continues: “This is a simple-to-establish, fully-managed solution that will allow airlines to automate critical aircraft data collection processes over ground-to-air connectivity without engaging in time-consuming and costly IT related actions. As such, for many airlines, DataCapture® will greatly improve operations, building on existing investments. No longer will they have to rely on heavy manual processes to maintain and safety check their air fleets. They can do away with the debilitating data delivery lag.

“Effectively and automatically collecting data instantly gives an airline detailed awareness of its fleet’s performance, diagnostics, and incident investigation.

“DataCapture®’s fully-managed automatic aircraft data retrieval allows an airline to improve its flight operations, safety and maintenance, by analyzing its complete aircraft data, on time. This can be achieved without the airline having to invest and worry about data flow management, or IT problems, as SITA FOR AIRCRAFT as a service provider takes care of complete integration and proactive monitoring, from air to ground.

“Moving forward, DataCapture® will be a must-have component of our comprehensive aircraft data management service for any airline fleet, covering ACARS messages collection and new generation aircraft systems.”

To find out more about DataCapture® and our other data management solutions, speak to your local SITA FOR AIRCRAFT contact, or visit www.sita.aero/aircraft today.
ABOUT SITA

SITA is the IT provider for the air transport industry, delivering solutions for airlines, airports, aircraft and governments. Our technology powers more seamless, safe and sustainable air travel. Today, SITA’s solutions drive operational efficiencies at more than 1,000 airports while delivering the promise of the connected aircraft to more than 400 customers on 18,000 aircraft globally. SITA also provides the technology solutions that help more than 40 governments strike the balance of secure borders and seamless travel. Our communications network connects every corner of the globe and bridges 60% of the air transport community’s data exchange. SITA is 100% owned by the industry and driven by its needs. It is one of the most internationally diverse companies, with a presence in 200 countries and territories. SITA’s subsidiaries and joint ventures include SITAONAIR, branded SITA FOR AIRCRAFT, CHAMP Cargosystems and Aviareto.

THE AIR FRANCE USE CASE

Since January 2017, SITA FOR AIRCRAFT has provided DataCapture® to Air France (AF), for its Airbus aircraft. The solution collects vital Quick Access Recorder (QAR) data for the airline’s flight operations quality assurance program.

SITA FOR AIRCRAFT has integrated DataCapture® on the airline’s existing Electronic Flight Bag (EFB) system. This means the airline does not have to invest in new hardware to start automatically collecting aircraft data.

SITA FOR AIRCRAFT has also worked closely with the airline’s flight operations to complete the solution’s ground integration. Key to this was receiving approval for DataCapture®’s state-of-the-art security policies from the airline.

Under its roadmap, AF has also studied its SITA FOR AIRCRAFT onboard AIRCOM® Connect software™, on which the DataCapture® service relies, to enable automatic file exchanges between onboard applications and airline ground systems during the different flight phases. These span everything from EFBs, charts and performance, to flight planning, weather forecasting, and the Aircraft Technical Log.

This enables the airline to manage all exchanges of files, data and configuration between the aircraft, its onboard applications and the ground, from a single user-friendly interface.

DataCapture® was deployed across the airline’s fleet in 2017.