E-AIRCRAFT REALITY

PASSENGERS, AIRLINE AND AIRPORT STAFF SEE I.T. MOVING AT WARP SPEED ON THE GROUND. SO WHEN WILL WE SEE MORE OF IT ONBOARD AIRCRAFT?

ISSUE 2 : 2014

AIR TRANSPORT IT REVIEW ARTICLE
Aircraft have been connected and digitalized for decades. They’ve had to be, to fulfill safety and regulatory requirements.

To do the job, SITA’s solutions have been developed over time to support airline operations, air traffic services and government needs.

**Passenger Demands**

Now, the recent acceleration towards aircraft digitalization comes with the ambition of airlines. For one thing, they’re eager to respond to passenger demand and ever growing requirements for connectivity. That’s because passengers increasingly expect access to data wherever they are. With most people checking their mobile phone 150 times a day, it’s hardly surprising.

**Operational Drivers**

But it’s not just the passenger focus that’s driving aircraft digitalization. It’s also the industry’s ambition to optimize aircraft related operational processes, and to reduce maintenance costs.

Air framers and OEMs (original equipment manufacturers) are playing a part, as they strive to reinforce their presence in the service segment and the provision of ‘fly-by-the-hour’ type programs.

The point is, ubiquitous aircraft connectivity en-route and on the ground has generated high expectations. So why has digital technology been slower to make inroads onboard?

**‘Nose-to-Tail’**

The answer is simple. Complexity. The talk in air transport today is about ‘nose-to-tail, air-to-ground aircraft data exchange’.

That involves everything from connections in the cockpit and cabin, to communications for ground crew, pilots, MROs (maintenance and repair operations) and passengers – along with multiple stakeholders such as Air Traffic Control and airline operational control centers, to name a few.

“The future of ‘connected aircraft everywhere’ is inevitable,” says Gregory Ouillon, who heads up SITA’s e-Aircraft program.

**Right Applications?**

Those critical decisions involve choosing the right aircraft communications, applications and services so that airlines can protect current aircraft digitalization investments.

Airlines with mixed fleets, for instance, need to bear in mind that new generation aircraft designs restrict choices in the implementation of Electronic Flight Bags (EFBs) and broadband communications. That prevents a common approach.

Another factor is whether to wait for higher capacity next-generation systems. The industry buzz is around GlobalXpress – Inmarsat’s new Ka-band 12 megabits per second solution.

December 2013 saw the first satellite launched, with others to follow. It’s the first time cockpit and cabin communications have come together in a single technology.

“Everything passengers can do on the ground with their tablets and smartphones, they will want to do in the air,” says Ian Dawkins, CEO of OnAir, which is one of only a few Inmarsat licensed distributors for the new Ka-band solution.

“We’re finding that today’s passengers want more than just in-flight entertainment (IFE). They want a completely connected travel experience: pre-flight, in-flight and post-flight.”

**The Inevitability of Connectivity On-Board is Not Just Because of Its Potential as a Revenue Earner. It Has Massive Potential for Operations.**

“But airlines putting into place an aircraft digitalization strategy need to make some critical decisions.

“On top of the choices, there’s the need to achieve the right cost-benefit ratios to justify the business case for e-enablement.

“The transformation is happening, though the reality is that it will take time for widespread adoption of the fully connected aircraft,” he adds.

**A Revolution at the Gate**

Bandwidth growth, big data and business intelligence feature large among the many technology trends creating a critical mass that spells a new connected future for aircraft.

Now, the strong demand for bandwidth to and from the plane is set to increase dramatically. That means new levels of aircraft connectivity on the ground like we’ve not seen before. SITA is paving the way.

**For More**

Go to www.sita.aero/air-transport-it-review
Or read our tablet issue.
CHARTING THE COURSE
So how can an airline that would like to engage or accelerate an aircraft digitalization strategy chart the right course?

"Based on lessons we’ve learned with airline customers," says Ouillon, "our recommendations would be to look at all the capabilities needed, paying close attention to the ability to integrate solutions and to achieve secure data distribution.

“Our own experience with customers has led us to create a new e-Aircraft Program as well as release an evolving portfolio of e-Aircraft services that aims to eliminate the risks associated with aircraft e-enablement.”

E-AIRCRAFT PORTFOLIO
The e-Aircraft portfolio will address requirements in-flight en-route (flight deck, cabin and aircraft health monitoring), as well as on the ground, providing value-added and secure aircraft data management and total aircraft connectivity.

The program supports a number of airline digitalization requests, with the first modules including CrewTablet, Electronic Flight Bag (EFB) and e-enablement solutions.

This will help airlines, airframers and OEMs to introduce e-aircraft services through a simpler, more reliable and cost effective technical and service framework en-route and at airport/in hangars.

‘ONE-STOP’
“Created around four families of services – passenger, crew management, flight operations, and aircraft health and maintenance – the initiative brings together previously distinct service areas into a consistent and modular portfolio,” says Ouillon.

That allows a ‘one stop shop’ approach for e-enabling any aircraft type – whether line-fit or retro-fit – for any aircraft related process/functional domain both en route and at the airport.

MODULARITY
Aircraft digitalization demands flexibility in integrating solutions. Whatever airlines already have in place, further building blocks of their aircraft digitalization strategy will need to be integrated in order to transition their processes.

It also demands in–depth knowledge across the range of services.
“Having the know-how in place to design mobile communications solutions for the cabin, while also e-enabling the cockpit, is essential,” Ouillon adds.

EFB implementation requires a study of all nose-to-tail processes fed by paper, followed by the deployment of devices using modules to make that paper redundant.

Devices such as EFBs in the cockpit and tablets in the cabin can begin by loading data such as charts and passenger lists before flights. To generate maximum benefit they must use industrialized application interfaces to connect in-flight to back-office systems, with fast and reliable synchronization.

This allows for automation of processes such as technical logs that indicate any needs for repairs of aircraft facilities such as seats. The crew tablets can automatically update duty free inventory and access real time credit card authorization.

SECURE DATA
New generation aircraft are driving demand for secure and fast high bandwidth connectivity at the gate, to capture data from EFBs, cabin crew tablets, IFE and flight operations.

“The data they generate needs to be captured, stored securely, and then accessed and manipulated rapidly to be used in real-time, for engine maintenance, analysis of fuel burn and much more,” says Ouillon.

The aircraft digitalization process must ensure the secure distribution of that data. “Thanks to the ability to connect to aircraft, to airlines and to the VPNs of the manufacturers, the secure distribution of data is integral to SITA’s approach,” says Ouillon.

BIG IMPACT
As next generation aircraft take to the skies, SITA is also facilitating ground connectivity throughout airports worldwide, leveraging established communication infrastructures, such as Airport Hub and the ATI Cloud. (See ‘A revolution at the gate’.)

The next step is to put into place the big data brokerage and business intelligence capabilities to distribute and process data securely across the entire ecosystem – for engines as much as for IFE.

In the meantime, as increased travel drives collaborative flying, the demand for automation and connectivity will rise. Fast access to big data will be critical to airlines and air traffic control as they collaborate to determine guaranteed flight plans, accuracy and connections.

COST-BENEFIT
The promised benefits of deploying cockpit and cabin connectivity must offset the costs of changing from legacy operations and systems.

OnAir’s Dawkins is on record as saying the inevitability of connectivity on-board is not just because of its potential as a revenue earner.

“The right connectivity has massive potential value as an essential tool for crew, maintenance and engine manufacturers, as well as for the airline and all those connected with the aircraft, to ensure it operates effectively and efficiently.

“Total, constant monitoring – with real-time visibility and control – offers significant scope for saving money and for driving up customer service, increasing operational efficiency and enhancing aircraft maintenance,” he says. “This alone should help airlines justify adoption of onboard connectivity.”

NO GOING BACK
There’s no doubt that progressing along the e-enablement path involves a complex transition, one which is well beyond most airlines’ comfort zones.

“While no one can claim to have all the answers today, expert insight is needed into all the processes and sophisticated technologies that enable nose-to-tail connectivity,” says Ouillon.

“For SITA’s part, with a mandate to offer neutrality in aircraft e-enablement, we’ll be working with the air transport industry to reap the benefits of an automated aircraft ecosystem.”

TABLET CHOICES

WHICH WAY IS YOUR AIRLINE HEADING?
In a rapidly moving tablet market, airlines are facing tough strategic decisions. The vast majority are introducing – or plan to introduce – mobile devices for their crews, either in the cabin or in the cockpit.

This industry-wide rollout raises a number of questions about mobile strategies, a significant one being: Which platform should airlines opt for? The answer is far from straightforward. So what are the challenges?

FOR MORE
Go to www.sita.aero/air-transport-it-review
Or read our tablet issue.
SITA AT A GLANCE

The air transport industry is the most dynamic and exciting community on earth – and SITA is its heart.

• Our vision is to be the chosen technology partner of the industry, a position we will attain through flawless customer service and a unique portfolio of IT and communications solutions that covers the industry’s every need 24/7.
• We are the innovators of the industry. Our experts and developers keep it fuelled with a constant stream of ground-breaking products and solutions. We are the ones who see the potential in the latest technology and put it to work.
• Our customers include airlines, airports, GDSs and governments. We work with around 450 air transport industry members and 2,800 customers in over 200 countries and territories.
• We are open, energetic and committed. We work in collaboration with our partners and customers to ensure we are always delivering the most effective, most efficient solutions.
• We own and operate the world’s most extensive communications network. It’s the vital asset that keeps the global air transport industry connected.
• We are 100% owned by the air transport industry – a unique status that enables us to understand and respond to its needs better than anyone.
• Our annual IT surveys for airlines, airports and passenger self-service are industry-renowned and the only ones of their kind.
• We sponsor .aero, the top-level internet domain reserved exclusively for aviation.
• In 2013, we had consolidated revenues of US$1.63 billion.

For further information, please visit www.sita.aero

Follow us on www.sita.aero/socialhub

© SITA 2014
All trademarks acknowledged. Specifications subject to change without prior notice. This literature provides outline information only and (unless specifically agreed to the contrary by SITA in writing) is not part of any order or contract.