Episode 3: Digital Aircraft Operations

Wed. September 29, 2021
7:30-9:30am EDT
Opening Remarks

Our host today:

Chris MARKOU
Head, Operational Cost Management – IATA
markouc@iata.org

- This session is recorded.
- Your mic is automatically muted.
- Use the Q&A feature on the right side of your screen to submit your questions to our speakers.
- Competition Law Guidelines
Competition Law Guidelines

Do not discuss:

- Any element of prices, including fares or service charges
- Commissions
- Allocations of customers or markets
- Marketing plans, commercial terms or any other strategic decision
- Group boycotts
- Your relations with industry stakeholders
- Any other issue aimed at influencing the independent business decisions of competitors
Next Episode

Episode 4 – October 6
(7:30am EDT or 1:30pm in GVA or 7:30pm SIN)
• Operating in the post pandemic

Visit www.iata.org/mcc to register
Agenda

• Our speakers

• Leveraging data to optimize aircraft operations

• Harnessing industry data to optimize material cost within airline maintenance
Our Speakers

Pierre-Yves BENAIN
Business Innovation Sr. Manager – SITA
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Joan ROCA
Product Manager – SITA
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Dr Sebastian VOCK
Senior Solution Architect – Opremic Trade GmbH
sebastian.vock@opremic.com
How SITA is leveraging data to optimize aircraft operations

Pierre-Yves BENAIN
Business Innovation Sr. Manager – SITA
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Joan ROCA
Product Manager – SITA
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IATA MCC 2021 Webinar Series - Episode 3

How SITA is leveraging data to optimize aircraft operations

September 29th, 2021

Pierre-Yves Bénain
Joan Roca
SITA at a glance

SITA 100% owned by the industry and driven by its needs. 2,800+ Airlines, airports, governments, OEMs, MROs, … work with us. SITA has 3 domains of expertise

4,500 employees worldwide

We deliver the promise of the connected aircraft, across fleets, between solutions and among people

Enabling

400+ customers

400+ of the world’s airlines and ATI leaders use our connected aircraft solutions

Supporting

80+ air navigation service providers

We support 80+ air navigation service providers with global air traffic management

Exchangeing

18,000+ aircraft can communicate

Around 250 carriers and 18,000+ aircraft rely on our datalink services

DIGITAL DAY OF OPERATIONS

Powering airline digital transformation for optimized, new generation flight operations

CABIN CONNECTIVITY SERVICES

Global, best-in-class high-speed inflight Wi-Fi and cellular 4G. On every network, every platform, across avionics

UNIFIED AIRCRAFT COMMUNICATIONS

The world’s state-of-the-art aircraft and ATC communications ecosystem

BIZLAB

Exploration of value added-novelty in aircraft related economic and technology spheres
SITA at a glance

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4,500 employees worldwide

We deliver the promise of the connected aircraft, across fleets, between solutions and among people
The industry problem

Inefficiencies result from a mix of poor operational process and inventory management as well as inadapted systems.

The current aircraft assets ecosystem

- Hundreds of millions of events to record and track
- 25,000 Commercial aircraft
- 144,000 flights per day
- 20,000 suppliers
- 3 billion New parts added each year
- 25 billion parts

The business problem

High cost for the industry

- Spent magnitude for the Industry
  - $50B airlines value of parts inventory (Up to $5M /Y / AC)
  - 60% of MRO cost related to engines & components

Manpower/Errors costs

- Maintenance data rely on paperwork (Rarely digital):

Assets value at risk

- Lack of history evidences

The process and IT problems

Silo communications - inefficiencies

Poor process integration

- No coherent workflow across stakeholders / ERPs
- Limited to no end-to-end process automation, traceability & transparency
- Complexity in monitoring SLA & obtain service levels

Poor IT responses

- ERP evolution almost impossible, incomplete & costly
Our starting point - a POC with our founding members in 2020

All expectations were met, setting foundations for industrialising the solutions in 2021/2022

**POC success criteria**

- End to end **process automation** with complete **visibility**
- Data **confidentiality**, alongside compliance with standards
- SLA monitoring, complete trackability and records of parts movement
- Independent auto-reconciliation and **part value protection**

**How to better orchestrate parts transaction workflow & information exchanges**

**Old world**

- The Lessor
- The Airline
- The MRO
- The Freight FW
- The OEM

**New world**

- The Lessor
- The Airline
- The MRO
- The Freight FW
- The OEM

Together with:

- Cathay Pacific Airlines
- Haeco
- Bolloré

- Willis Lease
- Safran
- flydocs

*Ep 3 - Digital Aircraft Operations*
Why Blockchain is appropriate

Blockchain an enabler to secured lifetime data/passport enabling trusted peer-to-peer business orchestration

Peer-to-peer transactions

The 5 reasons for using Blockchain

- Trusted information exchanges
- Improved process efficiency
- Full transparency
- One source of truth
- Minimal costs of ERP transformation
SITA will launch in 2022 two solutions called “Track and Trace” and ”Change of Ownership” which can be used separately. While our immediate focus is part’s ownership, the digital passport will enable additional data & related use cases (e.g. lease return, counterfeit parts, maintenance log, …)

**MRO ecosystem**

**Services**

**Track & Trace (T&T):**
- Establishes a “tracking & tracing” of part movements
- Using T&T each partner has its specific rights to read and share information with others as defined by T&T.
- The standard to exchange information between partners is ATA SPEC 2000

**Change of Ownership (CoO):**
- Captures and creates a record of information related to parts and sales order data exchanged between different partners.
- The record stored is called a “Digital Passport”. The Digital passport is accessible by all partners based on their consensus.
- The standard of communication to interact with the Digital Passport is ATA SPEC 2500.
Immediate benefits for the Industry

key reasons making SITA the sole organization creating the end-to-end business, Industry and technology consensus

### SITA MRO services

**MRO ecosystem benefits**

Across the aircraft asset ecosystem

- **Raise** end-to-end process efficiency through automation, visibility and traceability
- **Raise** confidentiality and trust in sharing parts data
- **Raise** visibility on inventories and parts value protection
- **Reduce** risks for SLA disputes and penalties
- **Create** added value through an open and competitive partner ecosystem

### Benefits from blockchain

**Technology consensus**

- **Raise** trust on information exchanges and storage
- **Raise** process efficiency
- **Create** full transparency
- **Create** One source of truth
- **Eliminate** (minimal) costs of ERP transformation
- **Create** connection to value-add partner ecosystem thanks to open platform

### Working with SITA

**ATI dedicated, trusted and neutral**

- Service provider fully owned by/dedicated to the Air Transport Industry, with over 70 years of maturity and knowledge of the Aircraft ecosystem
- Always been the trusted enabler of business transactions, communication and data exchanges in the ATI.
- Neutral player, and not part of any commercial interest,
Please download our series of white papers - Chapter 1 airlines

https://www.sita.aero/mroblockchain

...and meet us at Aviation Week MRO Europe conference in AMS in October for a demo
SITA at a glance

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4,500 employees worldwide

FOR AIRCRAFT

Enabling

400+ customers

49% of the world’s airlines and AIT leaders use our connected aircraft solutions

Supporting

80+ air navigation service providers

We support 30+ air navigation service providers with global air traffic management

Powering airline digital transformation for optimized, new generation flight operations

We deliver the promise of the connected aircraft, across fleets, between solutions and among people

DIGITAL DAY
OF OPERATIONS

DIGITAL DAY
OF OPERATIONS

Ensuring

18,000+ aircraft can communicate

Around 25% carriers and 18,000+ aircraft rely on our datalink services

Exchanging

5+ million kits of ACARS data

We deliver 5+ million kits of ACARS data exchange every day

CABIN CONNECTIVITY
SERVICES

Global, best-in-class high-speed inflight Wi-Fi and cellular 4G. On every network, every platform, across avionics

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UNIFIED AIRCRAFT
COMMUNICATIONS

The world’s state-of-the-art aircraft and ATC communications ecosystem

BIZLAB

Exploration of value added novelty in aircraft related economic and technology spheres

For airports

SITA AT AIRPORTS

For borders

SITA AT BORDERS

For aircraft

SITA FOR AIRCRAFT

Ep 3 - Digital Aircraft Operations
Our goals and ambition

Our vision is to transform aircraft data/flight data management for airlines, OEMs and other users.

Our mission is to make aircraft data accessible to airline and their partners

We are the link between aircraft data and parties interested in aircraft data and any other complementing data.

We are building the aircraft data database of the future to:
• Provide easy access to complete set of their data
• Feed data to airline’s tools, apps and services, increasing their capabilities and accuracy
• Enable predictive maintenance of aircraft components
• Use big data algorithms to learn, act and make air travel safer, more comfortable and sustainable.
### Importance of aircraft continuous (FOQA) data on operations

<table>
<thead>
<tr>
<th>Past</th>
<th>Today</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOQA</strong></td>
<td><strong>Engine Health Monitoring (EHM)</strong></td>
<td><strong>ACMS Interrogation</strong></td>
</tr>
<tr>
<td><strong>Fuel efficiency</strong></td>
<td><strong>Tire and brakes LCC optimization</strong></td>
<td><strong>ACMS Interrogation</strong></td>
</tr>
<tr>
<td><strong>AHM</strong></td>
<td></td>
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</tbody>
</table>

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**SITA’s Vision**

- **FOQA**
  - Adaptive training
  - Tire and brakes LCC optimization

**ACARS**

- Engine Health Monitoring (EHM)
- Aircraft Health Monitoring (AHM)

**Etc.**

**Airline aircraft data sharing use cases**

- FOQA
- AHM
- EHM

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**SITA FOR AIRCRAFT**
Platform offerings

Aircraft data platforms for receiving, cleaning, transforming and distribution of ACARS, QAR, DAR etc.

**AIRCOM® Flight Messenger**
Fully configurable ACARS processing and distribution tool

- Connects aircraft, users and systems
- Interfaces local users through the Mailbox and external users through connectors
- Handles downlink, uplink and ground messages, formatting and distribution
- Tracks aircraft and flight data
- Orchestrates tasks using the Sequencer

Airline and OEM use ASP and FM to: bridges the gap between aircraft, users & systems

**Highlights:**

- Connects aircraft, users and systems
- Interfaces local users through the Mailbox and external users through connectors
- Handles downlink, uplink and ground messages, formatting and distribution
- Tracks aircraft and flight data
- Orchestrates tasks using the Sequencer

**Airline perspective:**
Improve and automate communication between aircraft/flight ops and ground

**OEMs perspective:**
Offer real time asset health monitoring

**AIRCOM® Legato**
Fully managed SaaS ACARS processing and distribution tool

- Manage ACARS messages from desktop or mobile devices through a web interface
- View, sort and filter ACARS messages
- Automatically identify aircraft messages with a built-in catalogue
- Pre-defined output formats
- Easily share messages to external users and systems

Airlines and OEMs use AIRCOM Legato to: allow SITA to manage their ACARS processing on their behalf in a secure and efficient way

**E-Aircraft® DataHub**
The neutral data exchange platform for FOQA data

- Vendor independent and hardware-free solution
- Easy to connect to the customers’ data workflows and processes
- Fully managed cloud-based solution
- Peripheral DataHub available on request
- Main features: Decoding, Distribution, QA, Filtering, Data augmentation

Airlines and OEMs use DataHub to: process and distribute their FOQA data

**Coming in 2022**

**AIRCOM® Flight Messenger**

**AIRCOM® Legato**

**E-Aircraft® DataHub**

**Highlights:**

- Manage ACARS messages from desktop or mobile devices through a web interface
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Airlines and OEMs use AIRCOM Legato to: allow SITA to manage their ACARS processing on their behalf in a secure and efficient way

**Airline perspective:**
Input data to multiple FOQA based services from one platform

**OEMs perspective:**
Offer predictive maintenance capabilities
e-Aircraft® DataHub: Overview

Safer & more efficient collaboration in the OEM/ MRO/ Lessors digital space

**Industry relevance**

- **Neutral hub** facilitating digital service partners integration with operators
- **Open platform** mutualizing costs/ efforts for operators and OEMs/ MROs
- **Simplified operators’ IT journey** across multiple OEMs/ MROs /Lessors digital initiatives

**Opportunities**

**Benefits for Airframers, OEMs and MROs**
- ✓ Overcome complexity with multi-fleet data collection and transformation
  *Making it timely and complete*
- ✓ Global airlines acceptance to interconnect their IT
  *Gaining Airlines’ trust and control*
- ✓ Operational efficiency improvements

**Benefits for Airlines**
- ✓ Data sharing with any partner of choice globally
- ✓ Full control and ownership of data distribution
- ✓ Multi-fleet data collection for all aircraft and data types
e-Aircraft® DataHub: Overview

A neutral data exchange platform for the industry, enabling trusted collaboration between airlines and their digital service partners – meeting regional, national and airline-data specific needs.

Operators
- Multi-fleet data sets
  - ELIFE
  - QAR
  - DAR
  - SAR

DataHub Services
- Raw data
- External Data
- Collection
- Distribution
- Control
- Classification
- Decoding
- Filtering
- POST-PROCESSING
- Airlines Secured Access
- OEMs Secured Access
- Secured Vault
- Secured Vault

Airline Operating Partners
- Analytics
  - Structured data
  - Predictive Maintenance
  - Performance Optimization
  - ALGORITHMS
  - Predictive Maintenance

Hybrid Cloud (1) | GDPR (2) compliant ISO27K certification.

(1) Hybrid cloud: private cloud combined with public cloud
(2) GDPR: (EU) Global Data Protection Regulation
A Turn-Key Managed Service

SITA monitors all links, performs data transformation and custom data filtering rules per data consumer as per operator guidance, and on behalf of the operator.
Facilitating the « many to many » relationships of data sharing

One SITA Connector, Multiple Benefits

SITA has onboarded a total of « double digit » airlines in its e-Aircraft® DataHub, from leading Tier 1 airlines to regional players, across Americas, Europe and APAC.

One open platform, one light IT project to implement at operator* side and OEM side, to unlock Big Data benefits

* Initial airline effort to connect to DataHub is estimated at 16 hours
Thank You

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Questions?

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Harnessing industry data to optimize material cost within airline maintenance

Dr Sebastian VOCK
Senior Solution Architect – Opremic Trade GmbH

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Harnessing industry data to optimize material cost within airline maintenance

Dr. Sebastian Vock
Opremic trade GmbH
Material spend represents ~ 60% of MRO costs

Reduction of material expenses is key in the MRO industry

Can airlines and MROs reliably and easily quantify their savings potential?

Source: Oliver Wyman, volume of global MRO market for 2020

$50.3 Bn

$31.1 Bn
Knowledge about industry data can save money

Anonymized customer data

Airlines

OEMs

MROs

Traders

Fair Market Value (FMV)

Company transaction history
- Actuator 1211313-010 paid $30,000

Real-time online analysis
- FMV on IATA MRO SmartHub $20,000

Accumulate & Visualize
- Potential savings $10,000

IATA MRO SmartHub quantifies their customers’ savings potentials
Benchmark on company level - Calculation date: 30.8.2021

Total

<table>
<thead>
<tr>
<th></th>
<th>Total potential savings [USD]</th>
<th>Total achieved savings [USD]</th>
<th>Total spending [USD]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$3,790,004</td>
<td>$821,188</td>
<td>$12,161,737</td>
</tr>
</tbody>
</table>

Divisions

<table>
<thead>
<tr>
<th>Division</th>
<th>Potential savings [USD]</th>
<th>Achieved savings [USD]</th>
<th>Total spending [USD]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sale</td>
<td>$842,150</td>
<td>$25,314</td>
<td>$3,241,049</td>
</tr>
<tr>
<td>Purchase</td>
<td>$2,123,491</td>
<td>$715,718</td>
<td>$7,136,124</td>
</tr>
<tr>
<td>Replacement</td>
<td>$824,363</td>
<td>$80,057</td>
<td>$1,784,564</td>
</tr>
</tbody>
</table>

Example: KPI calculation for parts purchase

<table>
<thead>
<tr>
<th>Total spending</th>
<th>Potential savings</th>
<th>FMV</th>
<th>Achieved savings</th>
<th>FMV</th>
</tr>
</thead>
</table>

Note: Data artificially created due to confidentiality.

29 September 2021
How can companies identify their savings potentials?

- Contribute data to a neutral industry database
- Use the market information

Provision of individual transaction data into

✓ Real-time industry benchmark
✓ Efficient continuous monitoring
✓ Management information system
Dr. Sebastian Vock
Opremic trade GmbH
Leading Product Specialist
IATA MRO SmartHub
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✓ Real-time industry benchmark
✓ Efficient continuous monitoring
✓ Management information system

Coming soon…
• Interactive monitoring of individual management targets
• Integrate contractual restrictions
• Advanced anticipation of market trends

Visit the product page
www.iata.org/mro-smarthub

Download the COVID Whitepaper
www.iata.org/mro-smarthub/#tab-6

Register for a demonstration
www.iata.org/covidmro
Questions?

Dr Sebastian VOCK
Senior Solution Architect – Opremic Trade GmbH

sebastian.vock@opremic.com
Useful links

• Maintenance Cost Technical Group
  www.iata.org/mctg

• Technical Operations Working Group
  www.iata.org/tog

• Safely Restarting the Aviation Industry
Thank you!

For more information on MCC 2021, please visit [www.iata.org/mcc](http://www.iata.org/mcc)

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