

# Introduction to Blockchain and Airport Operations in a COVID-19 Environment

Sherry Stein, SITA

August 4, 2020



**BLOCKCHAIN**

# Over 70 years experience serving the air industry

## SITA

AT AIRPORTS

## SITA

AT BORDERS

## SITA

FOR AIRCRAFT

Community-owned, 100% dedicated to air transport

A cooperative (neutral) organization with over 400 active members



Sherry Stein  
Head of Technology Strategy, Americas  
SITA

# Industry Expectations



**Seamless Travel Journey**  
Safety & Low/No Contact  
Security & Experience



**Operational Excellence**  
Economic-Pressures  
Sustainability



**Connected, Informed, In Control**  
Automation & Digitization  
Mobility & Cloud

# A Commitment to Investment Spanning 5+ Years

2015



**TRAVEL IDENTITY OF THE FUTURE**

WHITE PAPER



**FLIGHTCHAIN**

RESEARCH INTO THE USABILITY AND PRACTICALITIES OF BLOCKCHAIN TECHNOLOGY FOR THE AIR TRANSPORT INDUSTRY

WHITE PAPER

2016



**27 Jun** Press Release: SITA invites airlines to join blockchain research project

Facebook Twitter



**sovrin**  
identity for all

SITA joins Sovrin Foundation to explore self-sovereign identity in travel

Monday 16 July 2018 | 12:44 PM CET

SITA has been named a Founding Steward of the [Sovrin Foundation](#), a private-sector, international non-profit whose mission is to enable self-sovereign identity online.

In its role as a Founding Steward, air transport technology provider SITA, will collaborate with the Sovrin Foundation and other Sovrin Stewards to create, operate and maintain the foundation's decentralized digital identity network.



2018

CHAMP – in collaboration with SITA and Safran – announced as finalist for the IATA 2019 Cargo Innovation Awards

20/02/2019

CHAMP Cargosystems is delighted to have been shortlisted alongside SITA and Safran Electronics & Defense for the IATA 2019 Cargo Innovation Awards for their Smart ULD project providing end-to-end visibility. Smart ULD is a unique combination of Mobile technology, IoT and Blockchain to increase the quality of the supply chain in aviation by providing advance tracking, monitoring and transparency across multiple cargo operations.

The end-to-end solution starts with aero-certified sensors attached to the ULD. These can capture a host of data from Geo-localization, temperature, vibration to shock and humidity which is sent via a low power wide area network (LPWAN) to SITA IoT platform. Based on information raised on the IoT platform ULD alerts can be sent out, check lists managed, and task assignments created for tug drivers, for example, an iOS based mobile app lets tug drivers know when ULDs need to be picked up from where and delivery points, flags up if they contain dangerous goods and immediately sends out a warning to supervisors if ULDs have been opened or damaged.

2019

SITA and key industry partners launch MRO blockchain alliance

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Use of blockchain to track aircraft parts could save the industry an estimated US\$3.5bn\*



2021+

**Digital Travel Credential (DTC)**



Self-Asserted  
Authority-Derived  
Authority-Issued



**Meet the Global Blockchain Alliance**

Bring the community together to drive network effect and standardize industry practices.

[Go To Website](#)

- Business Driven**  
Assess and promote key business areas where Blockchain powered applications can generate business value.
- Network Effect**  
Bring the community together around specific use-cases to grow network effect.
- Standards**  
Define and promote industry standards, in collaboration with industry regulators and standardisation organisations.
- Governance**  
Move toward industrialization by developing Governance best practices to run Blockchain-based collaborative projects.



**ULDCARE**  
Compliance Airworthiness Regulations Education

Tracking of ULDs through blockchain to save industry \$400M

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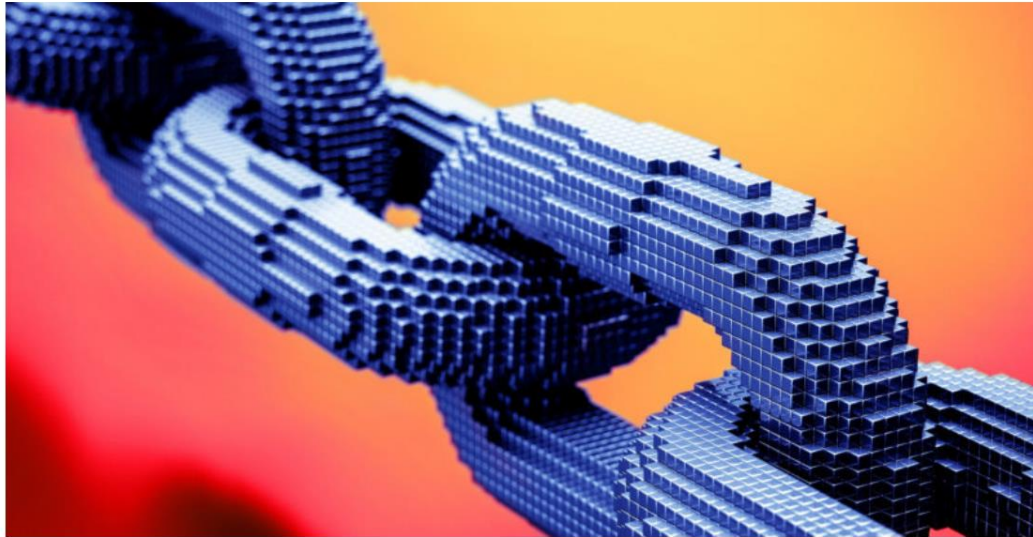
12 March 2020

# SITA Lab Blockchain Research Program Initiated in 2015



The Challenge: Can blockchain technology be used to streamline processes and create a collaborative ecosystem and trust framework?

# Aviation Blockchain Sandbox



Invites global participants to use FlightChain foundation to create projects of their own and learn about blockchain technology, using SITA-provided platform and technical expertise.

27

Jun

Press Release: SITA invites airlines to join blockchain research project

More than 50 airlines & airports participated in the project.

 Facebook

 Twitter

# Global Blockchain Alliance

## Meet the Global Blockchain Alliance

Bring the community together to drive network effect and developing industry standards

Join The Alliance



### Business Driven

Assess and promote key business areas where Blockchain-powered applications can generate business value.



### Network Effect

Bring the community together around specific use-cases to grow network effect.



### Standards

Define and promote industry standards, in collaboration with industry regulators and standardisation organisations.



### Governance

Move toward industrialization by developing Governance best practices to run Blockchain-based collaborative projects.

## New SITA initiative to further explore Blockchain

CONTACT US

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PRINT

*SITA's Aviation Blockchain Sandbox is evolving into a new collaboration forum called the **SITA Global Blockchain Alliance**. The new forum comes on the back of the success of the Sandbox and the rapid evolution of blockchain and Smart contract technology.*



Its goal is to promote the development of key blockchain-based applications, increase the 'network effect' and contribute to and define blockchain standards for the air transport industry.

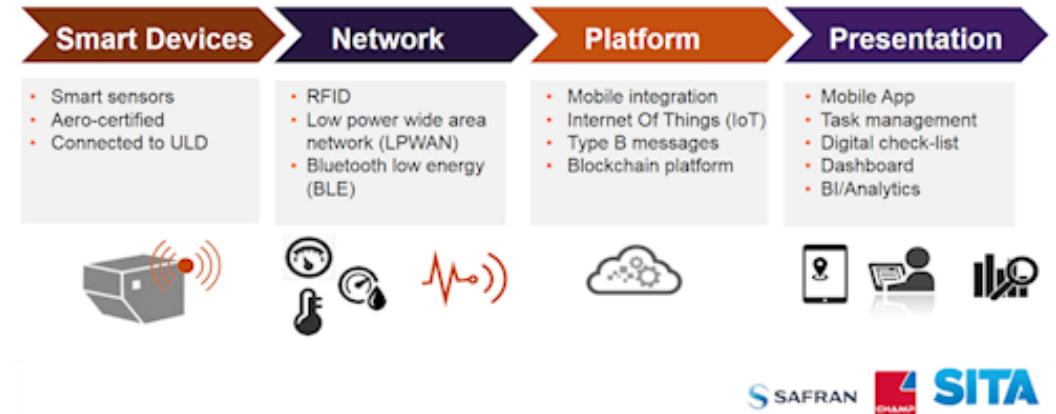
# Smart ULD: IoT + Blockchain

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# Cargo, Supply Chain, & Trade

**50% of the shipping time is spent on back-office paperwork.**

“Air cargo represents only 1% of all global trade in terms of volume but accounts for 35% of the total trade value and the inefficiency is significant. A container traveling from Shanghai to Long Beach could take up to 30 days to finish its journey, but the true travel time on sea or road is only around 15 days, with the remaining time spent on back-office and paperwork. The use of blockchain could revolutionize that process.”

→ Bob Rogers, Vice President and Treasurer, ULD Care

## Tracking of ULDs through blockchain to save industry \$400M

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Compliance Airworthiness Regulations Education

Location: Geneva



12 March 2020

*Through accurate tracking and secure data sharing, shipping times could be cut in half.*

SITA and trade association ULD Care hope to bring new efficiency to the air cargo industry by exploring the use of blockchain to digitally track and record change of custody of airline cargo containers or Unit Load Devices (ULDs) across their journey.

# MRO Blockchain Alliance

## MRO Industry

- Processes 25 billion parts per year
- Produces 3 billion new parts per year
- Network of 20,000 suppliers
- Airline spare parts inventory: \$50B USD
- Overall market \$100B USD year

## Blockchain-enabled improvements:

- **Could increase revenue by 4%, \$40B USD**
- **Cut MRO costs by 5%, \$3.5B USD**

Source: *Data for the life of the aircraft*, published by PWC in April 2019:

## SITA and key industry partners launch MRO blockchain alliance

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04 February 2020

*Use of blockchain to track aircraft parts could save the industry an estimated US\$3.5bn\**



# Self-Sovereign Identity & Digital Travel Credentials



## Digital Travel Credential (DTC)



Self-Asserted

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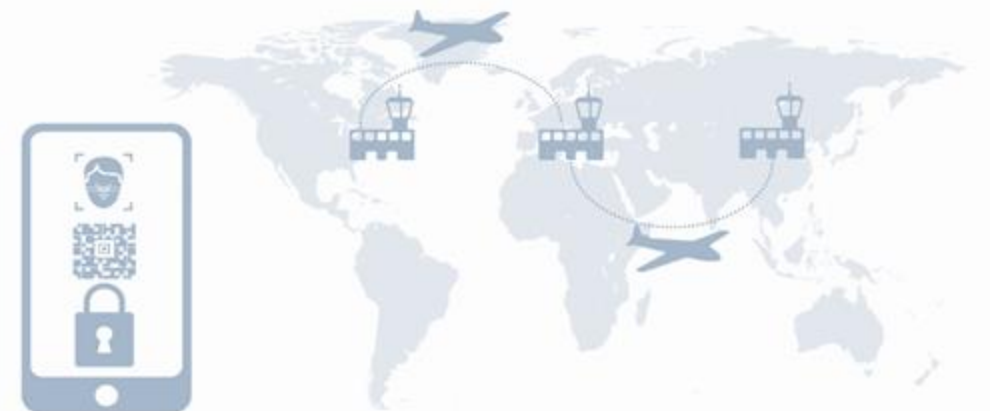
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# Use Cases



Flight Information



Digital Identity Credentials



MRO Lifecycle



Customs Clearance



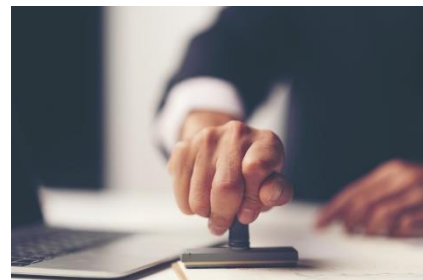
Cargo, Smart ULD



Distribution & Supply Chain



Baggage Management



Certification & Licenses



Redemption & Payments

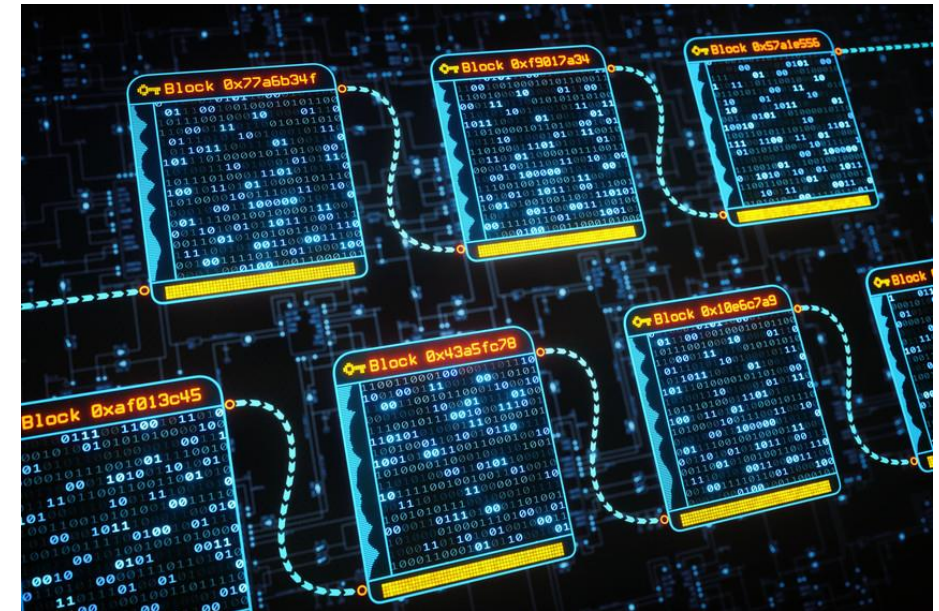


Registries & Records

# Blockchain Makes Sense

Complex Supply Chain(s) to provide:

- Provenance & Trust of Source
- Chain of Custody
- Tracking & Tracing



Where Timely Access to Data Affects Decision-Making AND  
When Process & Members Are Ready for Digitization

# The Building Blocks



Stakeholder  
Collaboration



Standards &  
Recommended  
Practices



Framework for Trusted  
Data Exchange



Privacy & Data  
Protection Principles

# Lessons Learned



Governance is key



Garbage in, garbage out



Where's the killer app?



I need solutions NOW

Thank you!



# Q & A

