GEDIMINAS ZIEMELIS: THE FUTURE OF AVIATION EXISTS ON THE BLOCKCHAIN

News / Airlines, Maintenance / Trainings, Personalities

Aviation has always been on the leading edge of innovation. Recently, however a new technology has been leading digital innovation – Blockchain. While still a new concept, Blockchain is already disrupting the Fintech industry and with its secure operating principles, so here's why Blockchain is already on target to improve the Aviation industry as well.

At its core blockchain is a public ledger which allows users to add information but prevents anyone from changing previously entered data. It does this through the use of cryptography to encrypt data, hash's to represent data blocks, and distributing the "servers" to peer-to-peer nodes. Culminating in an immutable method of digitizing transactions.

Blockchain will increase MRO efficiency

Maintenance on aircraft is a meticulously controlled process with no room for error. This is necessary to deliver a consistent high level of quality and ensure operational safety. Aircraft are complex, and despite standardized processes operators frequently prefer to take their aircraft to MRO's that have experience with that aircraft. The issue therein results from an unproportioned workload between experienced maintenance crew and those with little experience. The experienced crews can have a backlog of work orders for weeks in advance while the

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inexperienced crew can sit with empty hangars. Distributing this workload more evenly would increase MRO efficiency while minimizing downtime. Luckily, blockchain technology has a promising solution.

Since aircraft parts are tracked by a number of different companies there can be multiple different data points to pull from for any given aircraft. Utilizing blockchain technology the data from the parts manufacturer and any previous maintenance can be accessed from a universal ledger instantly supplying a complete picture of aircraft health and history. “Thanks to the utilization of this technology any past data cannot be altered so the different parties are not required to trust each other before they share data, they just have to trust the mechanism of the decentralized consensus. Any MRO crew will have the capability to have an intimate understanding of the aircraft from macro aspects down to the individual detail of each rivet regardless if they have past experience with it. This application of blockchain data is so promising that one of the largest digital technology companies, Accenture, is investing in it and they expect widespread adoption within two years,” says Gediminas Ziemelis, Chairman of the Board of Avia Solutions Group.

Fintech solutions for emerging aviation markets

Aviation has a special role in supporting the growth of developing countries and their infrastructures. In remote locations aircraft may be the only option available to transport people, medicine, and goods so it is paramount that aircraft stay operational for the safety of these communities. International money transfers help keep these aircraft flying. While the viability of international money usually does not cause a problem there can be delays when the request is urgent or last minute, like in the case of an emergency. When this happens the holding period banks place on money can be the difference between life and death.

“Using blockchain for micro-remittance transfers allows for transactions to be made without the holding times that exist with centralized financial institutions. This is possible because blockchain technologies reduce the need for intermediaries by securely going to peer-to-peer transfers. Applications are in development that fix the value of digital cash in real time permitting the user to hold this digital cash and transfer it when necessary while also minimizing processing fees,” explains G. Ziemelis.

Reduce Passenger Headaches

There is good news in the travel industry; according to SITA, 2016 saw the lowest number of passenger bags lost or mishandled at 5.73 bags per thousand passengers. The bad news is this still equates to over 650,000 bags. Recent reform such as the International Air Transport Association Resolution 753 is making strides to significantly reduce this number with the integration of IoT, and with the advent of blockchain there exists real opportunity to bring mishandled bags down to near zero by tracking them from gate to gate. Using blockchain data is a dynamic solution as it enables a secure way for luggage to be logged at each checkpoint on its journey ensuring its complete travel history is available regardless of what airport or country it arrives in.

Blockchain to reduce part fraud

From the time an aircraft part is created to the end of its serviceable life all appropriate information regarding its use will have been logged. While normally a trusted and standardized process there have been cases of parts fraud in the aviation industry putting countless lives at risk. A couple years back a part broker was caught misrepresenting the condition and origin of the aircraft parts he was distributing out of Miami, Fl. Through an investigation from the FBI it was uncovered the

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parts supplier used unauthorized dealers to manufacture the parts and concealed the process by creating a Certificate of Conformance with a forged OEM logo.

While part brokers are often a secure and economical option to fulfill a need, cases like what happened in Miami indicate they can carry a higher risk, especially for life-limited parts. Using a part's serial numbers and RFID tracking, combined with the blockchain will provide a modernized and immutable method for aircraft manufacturers, and their buyers, to confidently track the condition of their parts. "Since every transaction on the blockchain is verified by multiple nodes the parts broker will benefit as well. The distributed ledger allows for smart contracts that can quickly change the ownership of physical assets through digital means effectively increasing the speed and efficiency of the parts supply chain," says the international businessman.

Looking to the future

While blockchain used to be synonymous with cryptocurrency the paradigm surrounding its use has already changed. The future of blockchain is still unclear, but what is clear is that it is set to improve the aviation industry as a whole. And those who are the early adopters will have the greatest opportunity to influence the changes it will bring. "At Avia Solutions Group we make it our responsibility to stay on the leading edge of aviation by welcoming and implementing new ways of thinking about technology because we recognize that the future is always closer than you think," says Gediminas Ziemelis.

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