

Blockchain Technology Applications

Presented by ACAO's General Directorate

Paper summary

This paper presents the importance of the uses of Block chain technology in the civil aviation system and the importance for the Arab Civil Aviation Organization to implement it.

Introduction

Today, the world has become more aware of the benefits and uses of the Block chain technology, which is no longer restricted to payments and digital currencies. Indeed, this technology can revolutionize the way we interact with intellectual property, capital markets, insurance, health care, and government in addition to smart contracts, which are the basic building block of decentralized applications, i.e. the transaction contractual management between any two or more parties that can be programmatically verified via block chain, instead of traditional methods such as the central controller or decision-maker such as the broker or the bank and others.

Global air traffic volumes are expected to double over the next fifteen years, which will result in increases in the number of aircraft and flights, ground activities, number of passengers, ticketing, cargo handling, and parallel expansion of tracking, documentation, approval, and certification requirements associated with them.

With the growth of air traffic, one of the new challenges and risks consists in the increasing number of logistical, administrative and control activities that can be addressed through "Block chain" technology applications whilst maintaining increased demand and quality levels. In addition, block chain applications can be used in all regions of the aviation system where important and complex safety records are managed and updated, such as personnel licensing, aircraft maintenance, operational processes or cargo lists.

In this context and to support this trend, the International Civil Aviation Organization organized important events, through which it aimed to shed light and support block chain technical applications in the aviation system starting with the aircraft and other assets that fund commercial operations including traveler's experience, contract management, record keeping and security.

The civil aviation system today relies in most cases on the human factor or intermediaries to carry out data and information validation activities, and therefore we can expect that the integration of block chain operations to support the countries aviation safety monitoring system may require substantive modifications to the relevant regulations, procedures and responsibilities. On the other hand, risks need to be taken into account as relying on a set of servers and smart contracts in order to validate documents and issue certificates presents clearly and specifically electronic risks. Therefore, it is necessary to consider security measures before adopting block chain applications for managing air safety operations and other civil aviation related issues.

The Arab Civil Aviation Organization support cooperation between the civil aviation authorities and the air transport industry in order to put in place procedures and measures to benefit from the use of related "block chain" applications in the civil aviation system.

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