

It is also desirable to have accurate information regarding parts that may be installed on an aircraft, that are installed on an aircraft, or that have been installed on an aircraft. For example, it may be desirable to have accurate information regarding the creation of a part, use of a part, repair of a part, modification of a part, destruction or other ultimate disposition of a part, or of other events or combinations of events that affect a part for an aircraft.

A blockchain is a continuously growing list of records, called blocks, which are linked and secured using cryptography. Each block in a blockchain typically contains a cryptographic hash of the previous block, a timestamp, and transaction data. A blockchain is inherently resistant to modification of the data stored in the blockchain. A blockchain may be used as a decentralized, distributed, and public or private permissions based digital ledger for recording transactions across many computers. A blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for validating new blocks. Once recorded, the data in any given block cannot be altered retroactively without the alteration of all subsequent blocks, which requires collusion of the blockchain network. Therefore, there may be a need for a method and apparatus that take into account at least some of the issues discussed above, as well as other possible issues.

SUMMARY

An aspect of the disclosure provides a computer-implemented method of maintaining information regarding a part on a vehicle, the method comprising: receiving, by a computer, information regarding an installation of the part on the vehicle; recording the information for the part in part history blockchains for the part in a part history blockchain

network; recording, by the computer, the information regarding the installation of the part in vehicle configuration and activity history blockchains for the vehicle in a vehicle configuration and activity history blockchain network; and receiving, by the computer for as long as the part is installed on the vehicle, a token from the part history blockchain network, and locking, by the computer, the part history blockchains for the part and thereby preventing adding additional information for the part to the part history blockchains for the part until the token returns back to the part history blockchain network.

Another aspect of the disclosure provides a computer-implemented method of recording information for a part, the method comprising: receiving, by a computer, a part installation notification by a part history blockchain network, wherein the part installation notification identifies the part and indicates that the part is installed on a vehicle, wherein the part history blockchain network comprises part history blockchains for the part that are configured to record the information for the part, and wherein configuration and activity history information for the vehicle is recorded in vehicle configuration and activity history blockchains for the vehicle in a vehicle configuration and activity history blockchain network; sending a token from the part history blockchain network to the vehicle configuration and activity history blockchain network; and locking, by the computer for as long as the part is installed on the vehicle, the part history blockchains for the part and preventing adding additional information for the part to the part history blockchains for the part until the token is returned back to the part history blockchain network.

Another aspect of the disclosure provides an apparatus configured to record information for a part, such that the apparatus comprises a data processing system in a part history

blockchain network configured to: receive a part installation notification configured to identify the part and indicate an installation of the part on a vehicle, wherein the part history blockchain network comprises part history blockchains for the part that are configured to record the information for the part, and wherein vehicle configuration and activity history blockchains for the vehicle are configured to record configuration and activity history information for the vehicle in a vehicle configuration and activity history blockchain network; send a token from the part history blockchain network to the vehicle configuration and activity history blockchain network; and lock, responsive to receipt of the part installation notification for as long as the part is installed on the vehicle, the part history blockchains for the part to prevent an addition of more information for the part to the part history blockchains for the part until the token is returned back to the part history blockchain network.

Illustrative embodiments provide a method of installing a part on a vehicle. Information regarding installation of the part on the vehicle is received. Information for the part is recorded in part history blockchains for the part in a part history blockchain network. The information regarding the installation of the part is recorded in vehicle configuration