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A GLOBAL, DECENTRALISED, SPACE COMMUNICATIONS NETWORK BASED ON DISTRIBUTED LEDGER TECHNOLOGY (DLT)

Abstract

Ground stations are reaching their limitations in terms of capacity and capability. Additional ground stations are expensive and slow to implement. Current network architectures are centralised and dependent on inefficient, manual processes DLT based smart contracts enable new business models for space assets and data to be formed on top of the existing scheduling Platform DLT based solutions make data analysis significantly easier, as datasets are discretely stored and tagged with information such as ownership history, time and location.

The only worldwide, expandable, multi-purpose solution targeting spacecraft and ground station applications

DLT (Blockchain)based payments provide an instant, secure and low-cost method of transferring value between thousands of ground stations and spacecraft operators all around the globe

DLT allows for optimisation schemes to run locally, yet draw large amounts of data from thousands of ground and space users in an automated, self sustainable, yet transparent manner.

We propose following solution: A DLT (blockchain) powered platform that analyses, organises and tokenises ground-space communications for maximum efficiency and throughput at low-cost.

Low-latency, rapid handshake capability with minimised bottlenecks and idle time for ground stations. Users only pay for what they use. Schemes can be adjusted according to user needs e.g. bandwidth, budget Value is transferred between parties instantly and securely using tokenised model. We argue that it will be a crucial step towards the formation of a new space economy. Decentralised space communications infrastructure will help make low cost, low latency worldwide transmission of space data a reality. This new economic model will ultimately lower the barrier to entry, thus opening new commercial opportunities. Stimulating dialogue between academia, commerce, finance, industry and government. Enables the formation of an ecosystem in which space assets and data can also be exchanged and traded automatically.