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BLOCKCHAIN AND THE SPACE INDUSTRY: IS IT ACTUALLY VIABLE?

Abstract

Space technology, asset management, research and design, has certainly seen an increase in development especially with the commercial positioning of nation-states that are offering attractive Low Earth Orbit solutions to commercial space actors. Much discussion in recent years has also focused on the development of blockchain technology, specifically how blockchain could be used to better improve space services and market-offerings. As a decentralised, resilient, and transparent technology, a blockchain is a shared digital ledger of all transactions captured within a real-time database. As a result, the blockchain database attains the status of a trusted and reliable source of information. The power and transparency of blockchain technology could provide important solutions to the increasing problem of space traffic management and space situation awareness, in order to provide a secure and decentralised foundation for monitoring current space asset orbit trajectories or satellite positioning especially as more non-state-actors enter the space services-market and space industry. Whilst the technology provides important benefits to the space industry such as the capacity to run a variety of large applications in a transparent way at any one time, the detriments of the technology is mirrored by its nature as an open-source and transparent database. For example, secure satellite communication might not necessarily be assured through the utilisation of blockchain. This paper will consider viability of blockchain technology and whether the open-source and transparent nature of the technology can be utilised in a way to make it viable for the future of the space industry.