27th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Virtual Presentations: 27th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (VP)

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INVESTIGATION CONCEPTUAL AND STRUCTURAL RELATIONSHIP BETWEEN BLOCK-CHAIN TECHNOLOGY AND CONSTELLATION SATELLITES IN ORDER TO NOVEL SPACE MISSION DESIGN APPROACH

Abstract

In this article, a conceptual relationship between the fundamentals of spatial systems with block-chain technology has been investigated in various ways and visions, and the useful and practical points of this utilization have been considered for the design of space missions with more capabilities and flexibility. The space constellation is a major technology for space applications, including multiple spacecraft. Some future space applications will use constellation and formation flying of spacecrafts technologies to perform different observations and appropriate coverage for communication and exploration. In recent years, there has been a greater willingness to use satellite constellation mission design. Several missions of constellation of spacecrafts have been used as a means to reduce costs and increase the flexibility of space programs. Mission planners hope that the size and complexity of flying missions will replace single spacecraft with several small, low-cost satellites. The flight of several satellites in this arrangement creates flexibility for designers, since each satellite can be positioned on other satellites to carry out various missions. The block-chain is a key technology with guideline and unique features that are being increased more day by day on the applications of its utility, especially in the field of information technology. The Block Chain is a new technology in the field of secure cloud computing that can transform the digital world and is currently of great interest to the think tanks and the world's leading think tanks. Also, the importance of using this technology in industrial, engineering, medical, financial, security, etc. has also led governments to pay special attention to the use of this technology and to take advantage of the various aspects of this technology in their agenda. By establishing the conceptual similarities between the block-chain technology and the constellation of satellites, be able to find similar structural and conceptual features, for example the state of autonomy of these two technologies, and in addition to the design structure of these two technologies A robust mode is also inherent in its structure, which is especially important in terms of the stability and designing of control systems, which is an important part in the design of constellation of satellites. By utilizing this structural and conceptual similarity and using the positive features of this structure, space constellation missions can be designed with greater flexibility and will be more autonomous.in addition more robustness and stability, control ability and more generally with higher efficiency.