

38th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)
Interactive Presentations - 38th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND
ECONOMICS (IPB)

Author: Mr. Pavlo Tanasyuk
Spacebit Global Ltd, United Kingdom

Ms. Olga Reinig
University of Tasmania, Australia

DECENTRALIZED SPACE ECONOMIES: BLOCKCHAIN FOR SPACE ASSET TOKENIZATION
AND SMART CONTRACTS

Abstract

The space economy is rapidly expanding, with increased commercial activity in satellite operations, lunar mining, and space station development. However, traditional funding and asset management models struggle with liquidity, regulatory complexity, and multi-stakeholder coordination. Blockchain technology, combined with smart contracts and tokenization, offers an innovative solution by enabling fractional ownership, decentralized governance, and automated financial settlements in space projects.

This paper explores how tokenized space assets, such as satellites, lunar land rights, and mission data streams, can create decentralized investment models that improve liquidity, accessibility, and risk distribution for investors. Additionally, it examines smart contract automation in mission financing, resource trading, and international collaborations to streamline transactions and reduce bureaucratic delays.

Key topics include:

1. Space Asset Tokenization: - Fractional ownership models for satellites and lunar infrastructure. - Token-based governance for managing international space projects.
2. Smart Contracts for Automated Space Transactions: - Self-executing contracts for satellite leasing, data monetization, and supply chains. - Decentralized dispute resolution mechanisms for multi-party agreements.
3. Regulatory and Financial Implications: - Jurisdictional challenges of blockchain in space commerce. - Integrating smart contract-based transactions with existing space law frameworks.

By leveraging Web3 financial models, space commerce can become more accessible, scalable, and investor-friendly. This research provides a roadmap for integrating blockchain-driven economies into future space projects, setting the foundation for a sustainable and transparent interplanetary financial system.

Authors