

Executive Summary

The Spacemesh project originated with Prof. Tal Moran, who had been working on storage-based consensus methods for five years when he invented proof of space-time. He first presented this innovation in 2016, arguing that storage space is a highly underutilized and readily available resource suitable for decentralized consensus.

Spacemesh aims to solve three main problems:

- Fair global distribution of cryptocurrency.
- Lack of infrastructure for a global means of payment.
- Lack of satisfactory blockchain and smart contract infrastructure for creating fair communities.

Spacemesh aims to transform users into "fully-fledged, autonomous, value-creating network participants" by allowing them to create their own currency and use it in peer-to-peer transactions. The Smesh cryptocurrency will be created by ordinary people running platform software released by Spacemesh on their home PCs from anywhere in the world. The software component which each participant runs connects with components run by other participants. This would form a p2p network over the Internet.

Team

Aviv Eyal is a co-founder of Spacemesh and has worked as a software developer and digital products designer. He is passionate about creating user-friendly services and products that are innovative, useful, and have an excellent user experience. He has a B.Sc. in Philosophy and Computer Science from Tel Aviv University and has held Co-founder/CTO roles in many startups.

Tal Moran is the Chief Scientist at Spacemesh who has faculty and postdoctoral research positions at Reichman University and Harvard University, respectively. He obtained his Ph.D. from the Weizmann Institute of Science under the guidance of Moni Naor.

Wojciech Zaborowski (Applied Cryptographer) specializes in blockchain, consensus protocols, cryptography, and DeFi. He earned his B.Sc. in Mathematics from the University of Warsaw.

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Introduction to Spacemesh

Spacemesh is a team of experts dedicated to building a decentralized, secure, and energy-efficient global computer, focusing on scalable Smart Contracts. It also intends to create a cryptocurrency in a permissionless setting.

Spacemesh's operating system is primarily centered around its unique consensus protocol known as Proof of Space Time (PoST). This protocol differs from Proof of Work (PoW) because it only requires unused hard drive space instead of miners. The Spacemesh protocol allows newcomers to contribute to the security of the cryptocurrency network by contributing unused storage space on their computers. PoST retains the properties of PoW that are useful for permissionless consensus, but it reduces energy emissions drastically.

Unlike other protocols, Spacemesh uses a mesh (layered DAG) topology instead of a chain; this makes transactions significantly faster. The base protocol relies on the framework known as Mesh cash, but includes non-trivial modifications to support spacetime as the underlying resource.

Success Factors

- A highly qualified team of researchers and engineers.
- Large capital raised in Series A funding, which will enable the project to safely launch mainnet.
- Advantages over proof-of-stake and proof-of-work blockchains, such as environmentally friendly mining and improved security.
- Spacemesh OS can support a highly scalable network, thus enabling a wide range of use cases and global adoption.

Risks to the Project

Limited adoption: The project has been developed for large-scale adoption and optimal utilization of scarce computing resources available worldwide. However, only a small portion of Web2 users have started migrating to Web3 and are not familiar with concepts such as crypto mining, nodes, and decentralized networks.

Technological challenges: Spacemesh has not been launched yet. Therefore, there are risks associated with its protocols, for example, those related to math specification. During Q4 2022, it has intensified research activities and deployed several improvements to Tortoise and Hare.

Security risks: Like any blockchain network, Spacemesh is also faced with known or unknown security risks, which could derive from centralization, bugs, and other vulnerabilities.

Regulatory/Legal Risks: The occurrence of regulatory inquiries or regulatory actions could restrict or limit the project's progress. Moreover, evolving or new laws and regulations in certain jurisdictions may negatively affect the project.