

# Blockchain application for 6G wireless communications

Duc-Nghia Vu, 김재민, 변재영\*, 조성래  
중앙대학교, \*조선대학교

{dnvu, jmkim}@uclab.re.kr, jypyun@chosun.ac.kr, srcho@cau.ac.kr

## Abstract

The blockchain and distributed ledger technology is emerging as one of the enablers facilitate the functional standards of 6G [1]. It also can be used to manage identities and access permissions in 6G networks, enabling secure and decentralized authentication and authorization.

## I. Introduction

A blockchain is a decentralized distributed ledger maintained by an underlying peer-to-peer (P2P) network of nodes. A distributed ledger is a database that is spread across a network of computers, rather than being stored on a single, centralized server. Blockchain, on the other hand, is a specific type of distributed ledger that uses a chain of blocks to record and verify transactions. Each block in the chain contains a cryptographic hash of the previous block, making it tamper-proof and immutable [2][3].

## II. Blockchain application for 6G wireless communications

Blockchain can provide a secure and transparent way for devices and networks to share data in 6G wireless communication systems. This can be particularly useful in scenarios where privacy, security, and trust are critical, such as in healthcare, finance, and government [4]. It also can be used to manage identities and access permissions in 6G networks, enabling secure and decentralized authentication and authorization. This can help to prevent unauthorized access and cyberattacks, while also ensuring the privacy and confidentiality of user data.

While blockchain has potential benefits for 6G wireless communication systems, there are also several challenges. Number of approaches are explored to address them before blockchain can be

fully integrated into large-scale 6G networks.

Blockchain-based systems can be slow and computationally intensive, which can make them challenging to scale up to handle the large volumes of data and high-speed transactions that are expected in 6G networks.

## III. Conclusion

Blockchain is a potential technology for 6G wireless communication network. The combination of 6G and blockchain can revolutionize innovative applications in future wireless networks.

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