Abstract— With the development of blockchain technology, the fields of use of smart contracts are diversifying. Blockchain-based smart contracts are suitable in areas where integrity and transparency must be guaranteed with distributed ledger technology as the core. However, once the system is deployed, it cannot be modified, so it is important to ensure that the system works with the requirements and principles of the smart contract at the design stage. Therefore, in this paper, we aim to show that the system is accurate without contradictions/errors through formal verification using UPPAAL, a formal verification tool for the public descending auction system (Dutch Auction).

Keyword— Blockchain, Smart Contract, Formal Specification, Formal Verification, Model Checking

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