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Title: Distributed and Adversarial Resistant Workflow Execution on the Algorand Blockchain

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Abstract

We provide a practical translation from the Dynamic Condition Response (DCR) process modeling language to the Transaction Execution Approval Language (TEAL) used by the Algorand blockchain. Compared to earlier implementations of business process notations on blockchains, particularly Ethereum, the present implementation is four orders of magnitude cheaper. This translation has the following immediate ramifications: (1) It allows decentralized execution of DCR-specified business processes in the absence of expensive middlemen (lawyers, brokers) or counterparty risk. (2) It provides a possibly helpful high-level language for implementing business processes on Algorand. (3) It demonstrates that despite the strict limitations on Algorand smart contracts, they are powerful enough to encode models of a modern process notation.