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Complete decentralization of distributed data storages based on blockchain technology

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The report presents a solution for completely decentralized data management systems in geographically distributed environments with administratively unrelated or loosely related user groups and in conditions of partial or complete lack of trust between them. The solution is based on the integration of blockchain technology, smart contracts and provenance metadata driven data management. Architecture, operation principles and algorithms developed provides fault-tolerant, safe and reliable management of provenance metadata, control of operations with data files, as well as resource access management in collaborative distributed computing systems. The latter refer to distributed systems formed by combining into a single pool of computer resources of various organizations (institutions) to work together in the framework of some project.

Summary

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