

CLAIMS

What is claimed is:

1. A computer-implemented method for managing transactions on blockchain networks, the computer-implemented method comprising:

obtaining, by a scheduling device on a blockchain network, transaction data comprising a plurality of original pending transactions to be executed on the blockchain network among a plurality of accounts, the transaction data being stored on the blockchain network;

performing, by the scheduling device, a consolidation analysis of the plurality of original pending transactions to determine a plurality of modified pending transactions among the plurality of accounts, wherein a number of the plurality of modified pending transactions is less than a number of the plurality of original pending transactions; and maintaining, by the scheduling device, the plurality of original pending transactions with the plurality of modified pending transactions, without updating the transaction data stored on the blockchain network with the plurality of modified pending transactions,

wherein performing a consolidation analysis of the plurality of original pending transactions to determine a plurality of modified pending transactions comprises:

calculating a respective consolidated settlement for each of the plurality of accounts based on the plurality of original pending transactions;

grouping the plurality of accounts into a first group and a second group based on the respective consolidated settlements for the plurality of accounts;

matching first accounts in the first group with second accounts in the second group according to the respective consolidated settlements for the first and second accounts; and

generating the plurality of modified pending transactions based on a result of the matching.

2. The computer-implemented method of claim 1, further comprising:

sending, by the scheduling device, a consolidated settlement for a particular account of the plurality of accounts to a client device associated with the particular account, the consolidated settlement being associated with at least one of the plurality of modified pending transactions associated with the particular account.

3. The computer-implemented method of claim 2, further comprising:
obtaining, by the scheduling device, a query from the client device, the query requesting settlement information for the particular account associated with one or more of the plurality of original pending transactions,
wherein the consolidated settlement for the particular account is sent by the scheduling device in response to obtaining the query from the client device.
4. The computer-implemented method of any proceeding claim, further comprising:

sending, by the scheduling device, a request to a settlement account management (SAM) server to execute at least one of the plurality of modified pending transactions associated with a particular account of the plurality of accounts.

5. The computer-implemented method of claim 4, further comprising:

obtaining, by the scheduling device, a client request from a client device associated with the particular account, the client request authorizing settlement for the particular account,

wherein the request is sent to the SAM server in response to obtaining the client request from the client device.

6. The computer-implemented method of claim 4 or 5, further comprising:

receiving, by the scheduling device, a confirmation from the SAM server, the confirmation indicating that the at least one of the plurality of modified pending transactions associated with the particular account has been executed.

7. The computer-implemented method of claim 6, further comprising:

in response to receiving the confirmation from the SAM server, sending, by the scheduling device, a settlement entry to the blockchain network, the settlement entry specifying that the at least one of the plurality of modified pending transactions associated with the particular account has been executed.

8. The computer-implemented method of claim 7, further comprising:

storing, on the blockchain network, the settlement entry together with the plurality of original pending transactions.

9. The computer-implemented method of claim 8, further comprising:

verifying, on the blockchain network, settlement information associated with the particular account based on the settlement entry and the plurality of original pending transactions.

10. The computer-implemented method of any one of claims 6 to 9, further comprising:
in response to receiving the confirmation from the SAM server, updating, by the scheduling device, the plurality of modified pending transactions based on a settlement entry specifying that the at least one of the plurality of modified pending transaction associated with the particular account has been executed.
11. The computer-implemented method of any proceeding claim, wherein performing a consolidation analysis of the plurality of original pending transactions to determine a plurality of modified pending transactions comprises:
presenting the plurality of original pending transactions on a transaction graph; and
determining the plurality of modified pending transactions by modifying the transaction graph, wherein the plurality of modified pending transactions is presented on a modified transaction graph.
12. The computer-implemented method of any proceeding claim, wherein obtaining transaction data comprising a plurality of original pending transactions comprises:
synchronizing with the blockchain network to receive each of the plurality of original pending transactions from a respective client device associated with a respective account of the plurality of accounts.

13. An apparatus for implementing a blockchain-based workflow, the apparatus comprising a plurality of modules for performing the computer-implemented method of any one of claims 1 to 12.

14. A system for implementing a blockchain-based workflow, comprising:

one or more processors; and

one or more computer-readable memories coupled to the one or more processors and having instructions stored thereon that are executable by the one or more processors to perform the computer-implemented method of any one of claims 1 to 12.