transactions. Accordingly, the use of traditional payment networks and payment systems technologies in combination with blockchain currencies may provide consumers and merchants the benefits of the decentralized blockchain while still maintaining security of account information and provide a strong defense against fraud and theft.

SUMMARY

The present disclosure provides a description of systems and methods for linking blockchain transactions to privately verified identities.

A method for linking blockchain transactions to privately verified identities includes: verifying a blockchain transaction having a block that is added to a blockchain without waiting for verification of the blockchain by a blockchain network by: storing, in an account database in a payment network that processes blockchain-based transactions and traditional payment rails, a plurality of account profiles, wherein each account profile includes data related to a transaction account including at least an account identifier and account data; receiving, by a server in the payment network that processes the blockchain-based transactions and the traditional payment rails, a transaction message to verify the blockchain transaction for the blockchain network, wherein the transaction message is formatted based on one or more standards and includes a plurality of data elements including at least a first data element configured to store a personal account number, a second data element configured to store a merchant identifier, and a third data element configured to store at least a blockchain network identifier that identifies the blockchain network to the payment network for posting the blockchain transaction after verifying the blockchain transaction; identifying, by a processing device in the payment network that processes the blockchain-based transactions and the traditional payment rails, a first account profile stored in the account database where the included account identifier corresponds to the personal account number stored in the first data element included in the received transaction message; identifying, by the processing device in the payment network that processes the blockchain-based transactions and the traditional payment rails, a second account profile stored in the account database where the included account identifier corresponds to

the merchant identifier stored in the second data element included in the received transaction message; receiving, by the server in the payment network that processes the blockchain-based transactions and the traditional payment rails, a transaction notification, wherein the transaction notification indicates a transaction processed using the blockchain network associated with the blockchain network identifier stored in the third data element included in the received transaction message and includes at least a transaction identifier and an address identifier associated with one of the first account profile and the second account profile; and storing, by the processing device in the payment network that processes the blockchain-based transactions and the traditional payment rails, a linkage between the transaction identifier included in the received transaction notification and at least one of: the address identifier, the personal account number, and the merchant identifier.

A system for linking blockchain transactions to privately verified identities includes an account database, a server, and a processing device. The account database, in a payment network that processes blockchain-based transactions and traditional payment rails, is configured to store a plurality of account profiles, wherein each account profile includes data related to a transaction account including at least an account identifier and account data. The server, in the payment network that processes the blockchain-based transactions and the traditional payment rails, receives a transaction message and verifies a blockchain transaction having a block that is added to a blockchain without waiting for verification of the blockchain by a blockchain network, wherein the transaction message is formatted based on one or more standards and includes a plurality of data elements including at least a first data element configured to store a personal account number, a second data element configured to store a merchant identifier, and a third data element configured to store at least a blockchain network identifier that identifies the blockchain network to the payment network for posting the blockchain transaction after verifying the blockchain transaction. The processing device, in the payment network that processes the blockchain-based transactions and the traditional payment rails, is configured to: identify a first account profile stored in the account database where the included account identifier corresponds to the personal account number stored in the first data element included in the received transaction message; and identify a second account profile stored in the account database where the included account identifier corresponds to the merchant identifier stored in the second data element included in the received transaction message. The server is further configured to receive a transaction notification, wherein the transaction notification indicates a transaction processed using the blockchain network associated with the blockchain network identifier stored in the third data element included in the received transaction message and includes at least a transaction identifier and an address identifier associated with one of the first account profile and the second account profile. The processing device is further configured to store a linkage between the transaction identifier included in the received transaction notification and at least one of: the address identifier, the personal account number, and the merchant identifier.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

The scope of the present disclosure is best understood from the following detailed description of exemplary embodiments when read in conjunction with the accompanying drawings. Included in the drawings are the following figures:

WHAT IS CLAIMED IS:

1. A method for linking blockchain transactions to privately verified identities, comprising:

verifying a blockchain transaction having a block that is added to a blockchain without waiting for verification of the blockchain by a blockchain network by:

storing, in an account database in a payment network that processes blockchain-based transactions and traditional payment rails, a plurality of account profiles, wherein each account profile includes data related to a transaction account including at least an account identifier and account data;

receiving, by a server in the payment network that processes the blockchain-based transactions and the traditional payment rails, a transaction message to verify the blockchain transaction for the blockchain network, wherein the transaction message is formatted based on one or more standards and includes a plurality of data elements including at least a first data element configured to store a personal account number, a second data element configured to store a merchant identifier, and a third data element configured to store at least a blockchain network identifier that identifies the blockchain network to the payment network for posting the blockchain transaction after verifying the blockchain transaction;

identifying, by a processing device in the payment network that processes the blockchain-based transactions and the traditional payment rails, a first account profile stored in the account database where the included account identifier corresponds to the personal account number stored in the first data element included in the received transaction message;

identifying, by the processing device in the payment network that processes the blockchain-based transactions and the traditional payment rails, a second account profile stored in the account database where the included account identifier corresponds to the merchant identifier stored in the second data element included in the received transaction message;

receiving, by the server in the payment network that processes the blockchain-based transactions and the traditional payment rails, a transaction notification, wherein the transaction notification indicates a transaction

processed using the blockchain network associated with the blockchain network identifier stored in the third data element included in the received transaction message and includes at least a transaction identifier and an address identifier associated with one of the first account profile and the second account profile; and

storing, by the processing device in the payment network that processes the blockchain-based transactions and the traditional payment rails, a linkage between the transaction identifier included in the received transaction notification and at least one of: the address identifier, the personal account number, and the merchant identifier.

2. The method of claim 1, wherein the linkage is stored in a transaction database as a linkage profile, the linkage profile including at least

the transaction identifier and the at least one of: the address identifier, the personal account number, and the merchant identifier.

3. The method of claim 1, wherein the linkage is stored in the first account profile.

4. The method of claim 1, wherein the linkage is stored in the second account profile.

5. The method of claim 1, wherein the transaction message includes a fourth data element configured to store a processing code indicative of a non-currency transaction.

6. The method of claim 1, wherein the address identifier is a hash generated using a public key associated with one of the first account profile and the second account profile.

7. The method of claim 1, wherein the transaction message includes a message type indicator indicative of an authorization message.

8. The method of claim 1, wherein the account data includes at least one of: transaction data, location data, characteristic data, and fraud data.

9. A system for linking blockchain transactions to privately verified identities, comprising:

an account database, in a payment network that processes blockchain-based transactions and traditional payment rails, configured to store a plurality of account profiles, wherein each account profile includes data related to a transaction account including at least an account identifier and account data;

a server, in the payment network that processes the blockchain-based transactions and the traditional payment rails, that receives a transaction message and verifies a blockchain transaction having a block that is added to a blockchain without waiting for verification of the blockchain by a blockchain

network, wherein the transaction message is formatted based on one or more standards and includes a plurality of data elements including at least a first data element configured to store a personal account number, a second data

element configured to store a merchant identifier, and a third data element configured to store at least a blockchain network identifier that identifies the blockchain network to the payment network for posting the blockchain transaction after verifying the blockchain transaction; and

a processing device, in the payment network that processes the blockchain-based transactions and the traditional payment rails, configured to

identify a first account profile stored in the account database where the included account identifier corresponds to the personal account number stored in the first data element included in the received transaction message, and

identify a second account profile stored in the account database where the included account identifier corresponds to the merchant identifier stored in the second data element included in the received transaction message, wherein

the server is further configured to receive a transaction notification, wherein the transaction notification indicates a transaction processed using the blockchain network associated with the blockchain network identifier stored in the third data element included in the received transaction message and includes at least a transaction identifier and an address identifier associated with one of the first account profile and the second account profile, and

the processing device is further configured to store a linkage between the transaction identifier included in the received transaction notification and at least one of: the address identifier, the personal account number, and the merchant identifier.

10. The system of claim 9, further comprising:

a transaction database, wherein the linkage is stored in the transaction database as a linkage profile, the linkage profile including at least the transaction identifier and the at least one of: the address identifier, the personal account number, and the merchant identifier.

11. The system of claim 9, wherein the linkage is stored in the first account profile.

12. The system of claim 9, wherein the linkage is stored in the second account profile.