

## THE INVENTION CLAIMED IS

1. A computer-implemented method for implementing a blockchain-based entity identification network comprising a plurality of nodes, the method comprising:

establishing, with at least one processor, a blockchain network comprising the plurality of nodes, the plurality of nodes comprising a plurality of client nodes and a plurality of entity nodes;

maintaining, with at least one processor, a distributed ledger on a plurality of administrative nodes of the blockchain network, the plurality of administrative nodes comprising at least one of the following nodes from the plurality of nodes: a client node of the plurality of client nodes, an entity node from the plurality of entity nodes, a service provider node, or any combination thereof;

maintaining, with at least one processor, separate permissions for at least the plurality of client nodes and the plurality of entity nodes, the separate permissions comprising a plurality of rules governing access to the distributed ledger;

receiving, from at least one node of the plurality of nodes, entity data and at least one entity identifier, the entity data corresponding to the at least one entity identifier;

publishing, with at least one processor, the entity data to the distributed ledger;

querying, with at least one processor, the distributed ledger based on at least one entity identifier received from a client node; and

determining, with at least one processor and based on the distributed ledger, entity data corresponding to the at least one entity identifier received from the client node.

2. The computer-implemented method of claim 1, wherein the at least one entity identifier comprises at least one Bank Identification Number (BIN), and wherein the entity data corresponds to at least one issuer institution.

3. The computer-implemented method of claim 1, wherein the at least one entity identifier comprises a range of entity identifiers associated with an entity.

4. The computer-implemented method of claim 1, wherein the plurality of nodes comprises at least one service provider node, and wherein the at least one service provider node is operated and/or controlled by at least one transaction service provider.

5. The computer-implemented method of claim 4, further comprising modifying the distributed ledger in response to receiving a request from the at least one service provider node, wherein modifying the distributed ledger comprises at least one of the following: associating entity data with at least one entity identifier, disassociating entity data with at least one entity identifier, or any combination thereof.

6. The computer-implemented method of claim 1, further comprising modifying the distributed ledger in response to receiving a request from an entity node corresponding to an entity, wherein modifying the distributed ledger comprises at least one of the following: associating at least one entity identifier with a different entity, disassociating at least one entity identifier with a different entity, or any combination thereof.

7. The computer-implemented method of claim 1, further comprising maintaining the separate permissions for at least one service provider node, the plurality of client nodes, and the plurality entity of nodes.

8. A computer program product for implementing a blockchain-based entity identification network, comprising at least one non-transitory computer-readable medium including program instructions that, when executed by at least one processor, cause the at least one processor to:

establish a blockchain network comprising a plurality of nodes, the plurality of nodes comprising a plurality of client nodes and a plurality of entity nodes;

maintain a distributed ledger on a plurality of administrative nodes of the blockchain network, the plurality of administrative nodes comprising at least one of the

following nodes from the plurality of nodes: a client node of the plurality of client nodes, an entity node from the plurality of entity nodes, a service provider node, or any combination thereof;

maintain separate permissions for at least the plurality of client nodes and the plurality of entity nodes, the separate permissions comprising a plurality of rules governing access to the distributed ledger;

receive, from at least one node of the plurality of nodes, entity data and at least one entity identifier, the entity data corresponding to the at least one entity identifier;

publish the entity data to the distributed ledger;

query the distributed ledger based on at least one entity identifier received from a client node; and

determine, based on the distributed ledger, entity data corresponding to the at least one entity identifier received from the client node.

9. The computer program product of claim 8, wherein the at least one entity identifier comprises at least one Bank Identification Number (BIN), and wherein the entity data corresponds to at least one issuer institution.

10. The computer program product of claim 8, wherein the at least one entity identifier comprises a range of entity identifiers associated with an entity.

11. The computer program product of claim 8, wherein the plurality of nodes comprises at least one service provider node, and wherein the at least one service provider node is operated and/or controlled by at least one transaction service provider.

12. The computer program product of claim 11, wherein the program instructions, when executed by the at least one processor, further cause the at least one processor to modify the distributed ledger in response to receiving a request from the at least one service provider node, wherein modifying the distributed ledger comprises at least one of the following: associating entity data with at least one entity identifier, disassociating entity data with at least one entity identifier, or any combination thereof.

13. The computer program product of claim 8, wherein the program instructions, when executed by the at least one processor, further cause the at least one processor to modify the distributed ledger in response to receiving a request from an entity node corresponding to an entity, wherein modifying the distributed ledger comprises at least one of the following: associating at least one entity identifier with a different entity, disassociating at least one entity identifier with a different entity, or any combination thereof.

14. The computer program product of claim 8, wherein the program instructions, when executed by the at least one processor, further cause the at least one processor to maintain the separate permissions for at least one service provider node, the plurality of client nodes, and the entity nodes.

15. A blockchain-based entity identification network, comprising:

(a) a plurality of administrative nodes, each administrative node of the plurality of administrative nodes comprising a computing device programmed or configured to host a distributed ledger;

(b) a plurality of entity nodes, each entity node of the plurality of entity nodes comprising a computing device programmed or configured to create, modify, and/or delete entity data published to the distributed ledger hosted by the plurality of administrative nodes, the entity data corresponding to at least one entity identifier; and

(c) a plurality of client nodes, each client node of the plurality of client nodes comprising a computing device programmed or configured to: (i) query the distributed ledger based on at least one queried entity identifier, and (ii) receive entity data corresponding to the at least one queried entity identifier in response to the query, wherein separate permissions are maintained for at least the plurality of client nodes and the plurality of entity nodes, the separate permissions comprising a plurality of rules governing access to the distributed ledger.

16. The blockchain-based entity identification network of claim 15, wherein each entity node of the plurality of entity nodes corresponds to an issuer system, and wherein the entity data corresponds to at least one issuer institution associated with the issuer system.

17. The blockchain-based entity identification network of claim 16, wherein the at least one entity identifier comprises at least one Bank Identification Number (BIN).

18. The blockchain-based entity identification network of claim 15, wherein at least one of an administrative node of the plurality of administrative nodes, an entity node of the plurality of entity nodes, or a client node of the plurality of client nodes is programmed or configured to query the distributed ledger based on the at least one entity identifier.

19. The blockchain-based entity identification network of claim 15, wherein only the plurality of administrative nodes has permission to assign entity identifiers to entities.