CLAIMS

1. A method for seamlessly processing transactions using distributed ledger technology (DLT), comprising:

establishing, by a distributed ledger technology application executed or hosted by one or more processors, a connection with a banking computing application executed by a banking computing infrastructure using a routing address configured to be used in communication with a first communication protocol with which client devices and the banking computing application can route messages through the distributed ledger technology application;

linking, by the distributed ledger technology application over the connection with the banking computing application executed by the banking computing infrastructure via the first communication protocol, one or more accounts hosted in the banking computing infrastructure to one or more DLT-based client accounts hosted on a distributed ledger;

storing, by the distributed ledger technology application, one or more wallet identifications for the one or more DLT-based client accounts and a mapping of the one or more wallet identifications to the one or more accounts hosted in the banking computing infrastructure;

matching, by the distributed ledger technology application, a balance on each respective account of the one or more accounts with an aggregate of client balances on the one or more DLT-based client accounts mapped to the respective account for an asset of a first asset type;

receiving, by the distributed ledger technology application from a client device through the first communication protocol using the routing address of the distributed ledger technology application, a transaction request to transfer an asset from a first DLT-based client account to a destination account hosted in the banking computing infrastructure, the transaction request comprising an identifier of the first DLT-based client account, an identifier of the destination account, and the routing address of the distributed ledger technology application;

mapping, by the distributed ledger technology application, the first DLT-based client account to a source account hosted in the banking computing infrastructure based on the mapping of the one or more wallet identifications to the one or more accounts hosted in the banking computing infrastructure;

generating, by the distributed ledger technology application using the established connection with the routing address of the distributed ledger technology application, a new transaction request comprising an identification of the source account, the identifier of the

destination account, and the asset being transferred to the destination account, to the banking computing application executed by the banking computing infrastructure to complete the transaction request;

receiving, by the distributed ledger technology application, an indication of completion of the asset transfer; and

generating, by the distributed ledger technology application, an instruction to cause nodes maintaining the distributed ledger to add a record of the asset transfer to the distributed ledger.

2. The method of claim 1, wherein a wallet owner of the first DLT-based client account is authorized to instruct a transferor/transferee account of the banking computing infrastructure and instructs the transferor/transferee account via the distributed ledger technology application.

3. The method of claim 2, comprising executing the asset transfer by transferring, by the distributed ledger technology application, a plurality of assets between two or more DLT-based client accounts.

4. The method of claim 1, further comprising:

determining, by the distributed ledger technology application, one or more transaction conditions have been met and

executing, by the distributed ledger technology application, the asset transfer in response to the determination that the one or more transaction conditions have been met.

5. The method of claim 4, comprising transmitting, by the distributed ledger technology application, debit or credit confirmations to each account involved in the asset transfer.

6. The method of claim 1, wherein the asset transfer is a transfer of cash, and comprising executing the asset transfer by executing the asset transfer in response to a receive instruction matching a deliver instruction for the asset transfer.

7. The method of claim 1, wherein the distributed ledger technology application is configured to not require any matching instructions for the asset transfer if one or more conditions are met; and comprising exchanging, by the distributed ledger technology application, a sequence of messages to execute the asset transfer by exchanging, by the one or more processors, the sequence of messages without receiving a matching instruction from a client device associated with the asset transfer after a determination that the one or more conditions are met.

8. The method of claim 7, wherein the distributed ledger technology application is configured to require matching instructions for the asset transfer unless a client device associated with the asset transfer has previously specified a preference to accept incoming transfers if one or more conditions are met and the one or more conditions are met.

9. The method of claim 1, wherein when the asset transfer is a token transfer involving two parties, one party accepts “allegement” via a distributed ledger technology application interface instead of entering a matching transaction.

10. The method of claim 1, comprising executing the asset transfer by transferring, by the distributed ledger technology application, an asset from a token from a first DLT-based client account to a non-DLT-based client account.

11. The method of claim 10, wherein a wallet owner of the first DLT-based client account is authorized to instruct a transferor/transferee account and instructs the transferor/transferee account via the distributed ledger technology application.

12. The method of claim 1, comprising:

receiving, by the distributed ledger technology application, a message initiating the asset transfer from a first client device via the first communication protocol; and

transmitting, by the distributed ledger technology application, subsequent messages with the first client device or a second client device via a second communication protocol.

13. The method of claim 1, comprising:

receiving, by the distributed ledger technology application, a message from a first client device via a SWIFT communication protocol; and

receiving, by the distributed ledger technology application, a message from a second client device via a custom communication protocol.

14. The method of claim 1, comprising executing the asset transfer by, when the asset transfer is a transfer of a digital native asset, transferring, by the distributed ledger technology application, the digital-native asset from a first DLT-based client account to a second DLT-based client account without exchanging any messages with the banking computing infrastructure.

15. The method of claim 1, further comprising:

receiving, by the distributed ledger technology application, one or more conditions under which the distributed ledger technology application will automatically accept a transaction; and

executing, by the distributed ledger technology, the asset transfer in response to the one or more conditions being satisfied.

16. The method of claim 1, further comprising:

updating, by the distributed ledger technology application, the distributed ledger as an intermediate step while executing the asset transfer.

17. The method of claim 1, comprising:

exchanging, by the distributed ledger technology application, a sequence of messages with financial institutions via the first communication protocol.

18. The method of claim 1, wherein any external transfers originating at one of the one or more accounts linked to DLT client-based accounts are only permitted to be initiated by the distributed ledger technology application.

19. The method of claim 1, comprising executing the asset transfer by transferring, by the distributed ledger technology application, an asset from a token from the first DLT-based client account to a second DLT-based client account.

20. A system for seamlessly processing transactions using distributed ledger technology (DLT), the system comprising:

an application server comprising a processor executing or hosting a distributed ledger technology application, the processor configured to execute or host the distributed ledger technology application to:

establish a connection with a banking computing application executed by a banking computing infrastructure using a routing address configured to be used in communication with a first communication protocol with which client devices and the banking computing application can route messages through the distributed ledger technology application;

link, over the connection with the banking computing application executed by the banking computing infrastructure via the first communication protocol, one or more accounts hosted in the banking computing infrastructure to one or more DLT-based client accounts hosted on a distributed ledger;

store one or more wallet identifications for the one or more DLT-based client accounts and a mapping of the one or more wallet identifications to the one or more accounts hosted in the banking computing infrastructure;

match a balance on each respective account of the one or more accounts with an aggregate of client balances on the one or more DLT-based client accounts mapped to the respective account for an asset of a first asset type;

receive, from a client device through the first communication protocol using the routing address of the distributed ledger technology application, a transaction request to transfer an asset from a first DLT-based client account to a destination account hosted in the banking computing infrastructure, the transaction request comprising an identifier of the first DLT-based client account, an identifier of the destination account, and the routing address of the distributed ledger technology application;

map the first DLT-based client account to a source account hosted in the banking computing infrastructure based on the mapping of the one or more wallet identifications to the one or more accounts hosted in the banking computing infrastructure;

generate, using the established connection with the routing address of the distributed ledger technology application, a new transaction request comprising an identification of the source account, the identifier of the destination account, the routing address of the distributed ledger technology application, and the asset being transferred to the destination account, to the banking computing application executed by the banking computing infrastructure to complete the transaction request;

receive, via the first communication protocol, an indication of completion of the asset transfer; and

generate an instruction to cause nodes maintaining the distributed ledger to add a record of the asset transfer to distributed ledger.