CLAIMS

1. A method for distributed-ledger based intercompany netting involving a first entity within an organization and a second entity within the organization, and a financial institution comprising:

receiving, at the financial institution and from the first entity, a first deposit of a first amount of fiat currency funds to a first account for storing a fiat currency;

writing, by the financial institution and in response to the first deposit, a first token-funding transaction to a first copy of a distributed ledger maintained by the financial institution, wherein the first transaction indicates the first amount of fiat currency funds;

executing, in response to the writing of the first transaction, a tokenization smart contract tokenizes the first amount of fiat currency funds to a first amount of digital token funds and writes the first amount of digital token funds to a first token wallet for the first entity on the first copy of the distributed ledger maintained by the financial institution;

executing, in response to the tokenization of the first amount of fiat currency, a restriction smart contract, wherein the restriction smart contract applies a first restriction to the first amount of fiat currency funds in the first account, and wherein the first restriction restricts access to the first amount of fiat currency funds in the first account;

receiving, at the financial institution and from the second entity, a second deposit of a second amount of fiat currency funds to a second account for storing a fiat currency;

writing, by the financial institution and in response to the second deposit, a second token-funding transaction to the first copy of a distributed ledger

maintained by the financial institution, wherein the second transaction indicates the second amount of fiat currency funds;

executing, in response to the second transaction, the tokenization smart contract, wherein the tokenization smart contract tokenizes the second amount of fiat currency funds to a second amount of digital token funds and writes the second amount of digital token funds to a second token wallet for the second entity on the first copy of the distributed ledger maintained by the financial institution;

executing, in response to the tokenization of the second amount of fiat currency, the restriction smart contract, wherein the restriction smart contract applies a second restriction to the second amount of fiat currency funds in the second account, and wherein the second restriction restricts access to the second amount of fiat currency funds in the second account;

writing, by the first entity, an inter-entity transaction to a second copy of the distributed ledger maintained by the first entity, wherein the inter-entity transaction specifies a transfer amount of digital token funds, and wherein the transfer amount of digital token funds indicates an amount of digital token funds to be transferred from the first entity to the second entity;

executing, in response to the inter-entity transaction, a netting smart contract, wherein the netting smart contract determines the transfer amount of digital token funds, deducts the transfer amount from a token balance of the first token wallet, and adds the transfer amount to a token balance of the second token wallet; and

reconciling the first account and the second account based on the balances in the first token wallet and the second token wallet, respectively.

2. The method of claim 1, wherein the first amount of fiat currency funds and the second amount of fiat currency funds are tokenized to digital token funds with a one-to-one correspondence with the fiat currency funds.

3. The method of claim 1, further comprising:

receiving a surrender token amount from the first entity, wherein the surrender token amount comprises an amount of tokens from the first amount of digital token funds to be redeemed for a corresponding amount of fiat currency funds;

deducting, by the restriction smart contract, the surrender token amount from the first token wallet; and

partially releasing, by the restriction smart contract, the first restriction to the first amount of fiat currency funds in the first account, wherein the partially releasing releases a partial amount of the first amount of fiat currency equal to the corresponding amount of fiat currency funds.

4. The method of claim 3, wherein the restriction smart contract destroys or deletes the surrender token amount of tokens from the first token wallet.

5. The method of claim 3, wherein the deduction for the first token wallet is written to the distributed ledger.

6. The method of claim 1, wherein the first entity, the second entity, and the financial institution are nodes in a distributed ledger network and each maintain a copy of the distributed ledger.

7. The method of claim 1, wherein the first account or the second account comprises an escrow account.

8. The method of claim 1, wherein the first account or the second account comprises a treasury omnibus account.

9. A system for distributed-ledger based intercompany netting, comprising:

a first entity within an organization;

a second entity within the organization; and

a financial institution that maintains a first account for the first entity, and a second account for the second entity, wherein the first account and the second account are configured to store a fiat currency;

wherein:

the financial institution receives a deposit of a first amount of fiat currency funds to the first account from the first entity;

the financial institution writes, in response to the first deposit, a first token-funding transaction to a first copy of the distributed ledger maintained by the financial institution, wherein the first transaction indicates the first amount of fiat currency funds;

in response to the first transaction, a tokenization smart contract executes, wherein the tokenization smart contract tokenizes the first amount of fiat currency funds to a first amount of digital token funds and writes the first amount of digital token funds to a first token wallet for the first entity on the first copy of the distributed ledger maintained by the financial institution;

in response to the tokenization of the first amount of fiat currency, a restriction smart contract executes, wherein the restriction smart contract applies a first restriction to the first amount of fiat currency funds in the first account, and wherein the first restriction restricts access to the first amount of fiat currency funds in the first account;

the financial institution receives a deposit of a second amount of fiat currency funds to the second account from the second entity;

the financial institution writes, in response to the second deposit, a second token-funding transaction to the first copy of the distributed ledger maintained by the financial institution, wherein the second transaction indicates the second amount of fiat currency funds;

in response to the second transaction, the tokenizing smart contract tokenizes the second amount of fiat currency funds to a second amount of digital token funds and writes the second amount of digital token funds to a second token wallet for the second entity on the first copy of the distributed ledger maintained by the financial institution;

in response to the tokenization of the second amount of fiat currency, the restriction smart contract executes, wherein the restriction smart contract applies a second restriction to the second amount of fiat currency funds in the second account, and wherein the second restriction restricts access to the second amount of fiat currency funds in the second account;

the first entity writes an inter-entity transaction to a second copy of the distributed ledger maintained by the first entity, wherein the inter-entity transaction specifies a transfer amount of digital token funds, and wherein the transfer amount of digital token funds indicates an amount of digital token funds to be transferred from the first entity to the second entity; and

in response to the inter-entity transaction, a netting smart contract executes, wherein the netting smart contract determines the transfer amount of digital token funds, deducts the transfer amount from a token balance of the first token wallet, and adds the transfer amount to a token balance of the second token wallet; and

the financial institution reconciles the first account and the second account based on the balances in the first token wallet and the second token wallet, respectively.

10. The system of claim 9, wherein the first amount of fiat currency funds and the second amount of fiat currency funds are tokenized with a one-to-one correspondence with the fiat currency funds.

11. The system of claim 9, wherein:

the financial institution receives a surrender token amount from the first entity, wherein the surrender token amount comprises an amount of tokens from the first amount of digital token funds to be redeemed for a corresponding amount of fiat currency funds;

the restriction smart contract deducts the surrender token amount from the first token wallet; and

the restriction smart contract makes a partial release of the first restriction to the first amount of fiat currency funds in the first account, the partial release comprising releasing a partial amount of the first amount of fiat currency equal to the corresponding amount of fiat currency funds.

12. The system of claim 11, wherein the restriction smart contract destroys or deletes the surrender token amount of tokens from the first token wallet.

13. The system of claim 9, wherein the first entity, the second entity, and the financial institution are nodes in a distributed ledger network and each maintains a copy of the distributed ledger.

14. The system of claim 9, wherein the first account or the second account comprises an escrow account.