

CLAIMS

What is claimed is:

1. A network node comprising:
 - at least one processor;
 - at least one memory communicatively coupled to the at least one processor;
 - at least one network interface communicatively coupled to the at least one processor;
 - wherein the network node is configured to be within a plurality of network nodes communicatively coupled in a peer-to-peer network of network nodes implementing a distributed ledger;
 - wherein the network node is configured to be communicatively coupled to at least one remotely located computing device through the at least one network interface;
 - wherein the at least one processor is configured to:
 - receive, from a remotely located computing device, a request to transfer a security token;
 - execute a plurality of compliance rules associated with the security token, wherein at least one of the plurality of compliance rules is implemented using at least one smart contract separate from an originating smart contract that implements the security token, wherein the at least one smart contract is implemented on the distributed ledger and references a global registry implemented using multiple additional smart contracts;
 - transfer the security token based on the execution of the plurality of compliance rules;
 - wherein the global registry comprises at least one personally identifiable information (PII) hash for each of at least one investor associated with the transfer of the security token, wherein the at least one PII hash for each of the at least one investor is committed to the distributed ledger, wherein each of the at least one PII hash is updated when PII of a respective one of the at least one investor changes;
 - wherein the global registry comprises at least one indication of:

whether an offering of the security token qualifies under Securities and Exchange Commission (SEC) Regulation A;
whether at least one of the at least one investor qualifies under SEC Regulation D; and
whether the offering of the security token qualifies under SEC Regulation S; and
whether anti-money laundering and know-your-customer (AML/KYC) checks have been performed for the at least one investor associated with the transfer of the security token.

2. A computerized method for transferring a self-enforcing security token, wherein the computerized method is performed by a network node configured to be included within a plurality of network nodes in a peer-to-peer network of network nodes implementing a distributed ledger, wherein the network node is configured to be communicatively coupled to other network nodes in the peer-to-peer network, the computerized method comprising:

receiving, from a remotely located computing device, a request to transfer a security token;

executing a plurality of compliance rules associated with the security token, wherein at least one of the plurality of compliance rules is implemented using at least one smart contract separate from an originating smart contract that implements the security token, wherein the at least one smart contract is implemented on the distributed ledger and references a global registry implemented using multiple additional smart contracts; and

transferring the security token based on the execution of the plurality of compliance rules;

wherein the global registry comprises at least one personally identifiable information (PII) hash for each of at least one investor associated with the transfer of the security token, wherein the at least one PII hash for each of the at least one investor is committed to the distributed ledger, wherein each of the at least one PII hash is updated when PII of a respective one of the at least one investor changes;

wherein the global registry comprises at least one indication of:

whether an offering of the security token qualifies under Securities and Exchange Commission (SEC) Regulation A;

whether at least one of the at least one investor qualifies under SEC Regulation D; and

whether the offering of the security token qualifies under SEC Regulation S;

whether anti-money laundering and know-your-customer (AML/KYC) checks have been performed for the at least one investor associated with the transfer of the security token; and

a length of time a particular security token has been owned by a particular investor.

3. The network node or computerized method of any of claims 1-2, wherein the security token is a cryptographic token that represents an external, tradeable asset.

~~4. The network node or computerized method of any of claims 1-3, wherein the global registry includes at least one personally identifiable information (PII) hash for each of the at least one investor associated with the transfer of the security token, wherein the at least one PII hash for each of the at least one investor is committed to the distributed ledger, wherein each of the at least one PII hash is updated when PII of a respective one of the at least one investor changes.~~

~~54.~~ The network node or computerized method of any of claims 1-~~43~~, wherein the at least

one indication of the global registry further comprises at least one indication of:

whether a freeze has been placed on any of the at least one investor;

whether a freeze has been placed on the security token;

whether a freeze has been placed on a custodian associated with the transfer of the security token; and

whether a freeze has been placed on any broker dealer associated with the transfer of the security token.

~~65.~~ The network node or computerized method of claim ~~54~~,

wherein a freeze is placed on or removed from any of the at least one investor by modifying attributes in an investor element in the global registry;

wherein a freeze is placed on or removed from the security token by modifying attributes in a security token element in the global registry;
wherein a freeze is placed on or removed from the custodian by modifying attributes in a custodian element in the global registry; and
wherein a freeze is placed on or removed from any broker dealer associated with the transfer of the security token by modifying attributes in a broker dealer element in the global registry.

76. The network node or computerized method of claim 54, wherein the global registry comprises a data storage smart contract that stores the at least one indication in the global registry.

87. The network node or computerized method of any of claims 1 and claims 3 to 76 when dependent on claim 1, wherein the security_token stores a table that indicates a length of time a particular security token has been owned by a particular investor.

8. The network node or computerized method of any of claims 2 and claims 3 to 6 when dependent on claim 2, wherein the security token stores a table that indicates the length of time the particular security token has been owned by the particular investor.

9. The network node or computerized method of any of claims 1-8, wherein the security_token is implemented using ~~an~~ the originating smart contract.

10. The network node or computerized method of any of claims 1-9, wherein a record of an issuance of the security token is recorded on the distributed ledger.

11. The network node or computerized method of any of claims 1-10, wherein a record of

the transfer of the security token is committed to the distributed ledger.

12. A system, comprising:

a plurality of network nodes communicatively coupled in a peer-to-peer network of network nodes implementing a distributed ledger, each network node comprising:

at least one processor;

at least one memory communicatively coupled to the at least one processor;

wherein the at least one processor is configured to:

receive, from a remotely located computing device, a request to transfer a smart-contract-based security token;

execute a plurality of smart-contract-based compliance rules implemented on the distributed ledger and associated with the smart-contract-based security token, wherein the plurality of smart-contract-based compliance rules are implemented in at least one smart contract separate from an originating smart contract implementing the smart-contract-based security token; and

transfer the smart-contract-based security token based on the execution of the plurality of smart-contract-based compliance rules, wherein the transfer comprises updating a table of balances in the smart-contract-based security token;

the smart-contract-based security token stored on the distributed ledger;

wherein the smart-contract-based security token is a cryptographic token that represents an external, tradeable asset;

wherein the smart-contract-based security token references the plurality of smart-contract-based compliance rules that are associated with the smart-contract-based security token; and

wherein at least one of the plurality of smart-contract-based compliance rules references a smart-contract-based global registry; and the smart-contract-based global registry, comprising:

at least one personally identifiable information (PII) hash for each of at least one investor associated with the transfer of the security token, wherein the at least one PII hash for each of the at least one investor is committed to

the distributed ledger, wherein each of the at least one PII hash is updated when PII of a respective one of the at least one investor changes;

indications of whether at least one of the at least one investor qualifies under Securities and Exchange Commission (SEC) Regulation D, and whether an offering of the security token qualifies under SEC Regulation A and S; and

an indication of whether anti-money laundering and know-your-customer (AML/KYC) checks have been performed by a broker dealer associated with the transfer of the smart-contract-based security token.

13. The system of claim 12, wherein the smart-contract-based global registry further

comprises at least one indication of:

whether a freeze has been placed on any of the at least one investor;

whether a freeze has been placed on the smart-contract-based security token;

whether a freeze has been placed on a custodian associated with the transfer of the smart-contract-based security token; and

whether a freeze has been placed on any broker dealer associated with the transfer of the smart-contract-based security token.

14. The system of any of claims 12-13,

wherein a freeze is placed on or removed from any of the at least one investor by modifying attributes in an investor element in the smart-contract-based global registry;

wherein a freeze is placed on or removed from the smart-contract-based security token by modifying attributes in a security token element in the smart-contract-based global registry;

wherein a freeze is placed on or removed from the custodian by modifying attributes in a custodian element in the smart-contract-based global registry; and

wherein a freeze is placed on or removed from any broker dealer associated with the transfer of the smart-contract-based security token by modifying attributes in a broker dealer element in the smart-contract-based global registry.

15. The system of any of claims 12-14, wherein the smart-contract-based security token stores a table that indicates a length of time a particular smart-contract-based security token has been owned by a particular investor.