CLAIMS

1.A computer-implemented method performed by a blockchain node of a first blockchain network, comprising:

receiving a cyphertext of a digital document specifying a guarantee from a first computing device associated with at least a first guarantor and one or more zero-knowledge proofs (ZKPs) related to one or more values associated with the guarantee, wherein the guarantee is made by the at least a first guarantor to a beneficiary, and the digital document specifies one or more predetermined conditions of executing the guarantee;

verifying that the one or more ZKPs are correct;

upon verifying that the one or more ZKPs are correct, storing the cyphertext to a blockchain based on performing a consensus algorithm;

receiving a first message from the first computing device associated with the at least a first guarantor, the first message including a request to cancel the guarantee;

storing the request to cancel the guarantee in the blockchain;

sending a second message to a second computing device associated with the beneficiary or a representative of the beneficiary, wherein the second message includes the request to cancel the guarantee;

receiving a third message from the second computing device associated with the beneficiary or the representative of the beneficiary, wherein the third message includes a confirmation that the beneficiary accepts cancellation of the guarantee, and wherein the third message is relayed from the second computing device via a second blockchain network different from the first blockchain network; and

updating a status of the guarantee stored in the blockchain to indicate that the guarantee has been canceled.

2.The method of claim 1, wherein the guarantee is in a form of a standby letter of credit (SBLC).

3.The method of claim 2, wherein the guarantee specifies that the at least a first guarantor shall pay the beneficiary a predetermined amount when the one or more predetermined conditions of executing the guarantee are met.

4.The method of any previous claim, wherein the first guarantor is an offshore bank that serves an applicant of the guarantee, and the predetermined amount is paid to the beneficiary through an onshore bank that serves the beneficiary when the one or more predetermined conditions are met.

5.The method of claim 4, wherein the digital document further includes information that specifies an identity of the onshore bank.

6.The method of any preceding claim, wherein the one or more predetermined conditions include one or more of default conditions, amendment conditions, cancelation conditions, effective date, and expiration date.

7.The method of any previous claim, wherein the one or more values comprise a plurality of values associated with the guarantee and wherein the one or more ZKPs comprise a plurality of ZKPs generated by separately encrypting the plurality of values using homomorphic encryption, and

verifying that the one or more ZKPs are correct, comprises:

performing computation using the separately encrypted plurality of values associated with the guarantee.

8.The method of any previous claim, wherein the one or more ZKPs includes one or more of a range proof and a zero test.

9.The method of any previous claim, wherein an encryption key for encrypting the digital document is derived based on a linear secret sharing scheme.

10.The method of claim 1, wherein the guarantee is made by the first guarantor and a second guarantor to the beneficiary, the guarantee is in the form of a standby letter of credit (SBLC), and the guarantee specifies that the first guarantor and the second guarantor shall pay the beneficiary a predetermined amount when the one or more predetermined conditions of executing the guarantee are met.

11.The method of any previous claim, wherein the consensus algorithm is based on one of proof of work (PoW), proof of stake (PoS), and practical Byzantine fault tolerance (PBFT).

12. A system for processing blockchain-based guarantee information, comprising:

one or more processors; and

one or more computer-readable memories coupled to the one or more processors and having instructions stored thereon that are executable by the one or more processors to perform the method of any of claims 1 to 11.

13. An apparatus for processing blockchain-based guarantee information, the apparatus comprising a plurality of modules for performing the method of any of claims 1 to 11.