

CLAIMS

1. A computer system for securely releasing time-sensitive information comprising:
 a transceiver configured to communicate with a distributed blockchain computing system that includes multiple computing nodes, each computing node storing a copy, or a portion thereof, of the blockchain of the distributed blockchain computing system;

a computer storage system configured to store:

a plurality of digital cryptographic data structures that each include at least a corresponding private key, wherein a first one of the plurality of digital cryptographic data structures is associated with a submitter user that submits documents to be released, wherein a second one of the plurality of digital cryptographic data structures is associated with an approver user that approves the release of documents, wherein each corresponding private key is associated with a public identifier;

a processing system that includes at least one hardware processor, the processing system configured to:

receive a document from a first computer system that is associated with the submitter user;

generate a first blockchain transaction based on the received document and the digital cryptographic data structure that is associated with the submitter user;

submit the first blockchain transaction to the blockchain for incorporation into the blockchain;

generate a second blockchain transaction, wherein the second blockchain transaction includes the document and is to a blockchain identifier that is associated with the second digital cryptographic data structure of the approver user;

submit the second blockchain transaction to the blockchain;

receive, from a computer system associated with the approver user, an approval command for the document that is included in the second blockchain transaction; and

responsive to the approval command, generate and submit, to the blockchain, a third blockchain transaction that includes the document, wherein the third blockchain transaction is linked, directly or indirectly, to the first and second

blockchain transactions, wherein the third blockchain transaction includes a programmatic locking script with a timer condition that is set to expire at a defined time, wherein a plurality of intended recipients cannot access the document included in the third blockchain transaction until expiration of the timer condition.

2. The computer system of claim 1, wherein:

a third one of the plurality of digital cryptographic data structures is associated with at least one editor user that edits documents to be released,

the processing system is further configured to:

when a blockchain transaction for the digital document is associated with the digital cryptographic data structure of the editor user, receive, from a computer system associated with the editor user, edits of the document;

generate a fourth blockchain transaction based on the edits and/or an edited version of the document; and

submit the fourth blockchain transaction to the blockchain for incorporation into the blockchain, wherein the fourth blockchain transaction is linked to, directly or indirectly, the first, second, and third blockchain transactions.

3. The computer system of claim 2, wherein the fourth blockchain transaction is assigned to a blockchain identifier associated with the digital cryptographic data structure of a second editor user,

wherein the processing system is further configured to generate a fifth blockchain transaction based on edits to the document received from the second editor user and submit the fifth blockchain transaction to the blockchain, wherein the fifth blockchain transaction is linked to, directly or indirectly, the first, second, third, and fourth blockchain transactions.

4. The computer system of claim 1, wherein the processing system is further configured to:

when a blockchain transaction is associated with the digital cryptographic data structure of the approver user, receive, from a computer system associated with the approver user, a reject command for the document.

5. The computer system of claim 4, wherein the processing system is further configured to:

in response to reception of the rejection command, generate and submit a cancel blockchain transaction to the blockchain, wherein the cancel blockchain transaction is to a blockchain address that is not associated with any of the plurality of intended recipients.

6. The computer system of claim 5, wherein the blockchain address is an address associated with an editor user.

7. The computer system of claim 5, wherein the blockchain address is not associated with any submitter, editor, or approver user of the computer system for securely releasing time-sensitive information.

8. The computer system of claim 1, wherein the approver user is multiple different approver users that must approve the document prior to the document being made available to all of the plurality of intended recipients.

9. The computer system of claim 1, wherein the document that is released to the plurality of intended recipients includes a version of the document that has been further edited and/or converted from the document received from the first computer system.

10. A method for securely releasing time-sensitive information using a computer system that includes a transceiver configured to communicate with a distributed blockchain computing system that includes multiple computing nodes, each computing node storing a copy, or a portion thereof, of the blockchain, the method comprising:

accessing a plurality of digital cryptographic data structures that each include at least a corresponding private key, wherein a first one of the plurality of digital cryptographic data structures is associated with a submitter user that submits documents to be released, wherein a second one of the plurality of digital cryptographic data structures is associated with an approver user that approves the release of documents, wherein each corresponding private key is associated with a public identifier;

receiving a document from a first computer system that is associated with the submitter user;

generating a first blockchain transaction based on the received document and the digital cryptographic data structure that is associated with the submitter user;

submitting the first blockchain transaction to the blockchain for incorporation into the blockchain;

generating a second blockchain transaction, wherein the second blockchain transaction includes the document and is to a blockchain identifier that is associated with the digital cryptographic data structure of the approver user;

submitting the second blockchain transaction to the blockchain;

receiving, from a computer system associated with the approver user, an approval command for the document that is included with the second blockchain transaction; and

responsive to the approval command, generating and submitting, to the blockchain, a third blockchain transaction that includes the document being made available, on the blockchain, to a plurality of intended recipients, wherein the third blockchain transaction is linked, directly or indirectly, to the first and second blockchain transactions,

wherein the third blockchain transaction includes a programmatic locking script that locks access to the document until a scheduled time of the programmatic locking script has been satisfied, wherein upon satisfaction of the scheduled time, the document of the third blockchain transaction is accessible by the plurality of intended recipients.

11. The method of claim 10, wherein a third one of the plurality of digital cryptographic data structures is associated with at least one editor user that edits documents to be released, the method further comprising:

receiving, from a computer system associated with the editor user, edits of the document;

generating a fourth blockchain transaction based on the edits and/or an edited version of the document; and

submitting the fourth blockchain transaction to the blockchain for incorporation into the blockchain, wherein the fourth blockchain transaction is linked to, directly or indirectly, the first, second, and third blockchain transactions.

12. The method of claim 11, wherein the fourth blockchain transaction is assigned to a blockchain identifier associated with the digital cryptographic data structure of a second editor user, the method further comprising:

generating a fifth blockchain transaction based on edits to the document received from the second editor user and submit the fifth blockchain transaction to the blockchain, wherein the fifth blockchain transaction is linked to, directly or indirectly, the first, second, third, and fourth blockchain transactions.

13. The method of claim 10, further comprising when a blockchain transaction is associated with the digital cryptographic data structure of the approver user, receiving, from a computer system associated with the approver user, a reject command for the document.

14. The method of claim 13, further comprising:

in response to reception of the rejection command, generating and submitting a cancel blockchain transaction to the blockchain, wherein the cancel blockchain transaction is to a blockchain address that is not associated with any of the plurality of intended recipients.

15. A non-transitory computer readable storage medium storing instructions for use with a computer system that includes a transceiver and a storage system, the transceiver configured to communicate with a distributed blockchain computing system that includes multiple computing nodes, each computing node storing a copy, or a portion thereof, of the blockchain of the distributed blockchain computing system, the storage system configured to store a plurality of digital cryptographic data structures that each include at least a corresponding private key, wherein a first one of the plurality of digital cryptographic data structures associated with a submitter user that submits documents to be released, wherein a second one of the plurality of digital cryptographic data structures associated with an approver user that approves the release of documents, wherein each corresponding private key is associated with a public identifier the stored instructions comprising instructions that cause the computer system to:

receive a document from a first computer system that is associated with the submitter user;

generate a first blockchain transaction based on the received document and the digital cryptographic data structure that is associated with the submitter user;

submit the first blockchain transaction to the blockchain for incorporation into the blockchain;

generate a second blockchain transaction, wherein the second blockchain transaction includes the document and is to a blockchain identifier that is associated with the digital cryptographic data structure of the approver user;

submit the second blockchain transaction to the blockchain;

receive, from a computer system associated with the approver user, an approval command for the document that is included with the second blockchain transaction; and

responsive to the approval command, generate and submit, to the blockchain, a third blockchain transaction that includes the document, wherein third blockchain transaction is linked, directly or indirectly, to the first and second blockchain transactions,

wherein the third blockchain transaction includes a programmatic locking script with a timer condition that is set to expire at a defined time, wherein a plurality of intended recipients cannot access the document included in the third blockchain transaction until expiration of the timer condition.

16. The non-transitory computer readable storage medium of claim 15, wherein a third one of the plurality of digital cryptographic data structures is associated with at least one editor user that edits documents to be released, and the stored instructions comprise further instructions that cause the computer system to:

when a blockchain transaction for the digital document is associated with the digital cryptographic data structure of the editor user, receive, from a computer system associated with the editor user, edits of the document;

generate a fourth blockchain transaction based on the edits and/or an edited version of the document; and

submit the fourth blockchain transaction to the blockchain for incorporation into the blockchain, wherein the fourth blockchain transaction is linked to, directly or indirectly, the first, second, and third blockchain transactions.

17. The non-transitory computer readable storage medium of claim 16, wherein the fourth blockchain transaction is assigned to a blockchain identifier associated with the digital cryptographic data structure of a second editor user, and the stored instructions comprise further instructions that cause the computer system to:

generate a fifth blockchain transaction based on edits to the document received from the second editor user and submit the fifth blockchain transaction to the blockchain, wherein the fifth blockchain transaction is linked to, directly or indirectly, the first, second, third, and fourth blockchain transactions.

18. The non-transitory computer readable storage medium of claim 15, wherein the approver user is multiple different approver users that must approve the document prior to the document being made available to all of the plurality of intended recipients.