computing systems necessary for the processing of guaranteed checks. In addition, the use of checks is often cumbersome, if not impossible, for Internet-based and other types of e-commerce transactions. Even further, many consumers often find the use of checks to be inconvenient and may prefer to use other payment instruments, such as payment cards.

Thus, there is a need for a technical solution where a payment transaction can be guaranteed in a manner that is readily verifiable by an acquiring financial institution and/or merchant, and where the guarantee can be used in conjunction with multiple types of payment instruments as well as multiple transaction types, including e-commerce transactions. By enabling the use of the guarantee with multiple payment instruments and transaction types, the guarantee may be used in more situations with a higher convenience to both consumers and merchants, which may result in merchants receiving instantaneous, guaranteed payment, while maintaining a high level of consumer convenience.

SUMMARY

The present disclosure provides a description of systems and methods for processing a guaranteed electronic transaction.

In an aspect, the present disclosure refers to a method for processing a guaranteed electronic transaction, comprising: storing, in an account database of a processing server, a plurality of account profiles, wherein each account profile includes a structured data set related to a transaction account including at least a transaction account number and an account balance; receiving, by a receiving device of the processing server, a transaction message related to an electronic transaction via a payment network, wherein the transaction message originates from an acquiring financial institution and is formatted based on one or more standards, where the transaction message includes a plurality of data elements including at least a first data element configured to store a primary account number, a second data element configured to store a transaction amount, a third data element configured to store payment guarantee data, and one or more additional data elements configured to store additional transaction data; executing, by a querying module of the processing server, a first query on the account database to identify a specific account profile where the

included transaction account number corresponds to the primary account number stored in the first data element included in the received transaction message; executing, by the querying module of the processing server, a second query on the account database to deduct at least the transaction amount stored in the second data element included in the received transaction message from the account balance included in the identified specific account profile; generating, by a generation module of the processing server, a record of payment guarantee, wherein the record of payment guarantee includes at least the transaction amount and data associated with the payment guarantee data stored in the third data element included in the received transaction message; generating, by the generation module of the processing server, a return message, wherein the return message is formatted based on the one or more standards and includes a plurality of data elements including at least a first data element configured to store a response code indicative of approval of the related electronic transaction and a second data element configured to store data associated with the generated record of payment guarantee; electronically transmitting, by a transmitting device of the processing server, the generated record of payment guarantee to a computing system via a communication network; and electronically transmitting, by the transmitting device of the processing server, the generated return message to the acquiring financial institution via the payment network; wherein the payment guarantee data stored in the third data element included in the received transaction message includes at least a blockchain network identifier and (i) a public key or (ii) a destination address, the record of payment guarantee is a blockchain transaction for payment of the transaction amount stored in the second data element included in the received transaction message to (i) the destination address or (ii) a destination address associated with the public key, and the computing system is a node in a blockchain network corresponding to the blockchain network identifier.

According to another aspect, the present disclosure refers to a system for processing a guaranteed electronic transaction, comprising: an account database of a processing server configured to store a plurality of account profiles, wherein each account profile includes a structured data set related to a transaction account including at least a transaction account number and an account balance; a receiving device of the processing server configured to receive a transaction message related to an electronic transaction via a payment network, wherein the transaction message originates from an acquiring financial institution and is formatted based on one or

more standards, where the transaction message includes a plurality of data elements including at least a first data element configured to store a primary account number, a second data element configured to store a transaction amount, a third data element configured to store payment guarantee data, and one or more additional data elements configured to store additional transaction data; a querying module of the processing server configured to execute a first query on the account database to identify a specific account profile where the included transaction account number corresponds to the primary account number stored in the first data element included in the received transaction message, and a second query on the account database to deduct at least the transaction amount stored in the second data element included in the received transaction message from the account balance included in the identified specific account profile; a generation module of the processing server configured to generate a record of payment guarantee, wherein the record of payment guarantee includes at least the transaction amount and data associated with the payment guarantee data stored in the third data element included in the received transaction message, and a return message, wherein the return message is formatted based on the one or more standards and includes a plurality of data elements including at least a first data element configured to store a response code indicative of approval of the related electronic transaction and a second data element configured to store data associated with the generated record of payment guarantee; and a transmitting device of the processing server configured to electronically transmit the generated record of payment guarantee to a computing system via a communication network, and the generated return message to the acquiring financial institution via the payment network; wherein the payment guarantee data stored in the third data element included in the received transaction message includes at least a blockchain network identifier and (i) a public key or (ii) a destination address, the record of payment guarantee is a blockchain transaction for payment of the transaction amount stored in the second data element included in the received transaction message to (i) the destination address or (ii) a destination address associated with the public key, and the computing system is a node in a blockchain network corresponding to the blockchain network identifier.

In an example, a method for processing a guaranteed electronic transaction, includes: storing, in an account database of a processing server, a plurality of account profiles, wherein each account profile includes a structured data

set related to a transaction account including at least a transaction account number and an account balance; receiving, by a receiving device of the processing server, a transaction message related to an electronic transaction via a payment network, wherein the transaction message originates from an acquiring financial institution and is formatted based on one or more standards, where the transaction message includes a plurality of data elements including at least a first data element configured to store a primary account number, a second data element configured to store a transaction amount, a third data element configured to store payment guarantee data, and one or more additional data elements configured to store additional transaction data; executing, by a querying module of the processing server, a first query on the account database to identify a specific account profile where the included transaction account number corresponds to the primary account number stored in the first data element included in the received

transaction message; executing, by the querying module of the processing server, a second query on the account database to deduct at least the transaction amount stored in the second data element included in the received transaction message from the account balance included in the identified specific account profile; generating, by a generation module of the processing server, a record of payment guarantee, wherein the record of payment guarantee includes at least the transaction amount and data associated with the payment guarantee data stored in the third data element included in the received transaction message; generating, by the generation module of the processing server, a return message, wherein the return message is formatted based on the one or more standards and includes a plurality of data elements including at least a first data element configured to store a response code indicative of approval of the related electronic transaction and a second data element configured to store data associated with the generated record of payment guarantee; electronically transmitting, by a transmitting device of the processing server, the generated record of payment guarantee to a computing system via a communication network; and electronically transmitting, by the transmitting device of the processing server, the generated return message to the acquiring financial institution via the payment network.

In another example, a system for processing a guaranteed electronic transaction includes: an account database of a processing server configured to store a plurality of account profiles, wherein each account profile includes a structured data set related to a transaction account including at least a transaction account number and an account balance; a receiving device of the processing server configured to receive a transaction message related to an electronic transaction via a payment network, wherein the transaction message originates from an acquiring financial institution and is formatted based on one or more standards, where the transaction message includes a plurality of data elements including at least a first data element configured to store a primary account number, a second data element configured to store a transaction amount, a third data element configured to store payment guarantee data, and one or more additional data elements configured to store additional transaction data; a querying module of the processing server configured to execute a first query on the account database to identify a specific account profile where the included transaction account number corresponds to the primary account number stored in the first data element included in the received transaction message, and a second query on the

WHAT IS CLAIMED IS:

1. A method for processing a guaranteed electronic transaction, comprising:

storing, in an account database of a processing server, a plurality of account profiles, wherein each account profile includes a structured data set related to a transaction account including at least a transaction account number and an account balance;

receiving, by a receiving device of the processing server, a transaction message related to an electronic transaction via a payment network, wherein the transaction message originates from an acquiring financial institution and is formatted based on one or more standards, where the transaction message includes a plurality of data elements including at least a first data element configured to store a primary account number, a second data element configured to store a transaction amount, a third data element configured to store payment guarantee data, and one or more additional data elements configured to store additional transaction data;

executing, by a querying module of the processing server, a first query on the account database to identify a specific account profile where the included transaction account number corresponds to the primary account number stored in the first data element included in the received transaction message;

executing, by the querying module of the processing server, a second query on the account database to deduct at least the transaction amount stored in the second data element included in the received transaction message from the account balance included in the identified specific account profile;

generating, by a generation module of the processing server, a record of payment guarantee, wherein the record of payment guarantee includes at least the transaction amount and data associated with the payment guarantee data stored in the third data element included in the received transaction message;

generating, by the generation module of the processing server, a return message, wherein the return message is formatted based on the one or more standards and includes a plurality of data elements including at least a first data element configured to store a response code indicative of approval of the related electronic transaction and a second data element configured to store data associated with the generated record of payment guarantee;

electronically transmitting, by a transmitting device of the processing server, the generated record of payment guarantee to a computing system via a communication network; and

electronically transmitting, by the transmitting device of the processing server, the generated return message to the acquiring financial institution via the payment network; wherein

the payment guarantee data stored in the third data element included in the received transaction message includes at least a blockchain network identifier and (i) a public key or (ii) a destination address,

the record of payment guarantee is a blockchain transaction for payment of the transaction amount stored in the second data element included in the received transaction message to (i) the destination address or (ii) a destination address associated with the public key, and

the computing system is a node in a blockchain network corresponding to the blockchain network identifier.

2. The method of claim 1, further comprising:

generating, by the generation module of the processing server, the destination address associated with the public key using the public key.

3. The method of claim 1, further comprising:

generating, by the generation module of the processing server, a hash value by applying one or more hashing algorithms to the generated record of payment guarantee, wherein

the data associated with the generated record of payment guarantee stored in the second data element included in the return message includes the generated hash value.

4. The method of claim 1, further comprising:

signing, by a signing module of the processing server, the blockchain transaction prior to transmission to the computing system.

5. The method of claim 1, wherein the second query is executed by the querying module prior to receipt of the transaction message by the receiving device.

6. The method of claim 5, further comprising:
validating, by a validation module of the processing server, an amount deducted from the account balance included in the identified specific account profile via the second query as greater than the transaction amount stored in the second data element included in the received transaction message.

7. The method of claim 1, wherein the received transaction message further includes a message type indicator indicative of an authorization request.

8. The method of claim 1, wherein the generated return message includes a message type indicator indicative of an authorization response.

9. The method of claim 1, wherein the return message is generated by the generation module by modifying the received transaction message.

10. A system for processing a guaranteed electronic transaction, comprising:
an account database of a processing server configured to store a plurality of account profiles, wherein each account profile includes a structured data set related to a transaction account including at least a transaction account number and an account balance;
a receiving device of the processing server configured to receive a transaction message related to an electronic transaction via a payment network, wherein the transaction message originates from an acquiring financial institution and is formatted based on one or more standards, where the transaction message includes a plurality of data elements including at least a first data element configured to store a primary account number, a second data element configured to store a transaction amount, a third data element configured to store payment guarantee data, and one or more additional data elements configured to store additional transaction data;
a querying module of the processing server configured to execute

a first query on the account database to identify a specific account profile where the included transaction account number corresponds to the primary account number stored in the first data element included in the received transaction message, and

a second query on the account database to deduct at least the transaction amount stored in the second data element included in the received transaction message from the account balance included in the identified specific account profile;

a generation module of the processing server configured to generate

a record of payment guarantee, wherein the record of payment guarantee includes at least the transaction amount and data associated with the payment guarantee data stored in the third data element included in the received transaction message, and

a return message, wherein the return message is formatted based on the one or more standards and includes a plurality of data elements including at least a first data element configured to store a response code indicative of approval of the related electronic transaction and a second data element configured to store data associated with the generated record of payment guarantee; and

a transmitting device of the processing server configured to electronically transmit

the generated record of payment guarantee to a computing system via a communication network, and

the generated return message to the acquiring financial institution via the payment network; wherein

the payment guarantee data stored in the third data element included in the received transaction message includes at least a blockchain network identifier and (i) a public key or (ii) a destination address,

the record of payment guarantee is a blockchain transaction for payment of the transaction amount stored in the second data element included in the received transaction message to (i) the destination address or (ii) a destination address associated with the public key, and

the computing system is a node in a blockchain network corresponding to the blockchain network identifier.

11. The system of claim 10, wherein the generation module of the processing server is further configured to generate the destination address associated with the public key using the public key.

12. The system of claim 10, wherein
the generation module of the processing server is further configured to generate a hash value by applying one or more hashing algorithms to the generated record of payment guarantee, and
the data associated with the generated record of payment guarantee stored in the second data element included in the return message includes the generated hash value.

13. The system of claim 10, further comprising:
a signing module of the processing server configured to sign the blockchain transaction prior to transmission to the computing system.

14. The system of claim 10, wherein the second query is executed by the querying module prior to receipt of the transaction message by the receiving device.

15. The system of claim 14, further comprising:
a validation module of the processing server configured to validate an amount deducted from the account balance included in the identified specific account profile via the second query as greater than the transaction amount stored in the second data element included in the received transaction message.