SUMMARY

An aspect provides a device for processing electronic transaction request messages from financial institutions, each transaction request message instructing payment of funds from one financial account in a first financial institution to another financial account in a second financial institution, the device comprising: a plurality of switches located at a location, each switch being operable to receive a transaction request message from a financial institution; and a clustered database at the location connected to the plurality of switches, the clustered database comprising a plurality of synchronised storage units each configured to record an identical respective copy of a transaction state of a transaction associated with the transaction request message, wherein, following an update of the transaction state indicating that the transaction is complete, the clustered database is configured to generate a transaction summary record on the basis of the received transaction request message that allows settlement of the funds between the financial accounts defined by the received transaction request message.

Advantageously, this arrangement means that data of the transaction summary records is still accessible when one of the synchronised databases becomes non-operational (due to a fault or scheduled maintenance or the like). An arrangement for processing electronic transactions with greater resilience is therefore achieved.

In an embodiment, each transaction request message includes an identifier which uniquely identifies the transaction with which the transaction request message is associated and the device comprises processing circuitry which routes the transaction request message a particular switch based on the identifier.

In an embodiment, each transaction request message is signed by a digital signature, wherein the processing circuitry is operable to verify the signed transaction request message; and in the event that the signed transaction request message cannot be verified, the processing circuitry is operable to return the transaction request message to the financial institution.

In an embodiment, the processing circuitry is further operable to alert the financial institution that an unverifiable transaction request message was received at the device.

An embodiment provides a system comprising a plurality of the above-mentioned devices of the present invention, wherein the devices are distributed amongst a plurality of locations and each device is operable to undertake data communication with each of the other devices in the plurality.

An aspect provides a method for processing electronic transaction request messages from financial institutions, each transaction request message instructing payment of funds from one financial account in a first financial institution to another financial account in a second financial institution, the method comprising: receiving at one of a plurality of switches located at a location a transaction request message from a financial institution; recording, in each of a plurality of synchronised storage units of a clustered database at the location connected to the plurality of switches, an identical respective copy of a transaction state of a transaction associated with the transaction request message;

and generating, within the clustered database and following an update of the transaction state indicating that the transaction is completed,

, a transaction summary record on the basis of the received transaction request message that allows settlement of the funds between the financial accounts defined by the received transaction request message.

In an embodiment, each transaction request message includes an identifier which uniquely identifies the transaction with which the transaction request message is associated and the method comprises routing the transaction request message to a particular switch based on the identifier.

In an embodiment, each transaction request is signed by a digital signature, wherein the method further comprises verifying the signed transaction request message; and in the event that the signed transaction request message cannot be verified, the method comprises returning the transaction request message to the financial institution.

In an embodiment, the method comprises alerting the financial institution that an unverifiable transaction request message was received.

The present invention provides a computer program product comprising a storage medium configured to store a computer program therein or thereon, the computer program containing computer readable instructions, which loaded onto a computer, configure the computer to perform the above-mentioned method of the present invention.

The foregoing paragraphs have been provided by way of general introduction, and are not intended to limit the scope of the following claims. The described embodiments, together with further advantages, will be best understood by reference to the following detailed description taken in conjunction with the accompanying Figures.

CLAIMS

1. A device for processing electronic transaction request messages from financial institutions, each transaction request message instructing payment of funds from one financial account in a first financial institution to another financial account in a second financial institution, the device comprising:

a plurality of switches located at a location, each switch being operable to receive a transaction request message from a financial institution; and

a clustered database at the location connected to the plurality of switches, the clustered database comprising a plurality of synchronised storage units each configured to record an identical respective copy of a transaction state of a transaction associated with the transaction request message, wherein, following an update of the transaction state indicating that the transaction is complete, the clustered database is configured to generate a transaction summary record on the basis of the received transaction request message that allows settlement of the funds between the financial accounts defined by the received transaction request message.

2. A device according to claim 1, wherein each transaction request message includes an identifier which uniquely identifies the transaction with which the transaction request message is associated and the device comprises processing circuitry which routes the transaction request message a particular switch based on the identifier.

3. A device according to claim 1 or claim 2, wherein each transaction request message is signed by a digital signature, wherein the device comprises processing circuitry operable to verify the signed transaction request message; and in the event that the signed transaction request message cannot be verified, the processing circuitry is operable to return the transaction request message to the financial institution.

4. A device according to claim 3, wherein the processing circuitry is further operable to alert the financial institution that an unverifiable transaction request message was received at the device.

5. A system comprising a plurality of devices according to any preceding claim, wherein the devices are distributed amongst a plurality of locations and each device is operable to undertake data communication with each of the other devices in the plurality.

6. A method for processing electronic transaction request messages from financial institutions, each transaction request message instructing payment of funds from one financial account in a first financial institution to another financial account in a second financial institution, the method comprising:

receiving at one of a plurality of switches located at a location a transaction request message from a financial institution; and

recording, in each of a plurality of synchronised storage units of a clustered database at the location connected to the plurality of switches, an identical respective copy of a transaction state of a transaction associated with the transaction request message;

generating, within the clustered database and following an update of the transaction state indicating that the transaction is completed, a transaction summary record on the basis of the received

transaction request message that allows settlement of the funds between the financial accounts defined by the received transaction request message.

7. A method according to claim 6 wherein each transaction request message includes an identifier which uniquely identifies the transaction with which the transaction request message is associated and the method comprises routing the transaction request message to a particular switch based on the identifier.

8. A method according to claim 6 or claim 7, wherein each transaction request is signed by a digital signature, wherein the method further comprises verifying the signed transaction request message; and in the event that the signed transaction request message cannot be verified, the method comprises returning the transaction request message to the financial institution.

9. A method according to claim 8, comprising alerting the financial institution that an unverifiable transaction request message was received.

10. A computer program product comprising a storage medium configured to store a computer program therein or thereon, the computer program containing computer readable instructions, which loaded onto a computer, configure the computer to perform a method according to any one of claims 6 to 9.