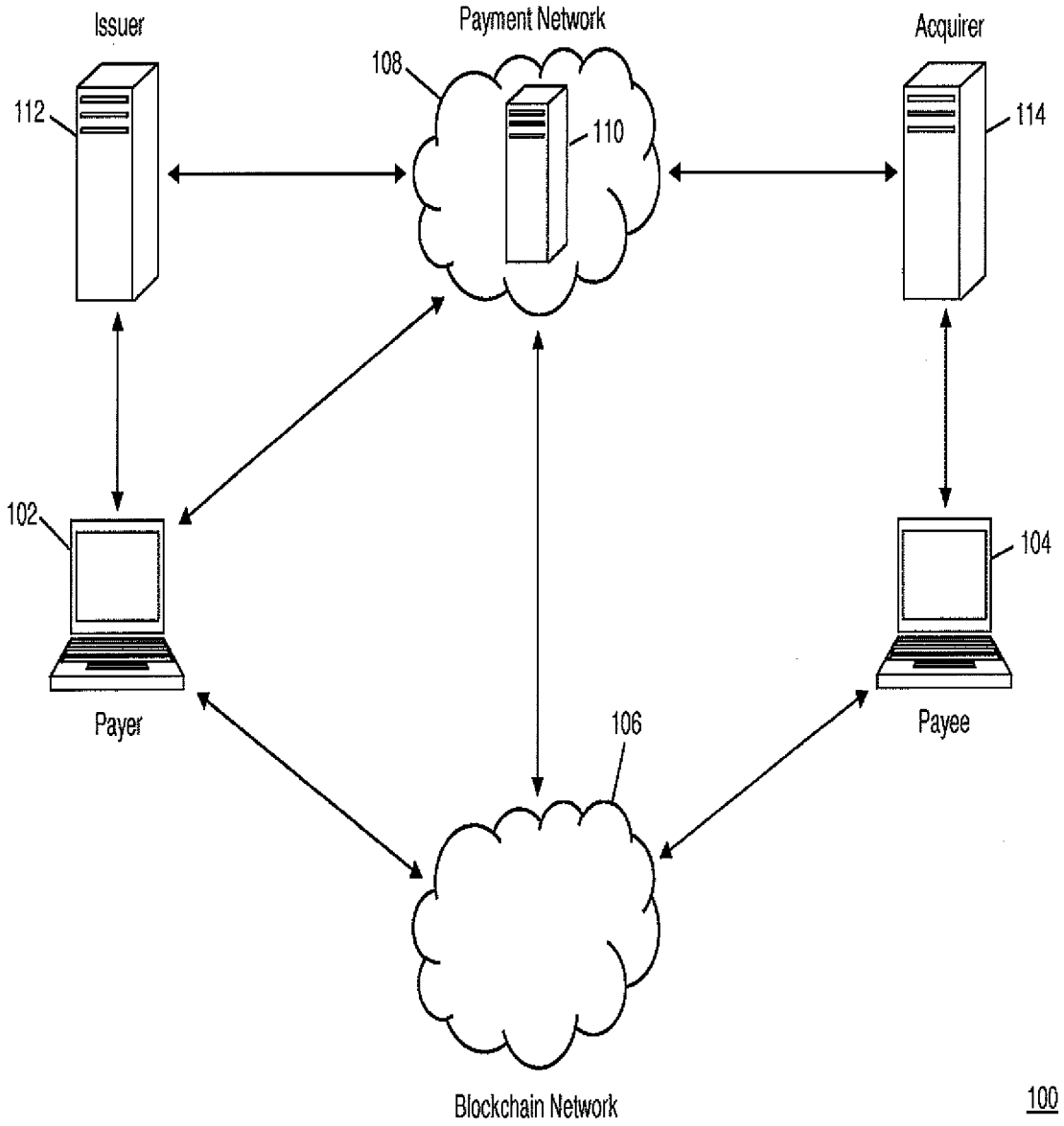

Issuer
Payment Network
Acquirer
108
112
110
114
102
104
Payer
106
Payee
Blockchain Network
100

FIG. 1

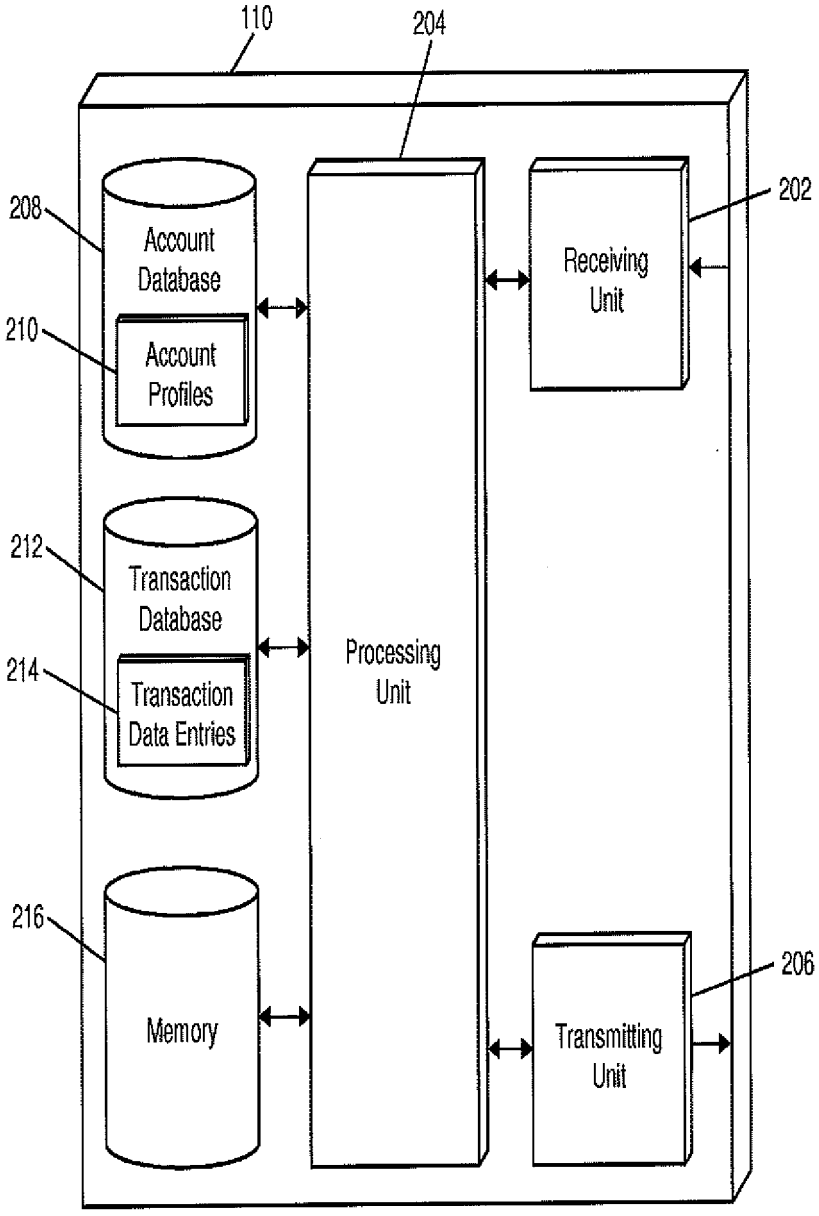

110
204
208
Account Database
210
Account Profiles
212
Transaction Database
214
Transaction Data Entries
216
Memory
Processing Unit
Receiving Unit
202
Transmitting Unit
206

FIG. 2

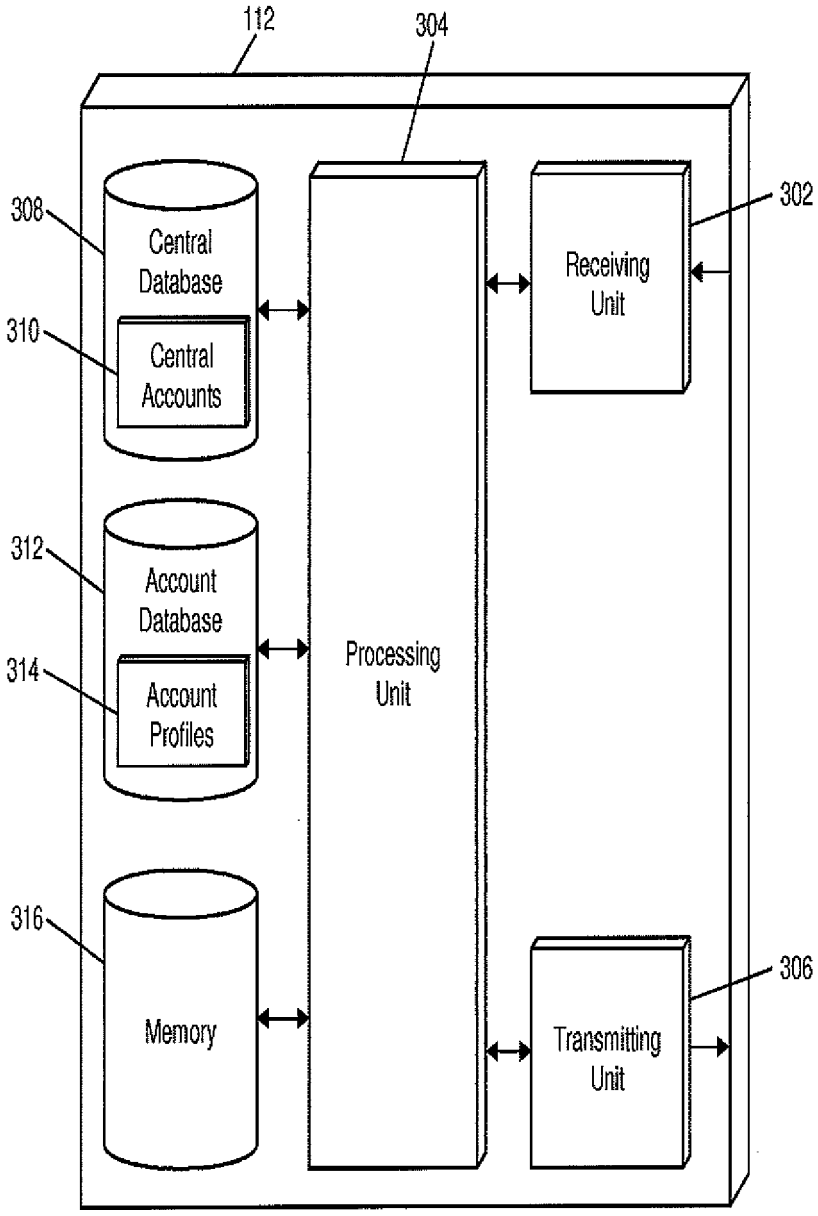

112
304
308
Central Database
310
Central Accounts
312
Account Database
314
Account Profiles
316
Memory
Processing Unit
Receiving Unit
302
Transmitting Unit
306

FIG. 3

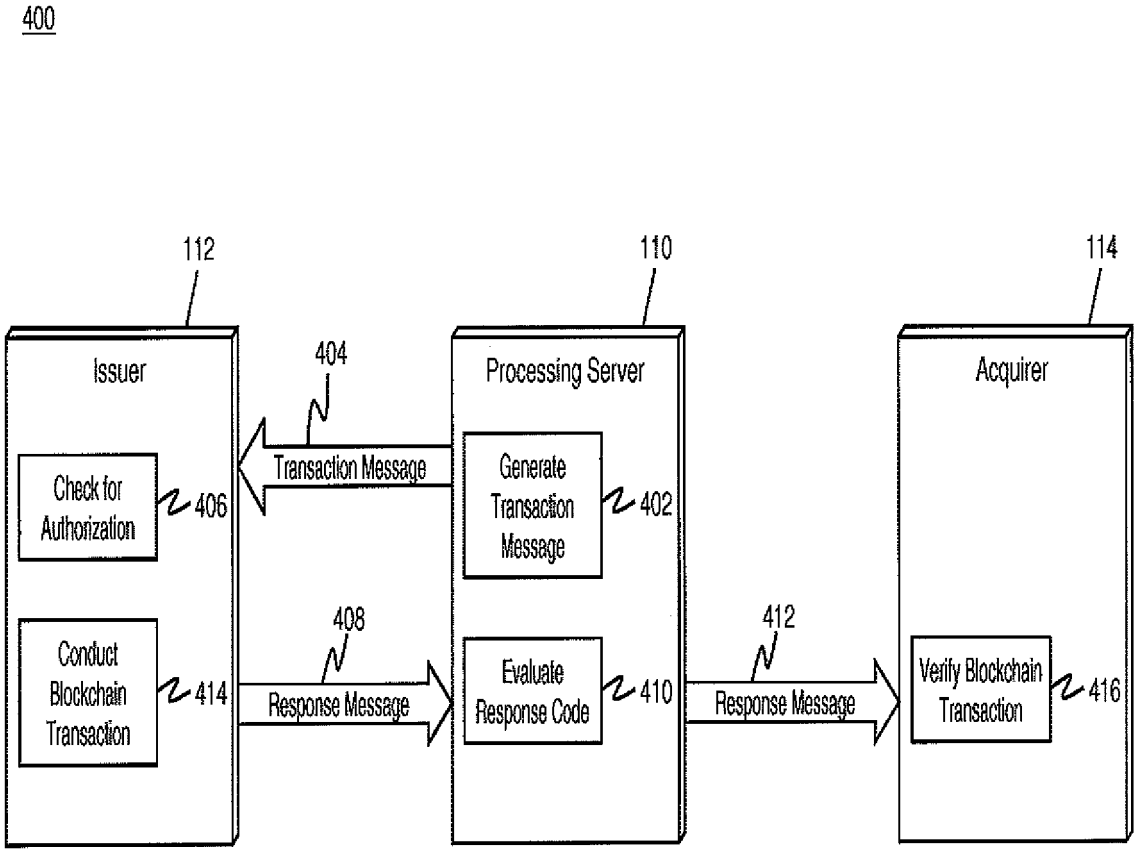

400
112
110
114
Issuer
Processing Server
Acquirer
404
Transaction Message
Check for Authorization
406
Generate Transaction Message
402
408
412
Conduct Blockchain Transaction
414
Response Message
Evaluate Response Code
410
Response Message
Verify Blockchain Transaction
416

FIG. 4

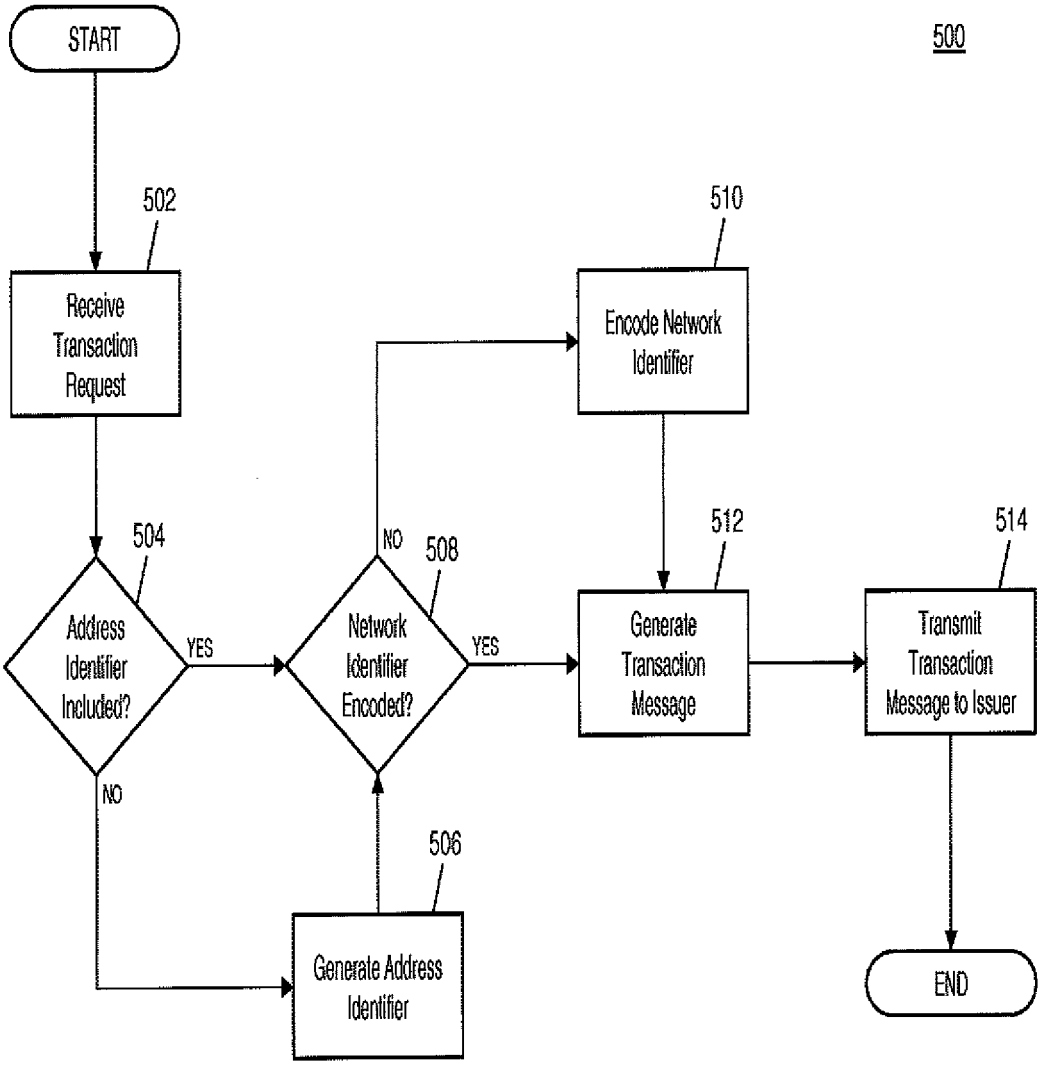

START
500
502
Receive Transaction Request
504
Address Identifier Included?
YES
NO
508
Network Identifier Encoded?
NO
YES
506
Generate Address Identifier
510
Encode Network Identifier
512
Generate Transaction Message
514
Transmit Transaction Message to Issuer
END

FIG. 5

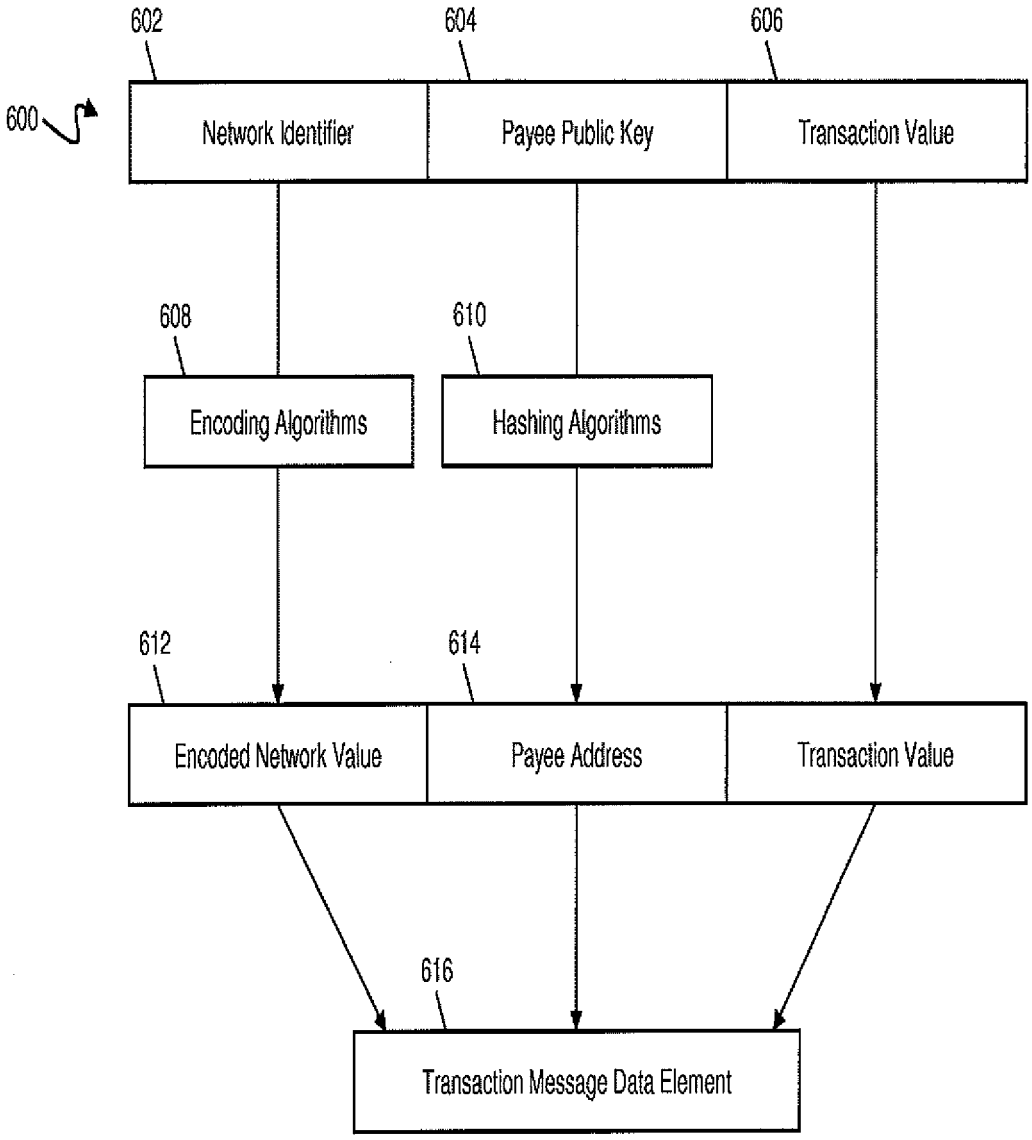

602
604
606
600
Network Identifier
Payee Public Key
Transaction Value
608
610
Encoding Algorithms
Hashing Algorithms
612
614
Encoded Network Value
Payee Address
Transaction Value
616
Transaction Message Data Element

FIG. 6

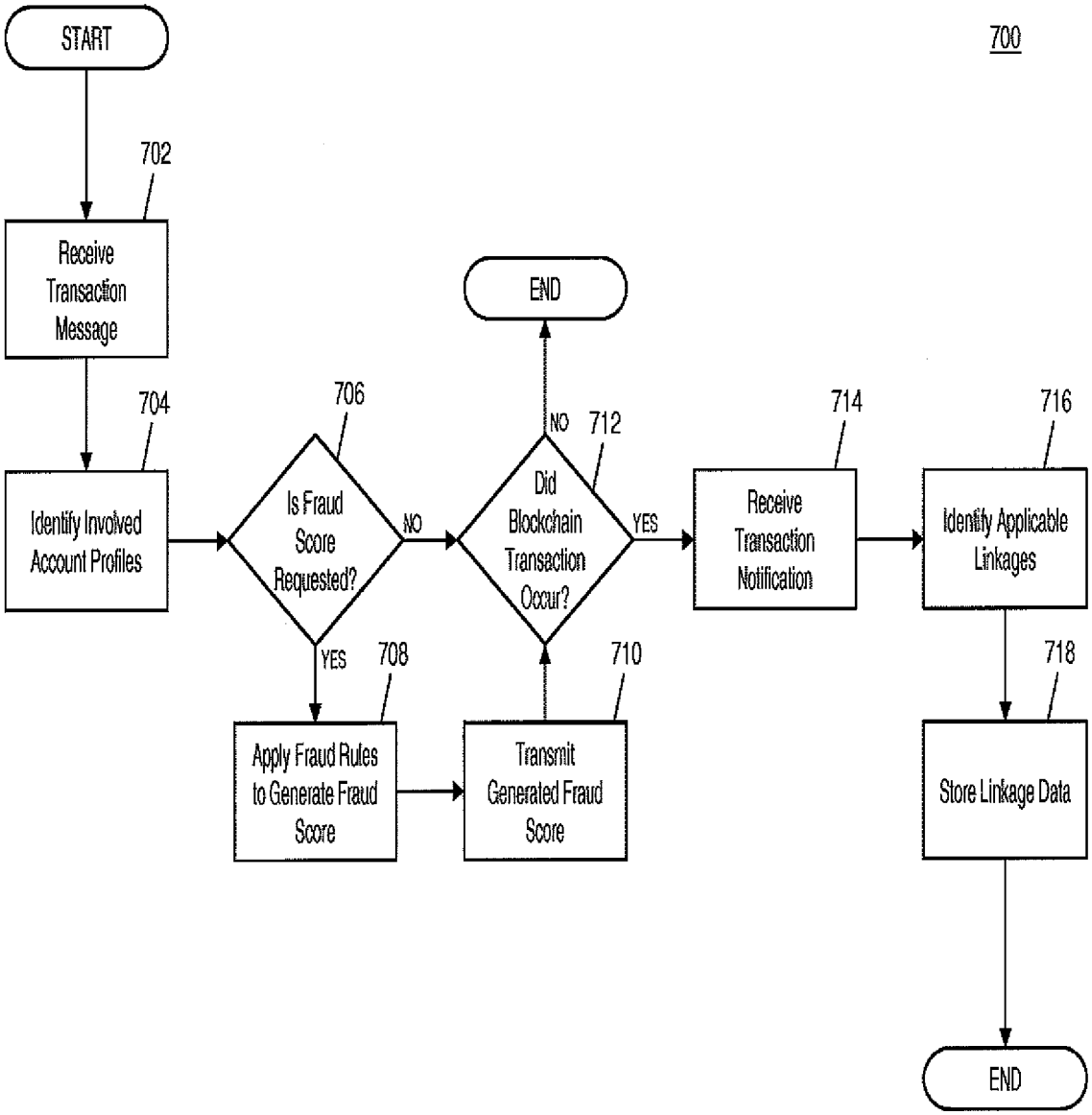

START
700
702
Receive Transaction Message
704
Identify Involved Account Profiles
706
Is Fraud Score Requested?
NO
YES
708
Apply Fraud Rules to Generate Fraud Score
710
Transmit Generated Fraud Score
712
Did Blockchain Transaction Occur?
NO
YES
END
714
Receive Transaction Notification
716
Identify Applicable Linkages
718
Store Linkage Data
END

FIG. 7

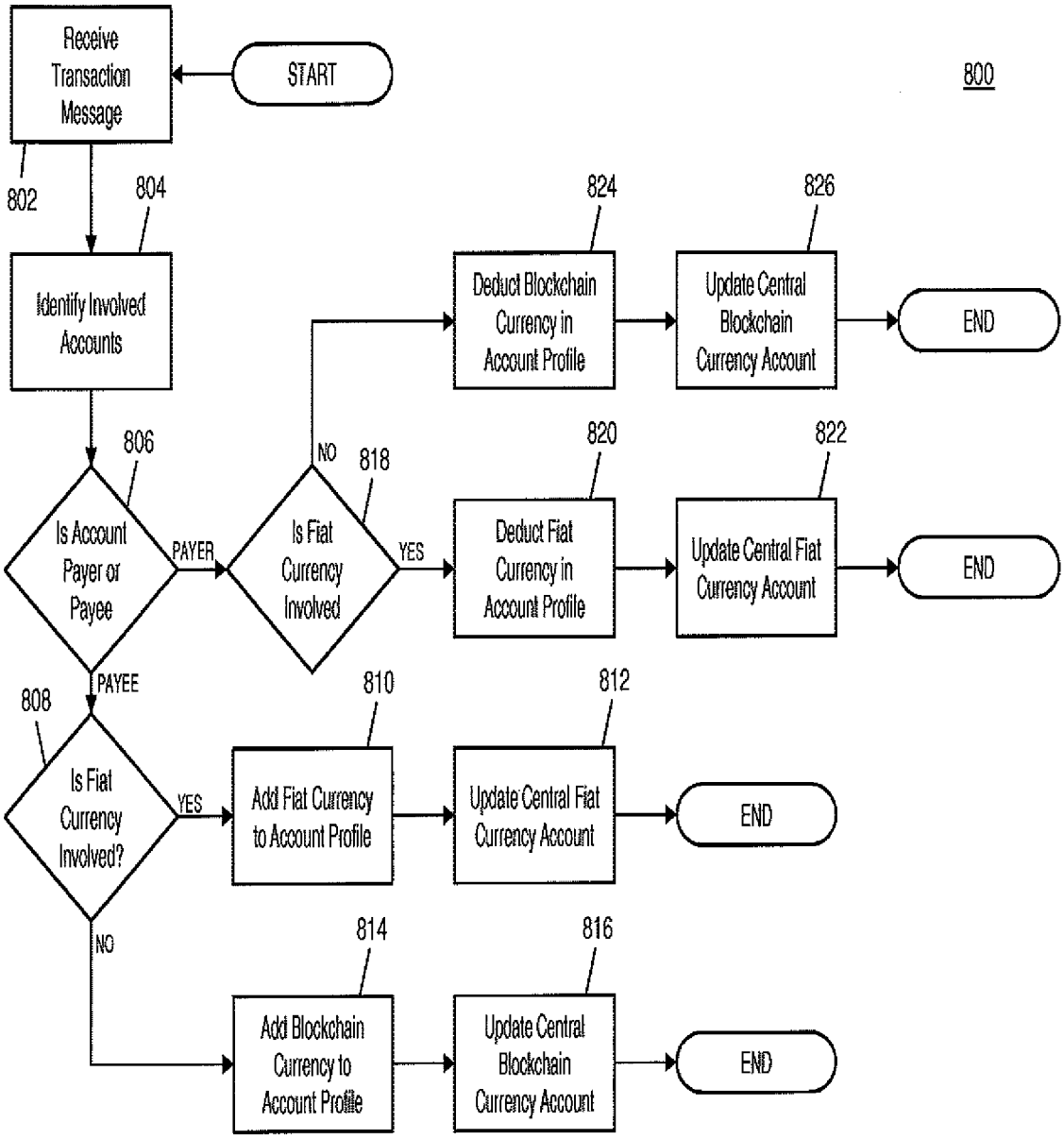

Receive Transaction Message
START
800
802
804
Identify Involved Accounts
824
Deduct Blockchain Currency in Account Profile
826
Update Central Blockchain Currency Account
END
806
Is Account Payer or Payee
PAYER
NO
818
Is Fiat Currency Involved
YES
820
Deduct Fiat Currency in Account Profile
822
Update Central Fiat Currency Account
END
PAYEE
808
Is Fiat Currency Involved?
YES
810
Add Fiat Currency to Account Profile
812
Update Central Fiat Currency Account
END
NO
814
Add Blockchain Currency to Account Profile
816
Update Central Blockchain Currency Account
END

FIG. 8

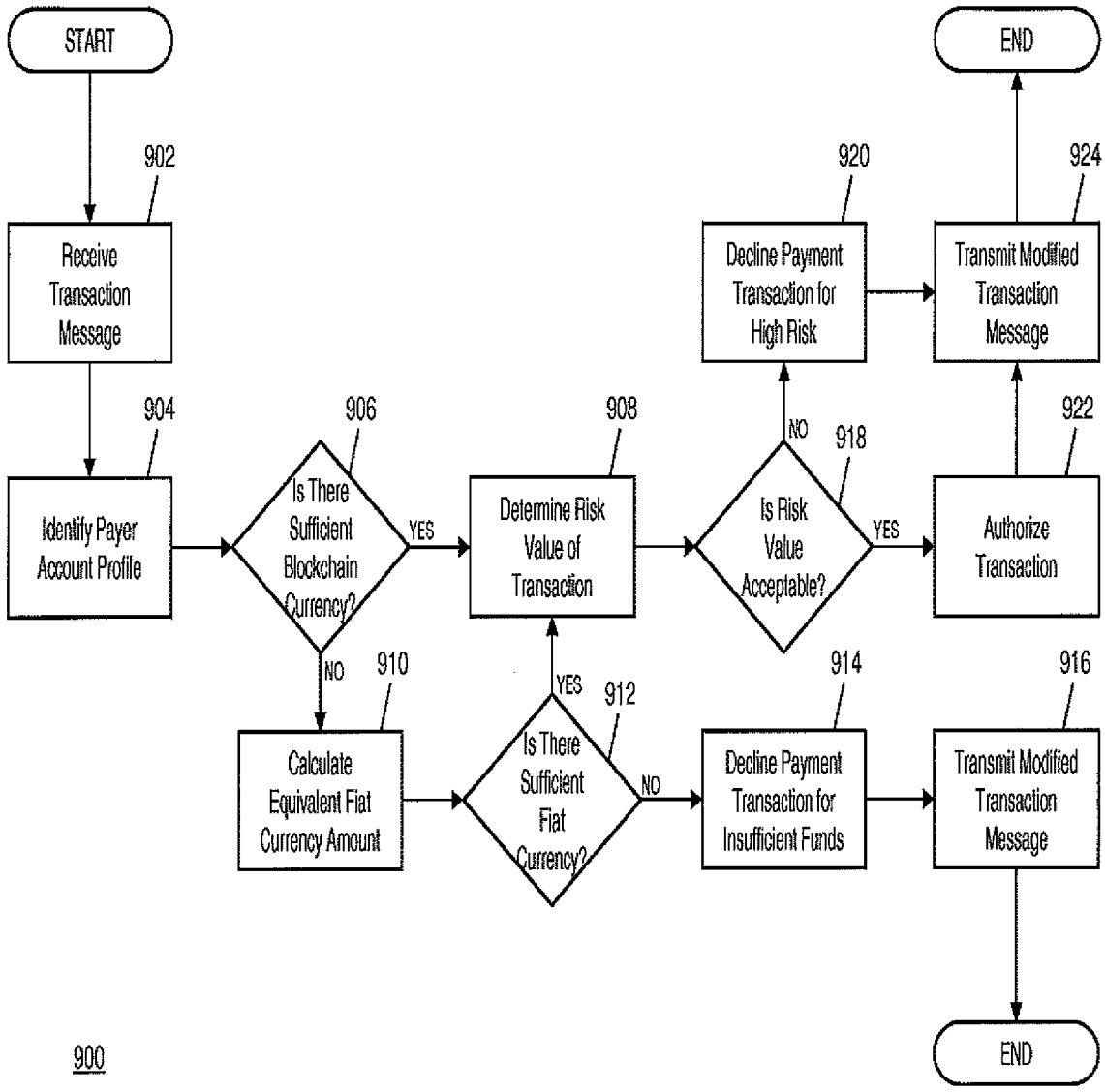

START
902
Receive Transaction Message
904
Identify Payer Account Profile
906
Is There Sufficient Blockchain Currency?
YES
NO
908
Determine Risk Value of Transaction
910
Calculate Equivalent Fiat Currency Amount
912
Is There Sufficient Fiat Currency?
YES
NO
914
Decline Payment Transaction for Insufficient Funds
916
Transmit Modified Transaction Message
END
918
Is Risk Value Acceptable?
NO
YES
920
Decline Payment Transaction for High Risk
922
Authorize Transaction
924
Transmit Modified Transaction Message
END
900

FIG. 9

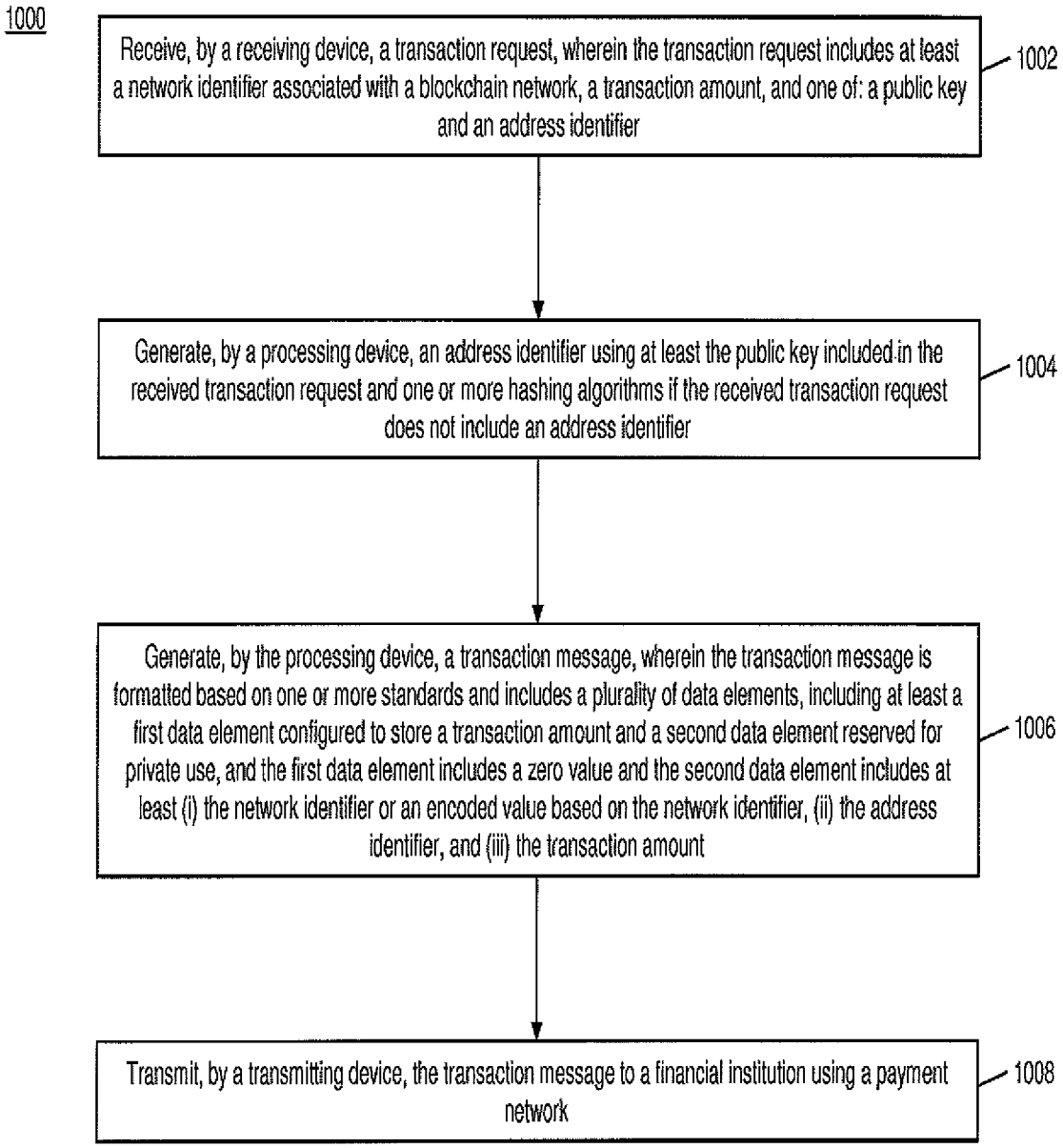

1000
Receive, by a receiving device, a transaction request, wherein the transaction request includes at least a network identifier associated with a blockchain network, a transaction amount, and one of: a public key and an address identifier
1002
Generate, by a processing device, an address identifier using at least the public key included in the received transaction request and one or more hashing algorithms if the received transaction request does not include an address identifier
1004
Generate, by the processing device, a transaction message, wherein the transaction message is formatted based on one or more standards and includes a plurality of data elements, including at least a first data element configured to store a transaction amount and a second data element reserved for private use, and the first data element includes a zero value and the second data element includes at least (i) the network identifier or an encoded value based on the network identifier, (ii) the address identifier, and (iii) the transaction amount
1006
Transmit, by a transmitting device, the transaction message to a financial institution using a payment network
1008

FIG. 10

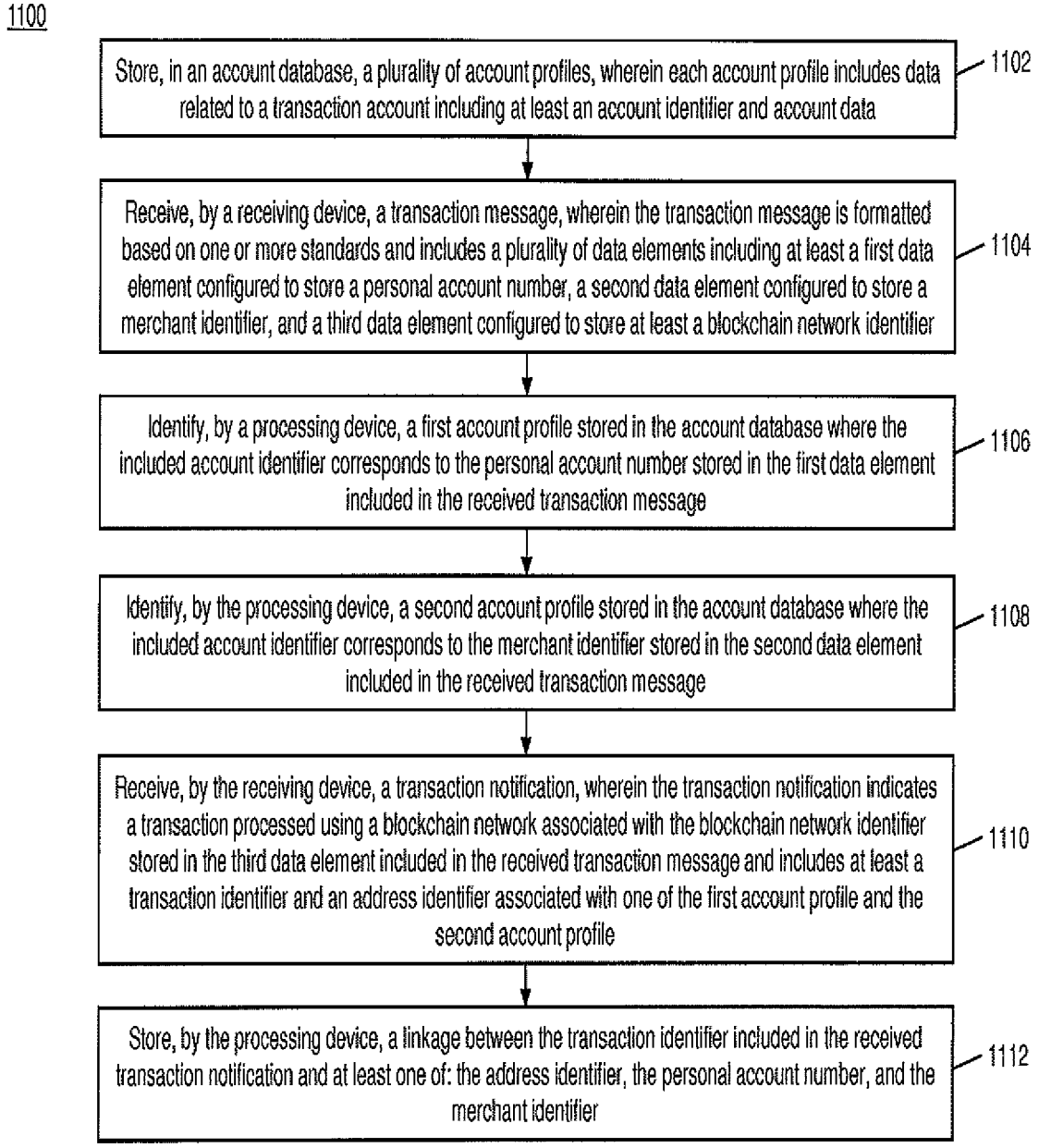

1100
Store, in an account database, a plurality of account profiles, wherein each account profile includes data related to a transaction account including at least an account identifier and account data
1102
Receive, by a receiving device, a transaction message, wherein the transaction message is formatted based on one or more standards and includes a plurality of data elements including at least a first data element configured to store a personal account number, a second data element configured to store a merchant identifier, and a third data element configured to store at least a blockchain network identifier
1104
Identify, by a processing device, a first account profile stored in the account database where the included account identifier corresponds to the personal account number stored in the first data element included in the received transaction message
1106
Identify, by the processing device, a second account profile stored in the account database where the included account identifier corresponds to the merchant identifier stored in the second data element included in the received transaction message
1108
Receive, by the receiving device, a transaction notification, wherein the transaction notification indicates a transaction processed using a blockchain network associated with the blockchain network identifier stored in the third data element included in the received transaction message and includes at least a transaction identifier and an address identifier associated with one of the first account profile and the second account profile
1110
Store, by the processing device, a linkage between the transaction identifier included in the received transaction notification and at least one of: the address identifier, the personal account number, and the merchant identifier
1112

FIG. 11

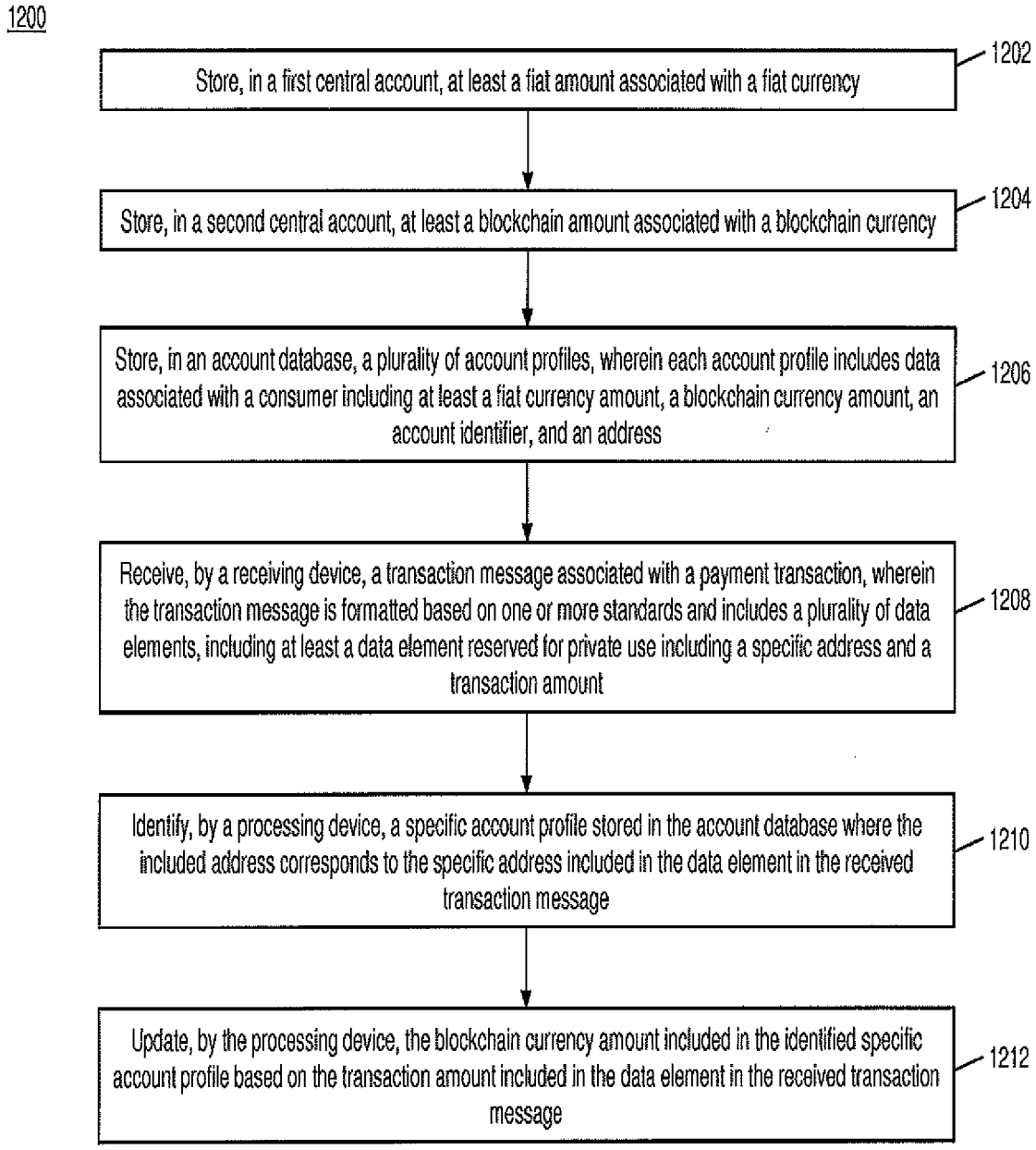

1200
Store, in a first central account, at least a fiat amount associated with a fiat currency
1202
Store, in a second central account, at least a blockchain amount associated with a blockchain currency
1204
Store, in an account database, a plurality of account profiles, wherein each account profile includes data associated with a consumer including at least a fiat currency amount, a blockchain currency amount, an account identifier, and an address
1206
Receive, by a receiving device, a transaction message associated with a payment transaction, wherein the transaction message is formatted based on one or more standards and includes a plurality of data elements, including at least a data element reserved for private use including a specific address and a transaction amount
1208
Identify, by a processing device, a specific account profile stored in the account database where the included address corresponds to the specific address included in the data element in the received transaction message
1210
Update, by the processing device, the blockchain currency amount included in the identified specific account profile based on the transaction amount included in the data element in the received transaction message
1212

FIG. 12

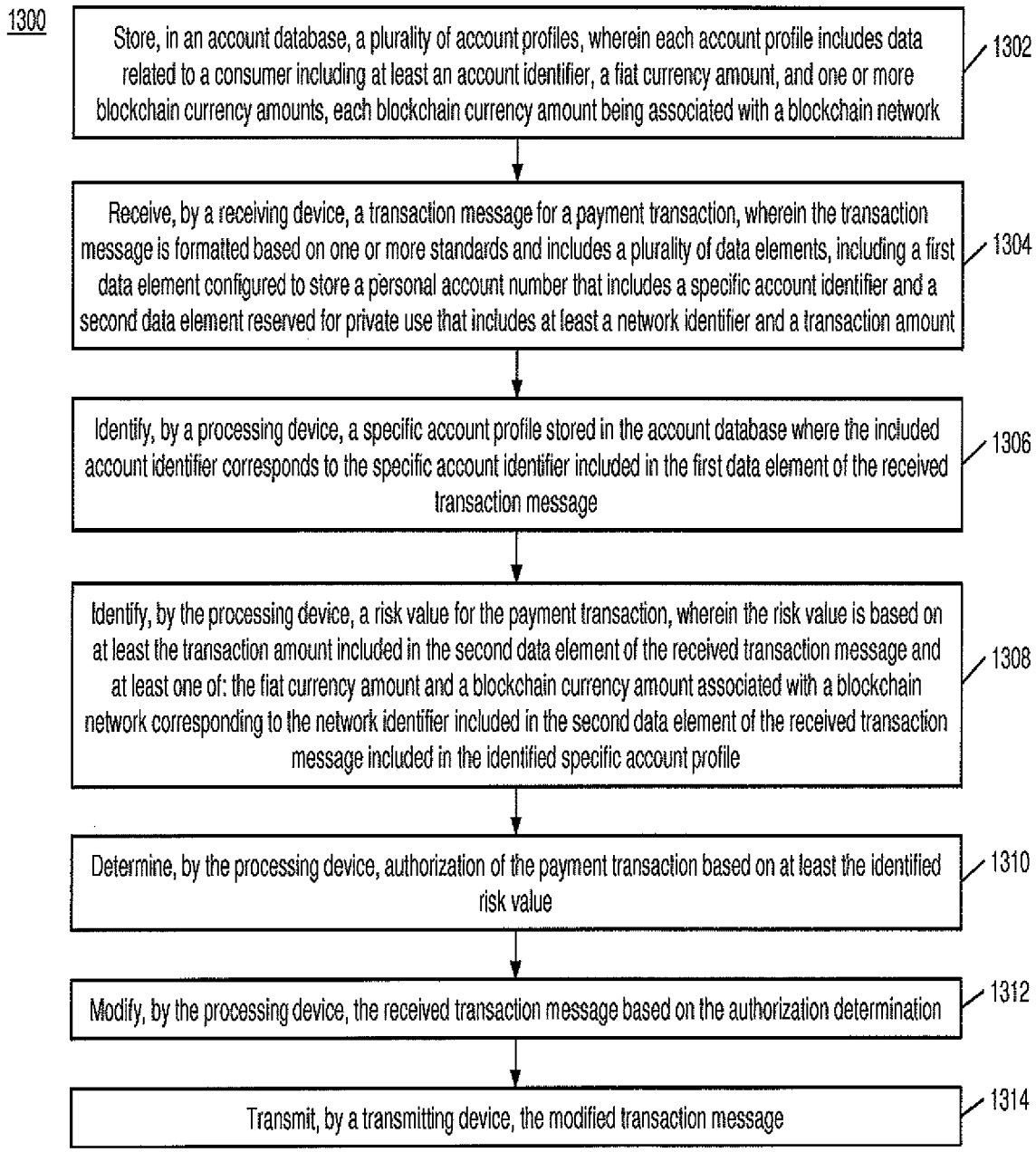

1300
Store, in an account database, a plurality of account profiles, wherein each account profile includes data related to a consumer including at least an account identifier, a fiat currency amount, and one or more blockchain currency amounts, each blockchain currency amount being associated with a blockchain network
1302
Receive, by a receiving device, a transaction message for a payment transaction, wherein the transaction message is formatted based on one or more standards and includes a plurality of data elements, including a first data element configured to store a personal account number that includes a specific account identifier and a second data element reserved for private use that includes at least a network identifier and a transaction amount
1304
Identify, by a processing device, a specific account profile stored in the account database where the included account identifier corresponds to the specific account identifier included in the first data element of the received transaction message
1306
Identify, by the processing device, a risk value for the payment transaction, wherein the risk value is based on at least the transaction amount included in the second data element of the received transaction message and at least one of: the fiat currency amount and a blockchain currency amount associated with a blockchain network corresponding to the network identifier included in the second data element of the received transaction message included in the identified specific account profile
1308
Determine, by the processing device, authorization of the payment transaction based on at least the identified risk value
1310
Modify, by the processing device, the received transaction message based on the authorization determination
1312
Transmit, by a transmitting device, the modified transaction message
1314

FIG. 13

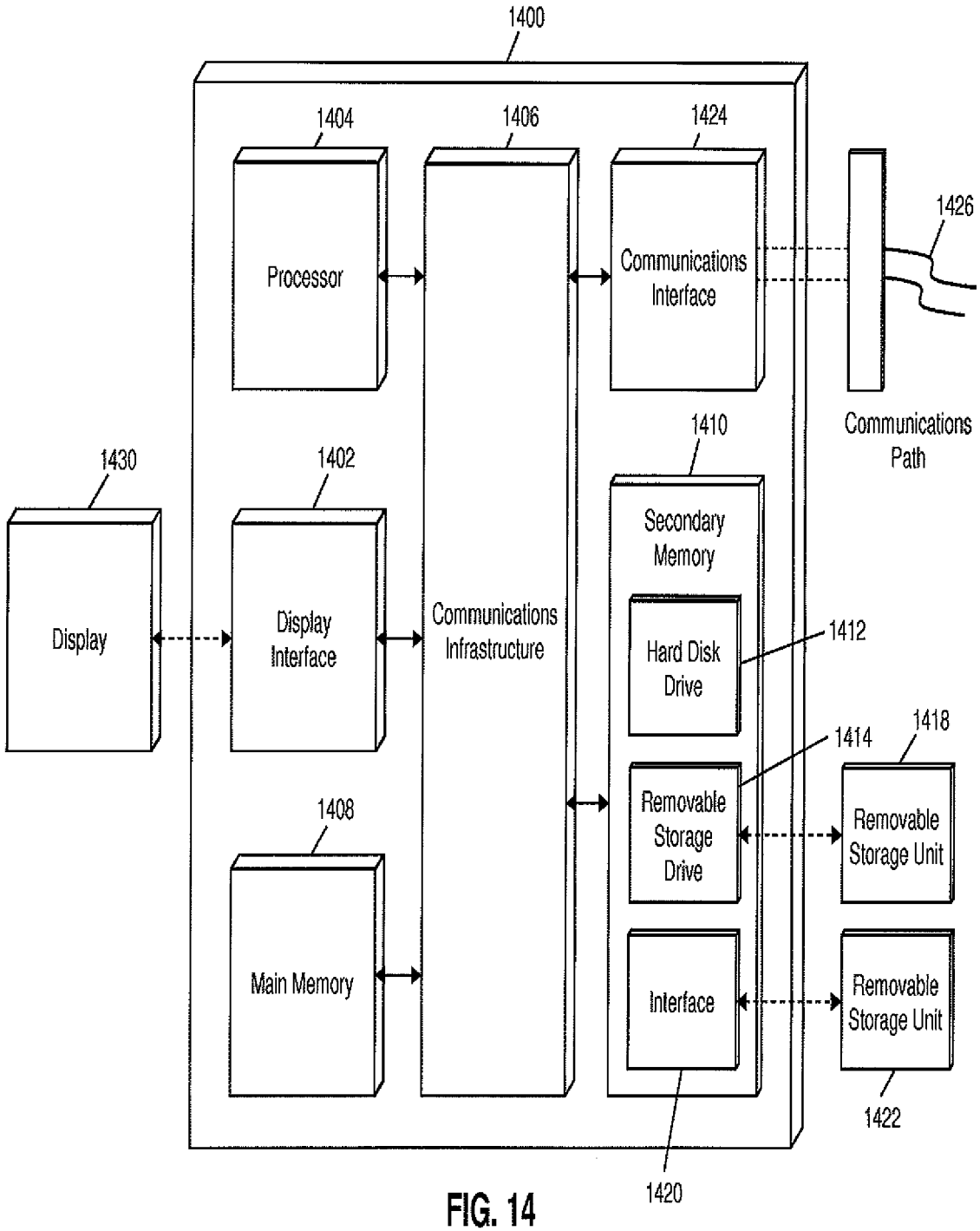

1400
1404
1406
1424
1426
Processor
Communications Interface
Communications Path
1410
1430
1402
Secondary Memory
Display
Display Interface
Communications Infrastructure
Hard Disk Drive
1412
1414
1418
Removable Storage Drive
Removable Storage Unit
1408
Main Memory
Interface
Removable Storage Unit
1422
1420

FIG. 14