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# CONSUMER INITIATED HIGH-VALUE PAYMENTS

DEEPA NAYAK
*VISA*

CLIVE WINTLE
*VISA*

KEVIN JACKLIN
*VISA*

ASHWUNI SAPRA
*VISA*

ROHINI SUREN
*VISA*

*See next page for additional authors*

Inventor(s)
DEEPA NAYAK, CLIVE WINTLE, KEVIN JACKLIN, ASHWUNI SAPRA, ROHINI SUREN, and SAMEER CHOUGULE

# “CONSUMER INITIATED HIGH-VALUE PAYMENTS”

## VISA

**INVENTORS:**

**DEEPA NAYAK**

**CLIVE WINTLE**

**KEVIN JACKLIN**

**ASHWUNI SAPRA**

**ROHINI SUREN**

**SAMEER CHOUGULE**

## TECHNICAL FIELD

[0001] The present subject matter is, in general, related to financial transactions, and more particularly, but not exclusively to a method and a system of enabling a consumer to initiate a secure, high-value payment transfer.

## BACKGROUND

[0002] Card payments involve a relatively standard process to process transactions initiated by a cardholder at a merchant. A cardholder/consumer wishes to pay for items or loan repayment by themselves by transferring money/funds from his/her bank account to a receiver bank account using various techniques. However, for a large-value transaction, for example, when the cardholder wishes to purchase a new car or a new house, the cardholder is unlikely to be able to use his/her card for payment due to various restrictions. The restrictions may range from transaction amount limits based on the product category to the issuers rejecting high-value transactions because they are inconsistent with the cardholder's typical spending patterns.

[0003] For example, when the cardholder buys a new property, a transfer of a deposit to the conveyancer requires the payment to be split into various smaller Banker's Automated Clearing System (BACS) transfers (as shown in **FIG. A**) or a single expensive Clearing House Automated Payment System (CHAPS) transfer (as shown in **FIG. B**). However, both BACS transfer and CHAPS transfer may require the cardholder to physically visit a bank and rely on a sender accurately completing the physical BACS/CHAPS forms with the right receiving bank information. In other words, Bank-to-Bank (B2B) transfers are required to be initiated in person at a bank in order for the banks to retain adequate/sufficient control and Know Your Customer (KYC) of the cardholder. Moreover, the transfer of funds may take several days to clear. Any faster option would be expensive. For instance, the BACS transfer, which is utilized for account-to-account transfers, requires several days to credit the money/funds to the recipient's account. Moreover, payments initiated on a Friday, or a holiday may not be finalized until the beginning of the next business day.

[0004] In a different scenario, as shown in **FIG. C**, the cheque payment transfer method may be utilized for account-to-account transfers. But the time it takes for the recipient's account to receive the money/fund is typically between 7 and 14 days. Also, in some of the existing payment solutions, the sender may not be able to check if the recipient details are correct prior to making the payment, leading to potential detrimental outcomes, including non-payment.

Additionally, faster payment types of transactions may impose a transaction amount restriction, limiting the cardholder's ability to use them for only certain transaction types. Further, current money transfer solutions typically have a relatively low maximum amount limit, for example, $20K.

[0005] In view of the above limitations, it is desirable to have a cheaper and faster payment mechanism that allows consumers to initiate high-value transactions in a convenient way.

## BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The accompanying drawings, which are incorporated in and constitute a part of this disclosure, illustrate exemplary embodiments and, together with the description, explain the disclosed principles. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The same numbers are used throughout the figures to reference like features and components. Some embodiments of device or system and/or methods in accordance with embodiments of the present subject matter are now described, by way of example only, and with reference to the accompanying figures, in which:

[0007] **FIG. A** illustrates an exemplary flow of a conventional method for account-to-account transfers.

[0008] **FIG. B** illustrates an exemplary flow of a conventional method for high-value payments.

[0009] **FIG. C** illustrates an exemplary flow of a conventional method for transferring money using a cheque.

[0010] **FIG. 1** illustrates an exemplary environment of a system for initiating a secure, high-value payment transfer from a payment initiator to a payment receiver, in accordance with some embodiments of the present disclosure.

[0011] **FIG. 2a, FIG. 2b** and **FIG. 2c** illustrate an exemplary sequence diagram illustrating various operations for performing a secure, high-value payment transfer, in accordance with some embodiments of the present disclosure.

[0012] **FIG. 3** illustrates an exemplary flow diagram of a method of initiating a secure high-value payment transfer from a payment initiator to a payment receiver, in accordance with some embodiments of the present disclosure.

[0013] **FIG. 4** illustrates an exemplary consumer interface for the high-value money transfer, in accordance with some embodiments of the present disclosure.

[0014] **FIG. 5** is a block diagram of an exemplary computer system for implementing embodiments consistent with the present disclosure.

[0015] The figures depict embodiments of the disclosure for purposes of illustration only. One skilled in the art will readily recognize from the following description that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles of the disclosure described herein.

## DESCRIPTION OF THE DISCLOSURE

[0016] It is to be understood that the present disclosure may assume various alternative variations and step sequences, except where expressly specified to the contrary. It is also to be understood that the specific devices and processes illustrated in the attached drawings and described in the following specification are simply exemplary and non-limiting embodiments or aspects. Hence, specific dimensions and other physical characteristics related to the embodiments or aspects disclosed herein are not to be considered as limiting.

[0017] In the present document, the word "exemplary" is used herein to mean "serving as an example, instance, or illustration." Any embodiment or implementation of the present subject matter described herein as "exemplary" is not necessarily to be construed as preferred or advantageous over other embodiments.

[0018] While the disclosure is susceptible to various modifications and alternative forms, specific embodiment thereof has been shown by way of example in the drawings and will be described in detail below. It should be understood, however that it is not intended to limit the disclosure to the particular forms disclosed, but on the contrary, the disclosure is to cover all modifications, equivalents, and alternative falling within the spirit and the scope of the disclosure.

[0019] The terms “comprises”, “comprising”, or any other variations thereof, are intended to cover a non-exclusive inclusion, such that a setup, device, or method that comprises a list of components or steps does not include only those components or steps but may include other components or steps not expressly listed or inherent to such setup or device or method. In other words, one or more elements in a device or system or apparatus proceeded by “comprises… a” does not, without more constraints, preclude the existence of other elements or additional elements in the device or system or apparatus.

[0020] The terms "an embodiment", "embodiment", "embodiments", "the embodiment", "the embodiments", "one or more embodiments", "some embodiments", and "one embodiment" mean "one or more (but not all) embodiments of the invention(s)" unless expressly specified otherwise.

[0021] The terms "including", "comprising", “having” and variations thereof mean "including but not limited to" unless expressly specified otherwise.

[0022] As used herein, the terms “communication” and “communicate” may refer to the reception, receipt, transmission, transfer, provision, and/or the like of information (e.g., data, signals, messages, instructions, commands, and/or the like). For one unit (e.g., a device, a system, a component of a device or system, combinations thereof, and/or the like) to be in communication with another unit means that the one unit can receive information directly or indirectly from and/or transmit information to the other unit. This may refer to a direct or indirect connection (e.g., a direct communication connection, an indirect communication connection, and/or the like) that is wired and/or wireless in nature. Additionally, two units may be in communication with each other even though the information transmitted may be modified, processed, relayed, and/or routed between the first and second unit. For example, a first unit may be in communication with a second unit even though the first unit passively receives information and does not actively transmit information to the second unit. As another example, a first unit may be in communication with a second unit if at least one intermediary unit (e.g., a third unit located between the first unit and the second unit) processes information received from the first unit and communicates the processed information to the second unit. In some non-limiting embodiments, a message may refer to a network packet (e.g., a data packet and/or the like) that includes data. It will be appreciated that numerous other arrangements are possible.

[0023] As used herein, the term “computing device” may refer to one or more electronic devices that are configured to communicate with directly or indirectly or over one or more networks. A computing device may be a mobile or portable computing device, a desktop computer, a server, and/or the like. Furthermore, the term “computer” may refer to any computing device that includes the necessary components to receive, process, and output data, and normally includes a display, a processor, a memory, an input device, and a network interface. A “computing system” may include one or more computing devices or computers.

[0024] As used herein, the term “application” or “Application Program Interface” (API) may refer to computer code or other data sorted on a computer-readable medium that may be executed by a processor to facilitate the interaction between software components, such as a client-side front-end and/or server-side back-end for receiving data from the client. An “interface” refers to a generated display, such as one or more graphical user interfaces (GUIs) with which a user may interact, either directly or indirectly (e.g., through a keyboard, mouse, touchscreen, etc.). Further, multiple computers, e.g., servers, or other computerized devices, such as an autonomous vehicle including a vehicle computing system, directly or indirectly communicating in the network environment may constitute a “system” or a “computing system”.

[0025] As used herein, the term "device or mobile device" may refer to any electronic device that may be transported and operated by a user, which may also provide remote communication capabilities to a network. Examples of remote communication capabilities include using a mobile phone (wireless) network, wireless data network (e.g., 3G, 4G or similar networks), Wi-Fi, Wi-Max, or any other communication medium that may provide access to a network such as the Internet or a private network. Examples of mobile devices include mobile phones (e.g., cellular phones), PDAs, tablet computers, netbooks, laptop computers, personal music players, hand-held specialized readers, wearable devices (e.g., watches), vehicles (e.g., cars), etc. A mobile device may comprise any suitable hardware and software for performing such functions and may also include multiple devices or components (e.g., when a device has remote access to a network by tethering to another device - i.e., using the other device as a relay - both devices taken together may be considered a single mobile device).

[0026] As used herein, the term "Authentication data" may refer to any data suitable for authenticating a user or mobile device. Authentication data may be obtained from a user or a device that is operated by the user. Examples of authentication data obtained from a user may

include PINs (personal identification numbers), passwords, etc. Examples of authentication data that may be obtained from a device may include device serial numbers, hardware secure element identifiers, device fingerprints, phone numbers, IMEI numbers, etc.

[0027] **FIG. 1** illustrates an exemplary environment of a system for initiating a secure high-value payment transfer from a payment initiator to a payment receiver, in accordance with some embodiments of the present disclosure.

[0028] As illustrated in **FIG. 1**, the system for initiating the secure high-value payment transfer from a payment initiator to a payment receiver is implemented using an exemplary environment 100. The environment 100 comprises, without limiting to, a payment initiator device 101, a payment receiver 109, an originating financial institution 103, and a receiving financial institution 107 connected via a payment network 105 or a payment interface, such as VisaNet. The payment initiator may also be referred to alternatively as a cardholder, a consumer, or an account holder, and is a person or entity initiating the fund transfer using the payment initiator device 101. The system may be associated with a database 111, which is used to store the complete payment details of all the payment recipients. The method of initiating, by a cardholder/consumer, a secure high-value payment transfer is further explained with the help of a sequence flow diagram in **FIG. 2** and a flowchart in **FIG. 3**. The payment initiator device 101 may be a mobile device.

[0029] In an embodiment, the payment initiator device 101 and the payment receiver 109 may be a mobile device, a tablet, a person computer and the like. The payment initiator device 101 may comprise any suitable hardware and software (pre-installed Application (App)) for performing one or more functions and may also include multiple devices or components. The payment initiator device 101 may be associated with the payment initiator, also referred to as the cardholder/consumer. The payment receiver 109 may be associated with the payment receiver, also referred to as a merchant, for example, a car dealer, solicitor firm, a government office and the like. The payment receiver may be an individual or an entity that provides services, or access to the customers based on a transaction, such as a payment/financial transaction.

[0030] In an embodiment, the payment network 105 may include, without limitation, a direct interconnection, Local Area Network (LAN), Wide Area Network (WAN), wireless network (for example, using Wireless Application Protocol), the Internet, and the like.

[0031] In an embodiment, the originating financial institution 103 and the receiving financial institution 107 are a sending processor and a destination processor used to process the transaction data and/or transaction file. The originating financial institution 103 may be operable for transmitting the transaction file to the gateway/network and the receiving financial institution 107 may be operable for receiving the converted transaction file from the gateway. The originating financial institution 103 is associated with the payment initiator and the receiving financial institution 107 is associated with the payment receiver. Both financial institutions are operated in accordance with a business-to-business model. In some embodiments, the financial institutions are banks and/or other entities and/or organizations, which are subject to regulation to assure compliance with KYC, Anti-Money Laundering (AML) and other requirements.

[0032] In an embodiment, consider a payment initiator, who wishes to purchase a new car or a house as an example. To verify the validity of the payment receiver, as illustrated in **FIG. 1**, the payment initiator sends an inquiry request, concerning the account details of the payment receiver to the originating financial institution 103 that issues the payment, using the payment initiator device 101. The payment receiver account details include, without limiting to, Primary Account Number (PAN), a sort code or a bank code (for example, a 6-digit unique number which is used to identify the payment receiver's bank location), and an account number. Subsequently, the originating financial institution 103 transmits the inquiry request to the payment network 105 for validating the payment receiver account details. The payment network 105 validates the payment receiver details and provides a unique validation code using the payment data and sends a response message to the originating financial institution 103. The unique validation code is derived from the recipient details, amount/fund details and so on, and is transmitted in response to uniquely identifying the transaction and to prepare for receipt of a high-value payment. Subsequently, the payment network 105 confirms the validity of the payment receiver details to the payment initiator via the originating financial institution 103 and requests confirmation from the payment initiator to continue with a money transfer.

[0033] In an embodiment, based on the confirmation, the payment initiator, via the payment initiator device 101, transmits the money transfer request to the payment network 105 through the originating financial institution 103, along with the validation code and a Transaction ID (Tran ID). Thereafter, the payment network 105 re-validates both the validation code as well as the Tran ID before sending the money transfer request to a receiving financial institution

107. Upon receiving a confirmation message from the receiving financial institution 107, the payment network 105 transmits the confirmation message to the originating financial institution 103. Subsequently, the originating financial institution 103 transmits the confirmation message to the payment initiator. As a result, the payment initiator may transfer an adequate amount of money to the payment receiver account without having to physically visit a bank branch.

[0034] **FIG. 2a, FIG. 2b** and **FIG. 2c** illustrate an exemplary sequence diagram illustrating various operations for performing a secure high-value payment transfer, in accordance with some embodiments of the present disclosure.

[0035] In an embodiment, flows involved in performing a secure high-value payment transfer include a recipient onboarding flow, a payment initiation flow, and a payment transaction flow. In an embodiment, **FIG. 2a** illustrates an exemplary sequence diagram illustrating various steps involved in the onboarding of a payment receiver and/or a recipient. At step 1, the receiving financial institution 107 sends a request to a payment network 105 to subscribe to the high-value payment service. Thereafter, the payment network 105 transmits a response stating that the request has been agreed to perform due diligence on all receiving business (from payment receivers). The receiving financial institution 107 receives a business register from the payment receiver 109, at step 2, in order to comply with Anti-Money Laundering (AML) regulations. The business register may include details such as a payment receiver name, an account number and so on. The payment network 105 is connected to a database 111 (illustrated in **FIG. 1**), which is utilized to store one or more details collected during recipient onboarding, wherein the one or more details include payment receiver name, account number, and unique ID. The details of all payment recipients are readily available for acceptance parties via an Application Program Interface (API) in the database 111. At step 3, the Payment network 105 receives registration details via the API, a batch file or a request form and maintains the registration details for further processing. At step 4, the API and/or periodic batch updates are used to notify the originating financial institution 103 of the updated registration details. The registration details include a list of registered payment receivers, unique ID, and payment receiver names.

[0036] Upon successful completion of onboarding recipient, the payment initiation flow is initiated. In some embodiments, as shown in **FIG. 2b**, at step 1, the payment initiation device 103 transmits an inquiry request along with the payment receiver details to check the validity of the payment receiver. The payment receiver details include, without limiting to, the PAN,

the sort code, an account number, amount details, a payment receiver Identifier (ID), a payment receiver name, and an initiator ID. The payment receiver ID may be derived from the payment receiver name (for example, merchant name) and the payment receiver data (for example, merchant address/identifying data). At step 2, the originating financial institution 103 forwards the requested inquiry to the payment network 105 for validating the details. Thereafter, the Payment network 105 may generate a validation code as a response to the inquiry request and communicates a response message to payment initiator device 103 through Payment network 105 (steps 3 and 4). The validation code is generated using the key transaction data and/or payment details including the recipient Identifier (ID), transaction amount and so on. The validation code is also referred to as a Funds Transfer Verification Value (FTVV). The validation code may be utilized to uniquely identify the transaction and to prepare for receipt of a high-value payment. The response message includes the validation code and confirms the validity of the payment receiver. Further, the originating financial institution informs the payment initiator about the validity of the payment receiver and requests the payment initiator to confirm that they wish to continue with the money/fund transfer.

[0037] In an embodiment, the payment initiation request message and the payment initiation response message may include one or more data elements as shown in Tables 1 and Table 2 below. The one or more data elements include, without limiting to, payee ID, unique payment initiator ID, unique transaction ID, transaction amount and transaction currency. Furthermore, the data elements required for generating FTVV pseudocode are tabulated in Table 3, wherein the data elements are forwarded to a host security module using the appropriate hashing method (for example, industry-standard algorithms such as Triple DES and SHA256 algorithm).

| Sl. No. | Data Elements in Payment Initiation Request |
|---|---|
| 1. | Payee ID |
| 2. | Unique Payment Initiator ID |
| 3. | Payment Initiator unique transaction ID |
| 4. | Transaction amount |
| 5. | Transaction currency |

**Table 1**

| Sl. No. | Data Elements in Payment Initiator Response |
|---|---|
| 1. | Switch Transaction ID |
| 2. | Unique Payment Receiver ID |
| 3. | FTVV (Validation Code) |

**Table 2**

| Sl. No. | Protected Data Elements for FTVV |
|---|---|
| 1. | Unique Payment Initiator ID |
| 2. | Payment Initiator unique transaction ID |
| 3. | Transaction amount |
| 4. | Transaction currency |
| 5. | Switch Transaction ID |
| 6. | Unique Payment Receiver ID |
| 7. | FTVV |

**Table 3**

[0038] After the successful completion of the payment initiation process, the payment transaction flow is initiated. In some embodiments, as shown in **FIG. 2c**, at step 1, the originating financial institution 103 receives a confirmation message from the payment initiator device 103 that the payment initiator wishes to continue with the money/fund transfer along with the key transaction data and the validation code. At step 2, the originating financial institution 103 forwards the confirmation message to the Payment network to re-calculate FTVV (refer Table 4) and verify against the original FTVV. For example, verifying FTVV creation data and/or time against expiry data and/or time using configurable values for expiry. Upon verification/matching the key transaction data and validation code from the payment network 105, the payment network 105 transmits the fund transfer instruction to the receiving financial institution 107 (at step 3). Further, at step 4, the receiving financial institution 107 confirms the receipt of the money transfer request. Subsequently, the payment network 105 transmits the confirmation message to the payment initiator via the original financial institution 103 (steps 5 and 6). As a result, the payment initiator may transfer the adequate amount to the payment receiver account via the payment receiver 109, for example, within a specified time period.

| Sl. No. | Protected Data Elements for FTVV |
|---|---|
| 1. | Unique Payment Initiator ID |
| 2. | Payment Initiator unique transaction ID |
| 3. | Transaction amount |
| 4. | Transaction currency |
| 5. | Switch Transaction ID |
| 6. | Unique Payment Receiver ID |
| 7. | FTVV |

**Table 4**

[0039] **FIG. 3** illustrates an exemplary flow diagram of a method of initiating a secure high-value payment transfer from a payment initiator to a payment receiver, in accordance with some embodiments of the present disclosure.

[0040] In an embodiment, as illustrated in **FIG. 3**, the payment initiator initiates a high value money transfer to a receiving business or government in order to pay a deposit on the house and/or car or pay an invoice or pay a tax bill etc. At step 303, the method initiates the process of onboarding the recipient, as illustrated in **FIG. 2a**, that is, for onboarding the receiving financial institutions and onboarding payment recipients. At step 305, the method initiates the payment process as illustrated in **FIG. 2b**, that is, the originating financial institution initiates payment requests, based upon a request received from the payment initiator. At step 307, the method suggests determining the payment recipient. At step 209, the FTVV is calculated and sent in response to the receiving financial institution 107 via the Payment network 105. At step 311, the originating financial institution transmits the calculated FTVV to the payment initiator device 101 and initiates a fund transfer request. At step 313, upon receiving the fund transfer request from the payment initiator, the payment network 105 re-validates the FTVV with the original generated FTVV and initiates the fund transfer to the receiving financial institution 107. At step 315, the receiving financial institution credits the money/fund to the payment recipient within a specified time period and completes the fund transfer process. Further, the payment initiator received confirmation that the fund transfer was successful.

[0041] **FIG. 4** illustrates an exemplary consumer interface for the high value money transfer, in accordance with some embodiments of the present disclosure.

[0042] In an embodiment, consider a payment initiator initiating the payment process for the high-value money transfer, as an example. As shown in **FIG. 4**, the payment receiver may select the account type and enter the payment receiver ID by scanning the QR code. Upon receiving confirmation on the payment receiver name, the payment initiator enters the transaction amount and confirms the amount by using a passcode and/or biometric. Thereafter, the payment initiator is again requested to confirm the amount to be transferred and the payment receiver details (for example, payment receiver name). Further, the payment initiator receives a confirmation message of successful fund/money transfer to the payment receiver.

Advantages of the present invention:

[0043] In an embodiment, the present disclosure improves the security of a payment transaction by generating a unique validation code based on the payment data during the pre-authentication/inquiry flow and by linking the subsequent money transfer with the pre-authentication using the unique validation code.

[0044] In an embodiment, the present disclosure reduces friction in the authentication process by eliminating the requirement for the consumer/cardholder to visit the bank in person/physically.

[0045] In an embodiment, the present disclosure improves Know Your Customer (KYC) by utilizing the banking application to notify the originator bank of an impending large value payment.

[0046] In an embodiment, the present disclosure reduces the processing time and improves the transaction processing speed.

General computer system:

[0047] **FIG. 5** illustrates a block diagram of an exemplary computer system for implementing embodiments consistent with the present disclosure.

[0048] In an embodiment, **FIG. 5** illustrates a block diagram of an exemplary computer system 500 which may be used to implement the system in accordance with the present disclosure. In some embodiments, the computer system 500 is used to transfer high-value money from a payment initiator device 101 to a payment receiver 109. In an embodiment, the computer system 500 may include a central processing unit (“CPU” or “processor”) 502. Processor 502 may include at least one data processor for executing processes in Virtual Storage Area

Network. Processor 502 may include at least one data processor for executing program components for executing user or system-generated business processes. A user may include a person, a person using a device such as those included in this disclosure, or such a device itself. The processor 502 may include specialized processing units such as integrated system (bus) controllers, memory management control units, floating point units, graphics processing units, digital signal processing units, etc.

[0049] The processor 502 may be disposed in communication with one or more Input/Output (I/O) devices (512 and 513) via I/O interface 501. The I/O interface 501 employ communication protocols/methods such as, without limitation, audio, analog, digital, monoaural, Radio Corporation of America (RCA) connector, stereo, IEEE-1394 high-speed serial bus, serial bus, Universal Serial Bus (USB), infrared, Personal System/2 (PS/2) port, Bayonet Neill-Concelman (BNC) connector, coaxial, component, composite, Digital Visual Interface (DVI), High-Definition Multimedia Interface (HDMI), Radio Frequency (RF) antennas, S-Video, Video Graphics Array (VGA), IEEE 802.11b/g/n/x, Bluetooth, cellular e.g., Code-Division Multiple Access (CDMA), High-Speed Packet Access (HSPA+), Global System for Mobile communications (GSM), Long-Term Evolution (LTE), Worldwide Interoperability for Microwave access (WiMax), or the like, etc.

[0050] Using the I/O interface 501, the computer system 500 may communicate with one or more I/O devices such as input devices 512 and output devices 513. For example, the input devices 512 may be an antenna, keyboard, mouse, joystick, (infrared) remote control, camera, card reader, fax machine, dongle, biometric reader, microphone, touch screen, touchpad, trackball, stylus, scanner, storage device, transceiver, video device/source, etc. The output devices 513 may be a printer, fax machine, video display (e.g., Cathode Ray Tube (CRT), Liquid Crystal Display (LCD), Light-Emitting Diode (LED), plasma, Plasma Display Panel (PDP), Organic Light-Emitting Diode display (OLED) or the like), audio speaker, etc.

[0051] In some embodiments, the processor 502 may be disposed in communication with a communication network 509 via a network interface 503. The network interface 503 may communicate with the communication network 509. The network interface 503 may employ connection protocols including, without limitation, direct connect, ethernet (e.g., twisted pair 10/100/1000 Base T), Transmission Control Protocol/Internet Protocol (TCP/IP), token ring, IEEE 802.11a/b/g/n/x, etc. The communication network 509 may include, without limitation, a direct interconnection, Local Area Network (LAN), Wide Area Network (WAN), wireless

network (e.g., using Wireless Application Protocol), the Internet, etc. Using the network interface 503 and the communication network 509, the computer system 500 may communicate with a database 514, which may be the enrolled templates database 513. The network interface 503 may employ connection protocols include, but not limited to, direct connect, ethernet (e.g., twisted pair 10/100/1000 Base T), Transmission Control Protocol/Internet Protocol (TCP/IP), token ring, IEEE 802.11a/b/g/n/x, etc.

[0052] The communication network 509 includes, but is not limited to, a direct interconnection, a Peer-to-Peer (P2P) network, Local Area Network (LAN), Wide Area Network (WAN), wireless network (e.g., using Wireless Application Protocol), the Internet, Wi-Fi, and such. The communication network 509 may either be a dedicated network or a shared network, which represents an association of the different types of networks that use a variety of protocols, for example, Hypertext Transfer Protocol (HTTP), Transmission Control Protocol/Internet Protocol (TCP/IP), Wireless Application Protocol (WAP), etc., to communicate with each other. Further, the communication network 509 may include a variety of network devices, including routers, bridges, servers, computing devices, storage devices, etc.

[0053] In some embodiments, the processor 502 may be disposed of in communication with a memory 505 (e.g., RAM, ROM, etc. not shown in **FIG. 5**) via a storage interface 504. The storage interface 504 may connect to memory 505 including, without limitation, memory drives, removable disc drives, etc., employing connection protocols such as, Serial Advanced Technology Attachment (SATA), Integrated Drive Electronics (IDE), IEEE-1394, Universal Serial Bus (USB), fiber channel, Small Computer Systems Interface (SCSI), etc. The memory drives may further include a drum, magnetic disc drive, magneto-optical drive, optical drive, Redundant Array of Independent Discs (RAID), solid-state memory devices, solid-state drives, etc.

[0054] Memory 505 may store a collection of program or database components, including, without limitation, user interface 506, an operating system 507, a web browser 508 etc. In some embodiments, computer system 500 may store user/application data, such as, the data, variables, records, etc., as described in this disclosure. Such databases may be implemented as fault-tolerant, relational, scalable, secure databases such as Oracle or Sybase.

[0055] The operating system 507 may facilitate resource management and operation of the computer system 500. Examples of operating systems include, without limitation, Apple

Macintosh OS X™, UNIX™, Unix-like system distributions (e.g., Berkeley Software Distribution (BSD), FreeBSD, Net BSD™, Open BSD™, etc.), Linux distributions (e.g., Red Hat, Ubuntu, K-Ubuntu, etc.), International Business Machines (IBM™) OS/2™, Microsoft Windows (XP™, Vista/7/8, etc.), Apple iOS, Google Android, BlackBerry operating system (OS), or the like. The User Interface 506 may facilitate display, execution, interaction, manipulation, or operation of program components through textual or graphical facilities. For example, user interfaces may provide computer interaction interface elements on a display system operatively connected to the computer system 500, such as cursors, icons, checkboxes, menus, scrollers, windows, widgets, etc. Graphical User Interfaces (GUIs) may be employed, including, without limitation, Apple® Macintosh® operating systems' Aqua®, IBM® OS/2®, Microsoft® Windows® (e.g., Aero, Metro, etc.), web interface libraries (e.g., ActiveX®, Java®, JavaScript®, AJAX, HTML, Adobe® Flash®, etc.), or the like.

[0056] In some embodiments, the computer system 500 may implement web browser 508 stored program components. Web browser 508 may be a hypertext viewing application, such as Microsoft Internet Explorer, Google Chrome, Mozilla Firefox, Apple Safari, etc. Secure web browsing may be provided using secure hypertext transport protocol (HTTPS), Secure Sockets Layer (SSL), Transport Layer Security (TLS), etc. Web browsers 508 may utilize facilities such as AJAX, DHTML, Adobe Flash, JavaScript, Application Programming Interfaces (APIs), etc.

[0057] In some embodiments, the computer system 500 may implement a mail server stored program component. The mail server may be an Internet mail server such as Microsoft Exchange, or the like. The mail server may utilize facilities such as ASP, ActiveX, ANSI C++/C#, Microsoft .NET, Common Gateway Interface (CGI) scripts, Java, JavaScript, PERL, PHP, Python, WebObjects, etc. The mail server may utilize communication protocols such as Internet Message Access Protocol (IMAP), Messaging Application Programming Interface (MAPI), Microsoft Exchange, Post Office Protocol (POP), Simple Mail Transfer Protocol (SMTP), or the like.

[0058] In some embodiments, the computer system 500 may implement a mail client stored program component. The mail client may be a mail viewing application, such as APPLE® MAIL, MICROSOFT® ENTOURAGE®, MICROSOFT® OUTLOOK®, MOZILLA® THUNDERBIRD®, etc.

[0059] Furthermore, one or more computer-readable storage media may be utilized in implementing embodiments consistent with the present disclosure. A computer-readable storage medium refers to any type of physical memory on which information or data readable by a processor may be stored. Thus, a computer-readable storage medium may store instructions for execution by one or more processors, including instructions for causing the processor(s) to perform steps or stages consistent with the embodiments described herein. The term "computer-readable medium" should be understood to include tangible items and exclude carrier waves and transient signals, i.e., be non-transitory. Examples include Random Access Memory (RAM), Read-Only Memory (ROM), volatile memory, non-volatile memory, hard drives, Compact Disc (CD) ROMs, DVDs, flash drives, disks, and any other known physical storage media.

[0060] The described operations may be implemented as a method, system or article of manufacture using standard programming and/or engineering techniques to produce software, firmware, hardware, or any combination thereof. The described operations may be implemented as code maintained in a "non-transitory computer-readable medium", where a processor may read and execute the code from the computer-readable medium. The processor is at least one of a microprocessor and a processor capable of processing and executing the queries. A non-transitory computer-readable medium may include media such as magnetic storage medium (e.g., hard disk drives, floppy disks, tape, etc.), optical storage (CD-ROMs, DVDs, optical disks, etc.), volatile and non-volatile memory devices (e.g., EEPROMs, ROMs, PROMs, RAMs, DRAMs, SRAMs, Flash Memory, firmware, programmable logic, etc.), etc. Further, non-transitory computer-readable media may include all computer-readable media except for transitory. The code implementing the described operations may further be implemented in hardware logic (e.g., an integrated circuit chip, Programmable Gate Array (PGA), Application Specific Integrated Circuit (ASIC), etc.).

[0061] The illustrated steps are set out to explain the exemplary embodiments shown, and it should be anticipated that ongoing technological development will change the manner in which particular functions are performed. These examples are presented herein for purposes of illustration, and not limitation. Further, the boundaries of the functional building blocks have been arbitrarily defined herein for the convenience of the description. Alternative boundaries can be defined so long as the specified functions and relationships thereof are appropriately performed. Alternatives (including equivalents, extensions, variations, deviations, etc., of those

described herein) will be apparent to persons skilled in the relevant art(s) based on the teachings contained herein. Such alternatives fall within the scope and spirit of the disclosed embodiments. Also, the words "comprising," "having," "containing," and "including," and other similar forms are intended to be equivalent in meaning and be open ended in that an item or items following any one of these words is not meant to be an exhaustive listing of such item or items or meant to be limited to only the listed item or items. It must also be noted that as used herein, the singular forms “a,” “an,” and “the” include plural references unless the context clearly dictates otherwise.

[0062] Furthermore, one or more computer-readable storage media may be utilized in implementing embodiments consistent with the present disclosure. A computer-readable storage medium refers to any type of physical memory on which information or data readable by a processor may be stored. Thus, a computer-readable storage medium may store instructions for execution by one or more processors, including instructions for causing the processor(s) to perform steps or stages consistent with the embodiments described herein. The term “computer-readable medium” should be understood to include tangible items and exclude carrier waves and transient signals, i.e., are non-transitory. Examples include Random Access Memory (RAM), Read-Only Memory (ROM), volatile memory, non-volatile memory, hard drives, CD ROMs, DVDs, flash drives, disks, and any other known physical storage media.

[0063] Finally, the language used in the specification has been principally selected for readability and instructional purposes, and it may not have been selected to delineate or circumscribe the inventive subject matter. Accordingly, the disclosure of the embodiments of the disclosure is intended to be illustrative, but not limiting, of the scope of the disclosure.

[0064] With respect to the use of substantially any plural and/or singular terms herein, those having skill in the art can translate from the plural to the singular and/or from the singular to the plural as is appropriate to the context and/or application. The various singular/plural permutations may be expressly set forth herein for sake of clarity.

# “CONSUMER INITIATED HIGH-VALUE PAYMENTS”

## ABSTRACT

The present disclosure relates to a method and a system for facilitating a consumer to initiate a secure, high-value payment transfer. The present disclosure suggests sending, by a payment initiator, an inquiry about a payment receiver account along with the payment receiver’s details to a payment network via an originating financial institution. Thereafter, the payment network validates the payment receiver details and provides a validation code using the payment data to uniquely identify the transaction. Subsequently, the payment network confirms the validity of the payment receiver details to the payment initiator via the originating financial institution and requests confirmation from the payment initiator to continue with a money transfer. Based on the confirmation, the money transfer request, including the validation code and a Transaction ID (Tran ID), is sent from the payment initiator via the originating financial institution to the payment network. The payment network re-validates both the validation code as well as the Tran ID before sending the money transfer request to a receiving financial institution. Upon receiving the money transfer request, the receiving financial institution completes the request and sends the response back to the originating financial institution. Subsequently, the payment recipient receives the fund from the recipient financial institution. As a result, the payment initiator may transfer an adequate amount of money to the payment receiver account without having to physically visit a bank branch.

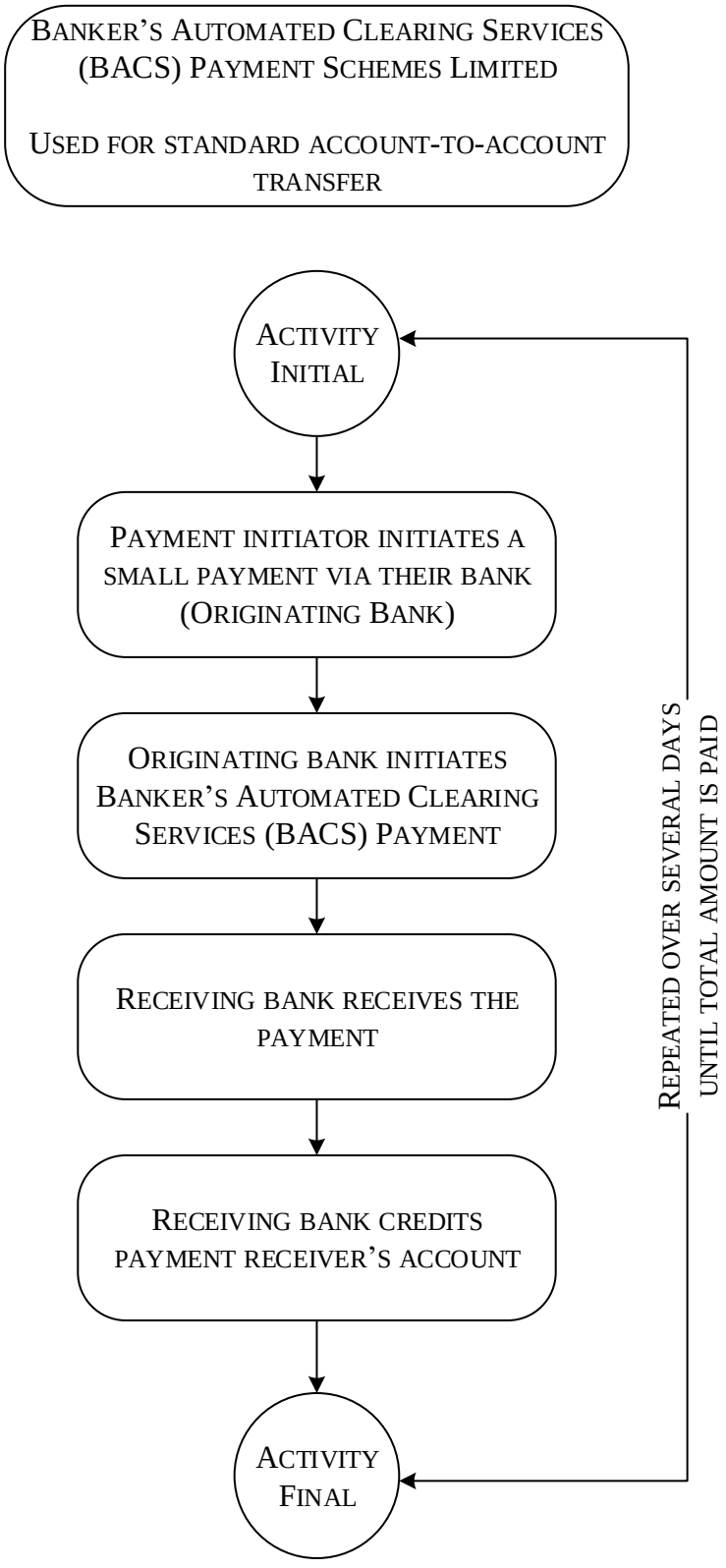
BANKER'S AUTOMATED CLEARING SERVICES (BACS) PAYMENT SCHEMES LIMITED
USED FOR STANDARD ACCOUNT-TO-ACCOUNT TRANSFER
ACTIVITY INITIAL
PAYMENT INITIATOR INITIATES A SMALL PAYMENT VIA THEIR BANK (ORIGINATING BANK)
ORIGINATING BANK INITIATES BANKER'S AUTOMATED CLEARING SERVICES (BACS) PAYMENT
RECEIVING BANK RECEIVES THE PAYMENT
RECEIVING BANK CREDITS PAYMENT RECEIVER'S ACCOUNT
ACTIVITY FINAL
REPEATED OVER SEVERAL DAYS UNTIL TOTAL AMOUNT IS PAID

**FIG. A**

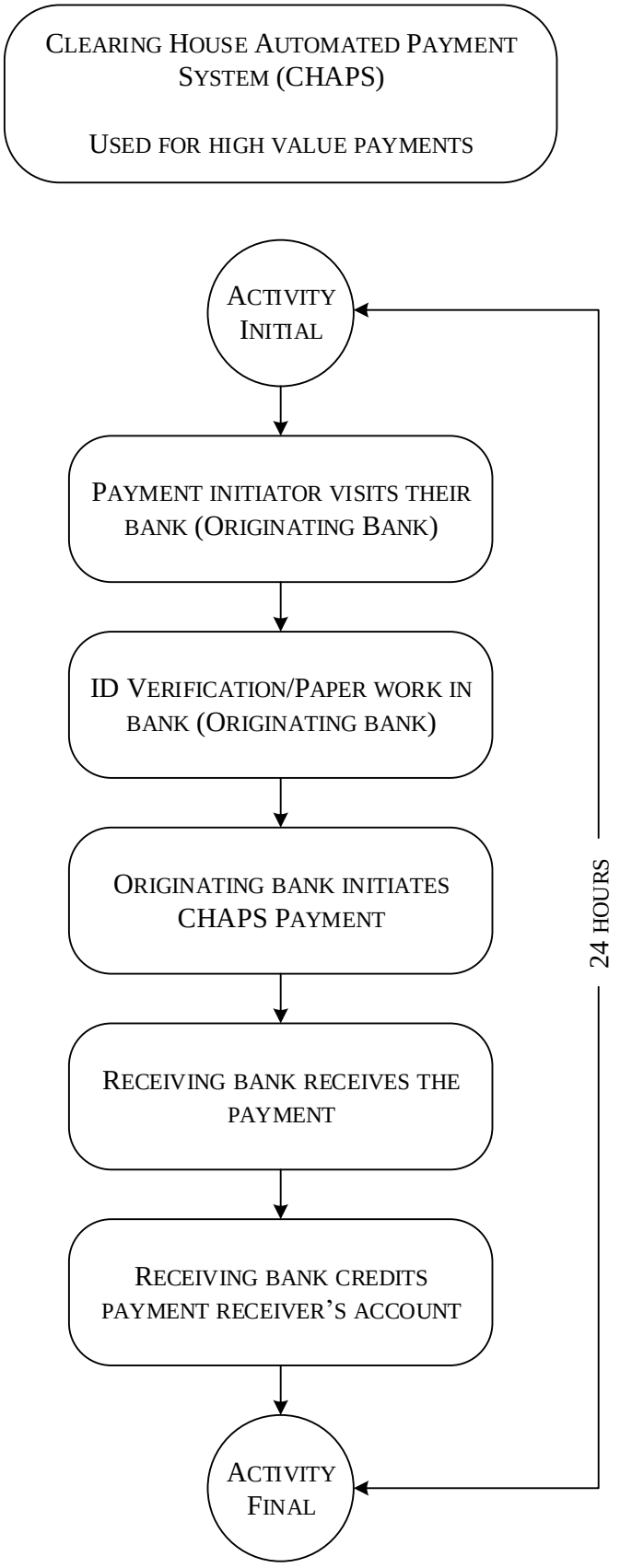
CLEARING HOUSE AUTOMATED PAYMENT SYSTEM (CHAPS)
USED FOR HIGH VALUE PAYMENTS
ACTIVITY INITIAL
PAYMENT INITIATOR VISITS THEIR BANK (ORIGINATING BANK)
ID VERIFICATION/PAPER WORK IN BANK (ORIGINATING BANK)
ORIGINATING BANK INITIATES CHAPS PAYMENT
RECEIVING BANK RECEIVES THE PAYMENT
RECEIVING BANK CREDITS PAYMENT RECEIVER'S ACCOUNT
ACTIVITY FINAL
24 HOURS

**FIG. B**

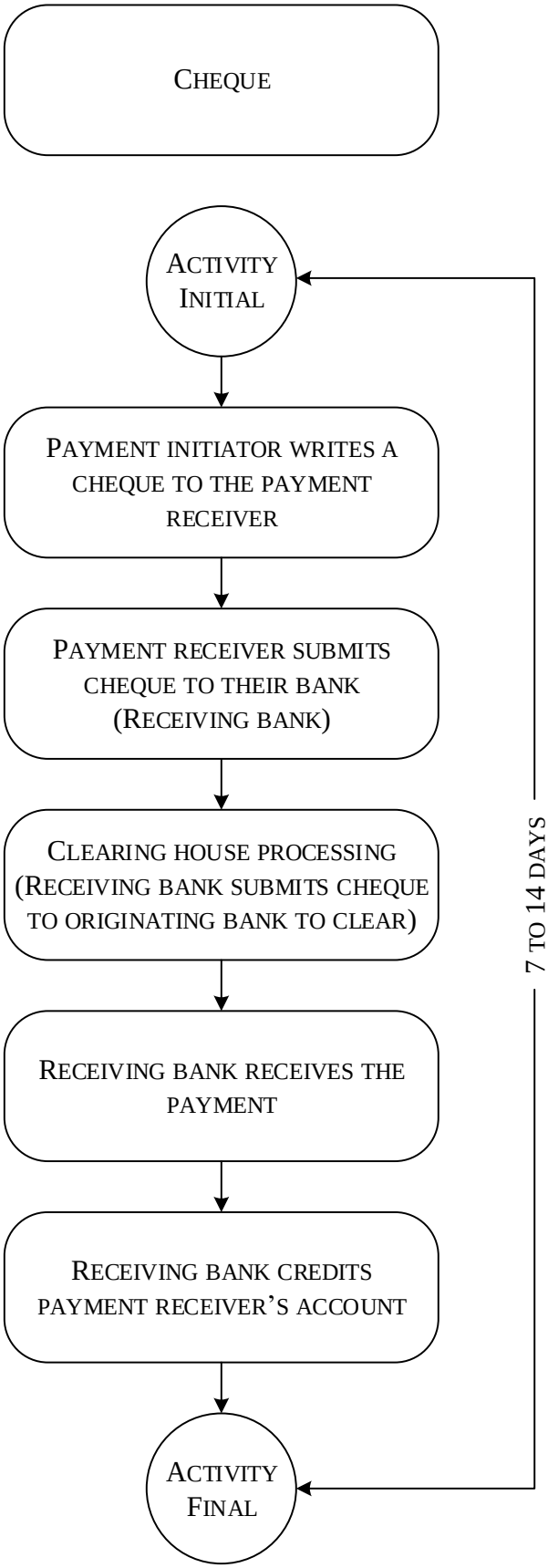
CHEQUE
ACTIVITY INITIAL
PAYMENT INITIATOR WRITES A CHEQUE TO THE PAYMENT RECEIVER
PAYMENT RECEIVER SUBMITS CHEQUE TO THEIR BANK (RECEIVING BANK)
CLEARING HOUSE PROCESSING (RECEIVING BANK SUBMITS CHEQUE TO ORIGINATING BANK TO CLEAR)
RECEIVING BANK RECEIVES THE PAYMENT
RECEIVING BANK CREDITS PAYMENT RECEIVER'S ACCOUNT
ACTIVITY FINAL
7 TO 14 DAYS

**FIG. C**

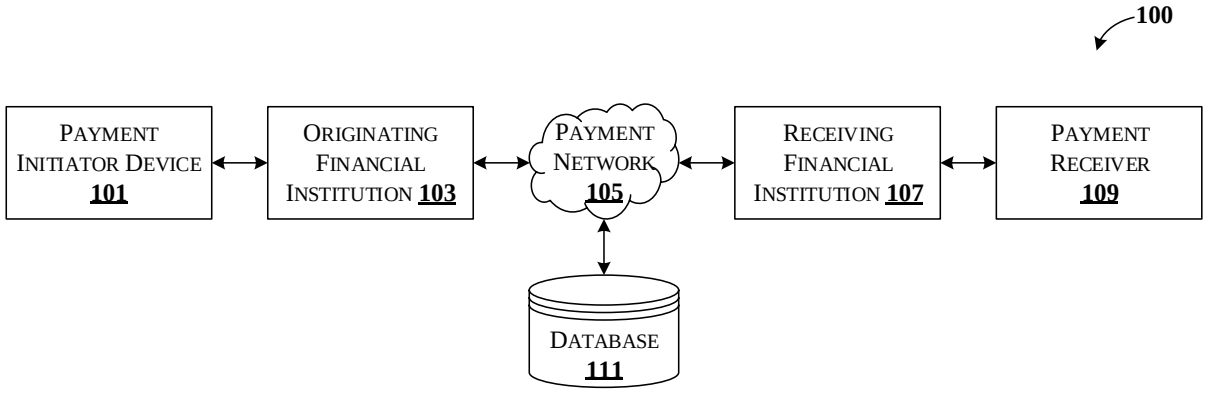
100
PAYMENT INITIATOR DEVICE 101
ORIGINATING FINANCIAL INSTITUTION 103
PAYMENT NETWORK 105
RECEIVING FINANCIAL INSTITUTION 107
PAYMENT RECEIVER 109
DATABASE 111

**FIG. 1**

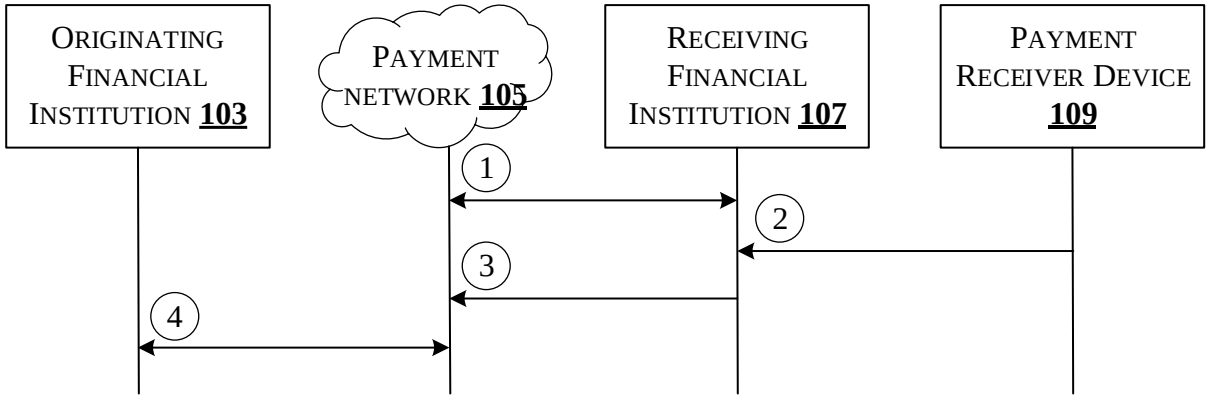
ORIGINATING FINANCIAL INSTITUTION 103
PAYMENT NETWORK 105
RECEIVING FINANCIAL INSTITUTION 107
PAYMENT RECEIVER DEVICE 109
1
2
3
4

**FIG. 2a**

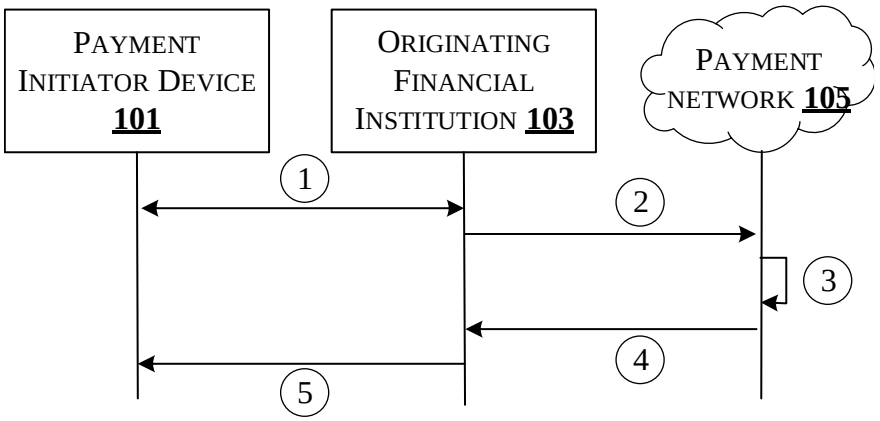
PAYMENT INITIATOR DEVICE 101
ORIGINATING FINANCIAL INSTITUTION 103
PAYMENT NETWORK 105
1
2
3
4
5

**FIG. 2b**

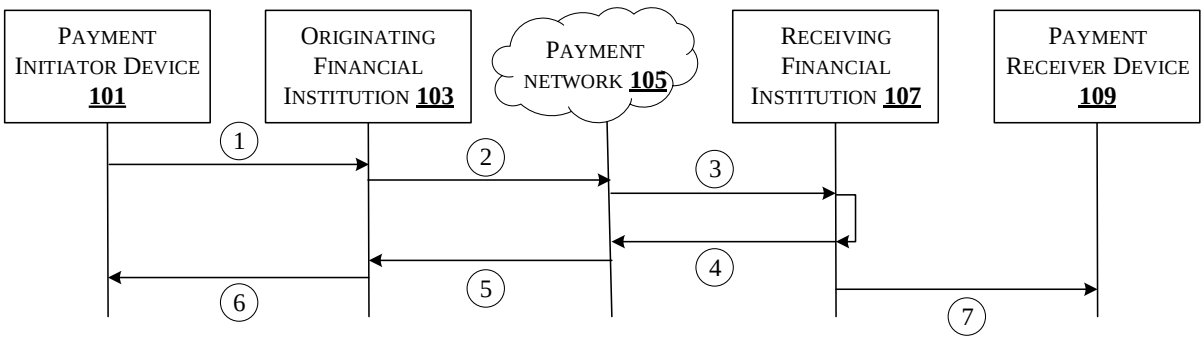
PAYMENT INITIATOR DEVICE 101
ORIGINATING FINANCIAL INSTITUTION 103
PAYMENT NETWORK 105
RECEIVING FINANCIAL INSTITUTION 107
PAYMENT RECEIVER DEVICE 109
1
2
3
4
5
6
7

**FIG. 2c**

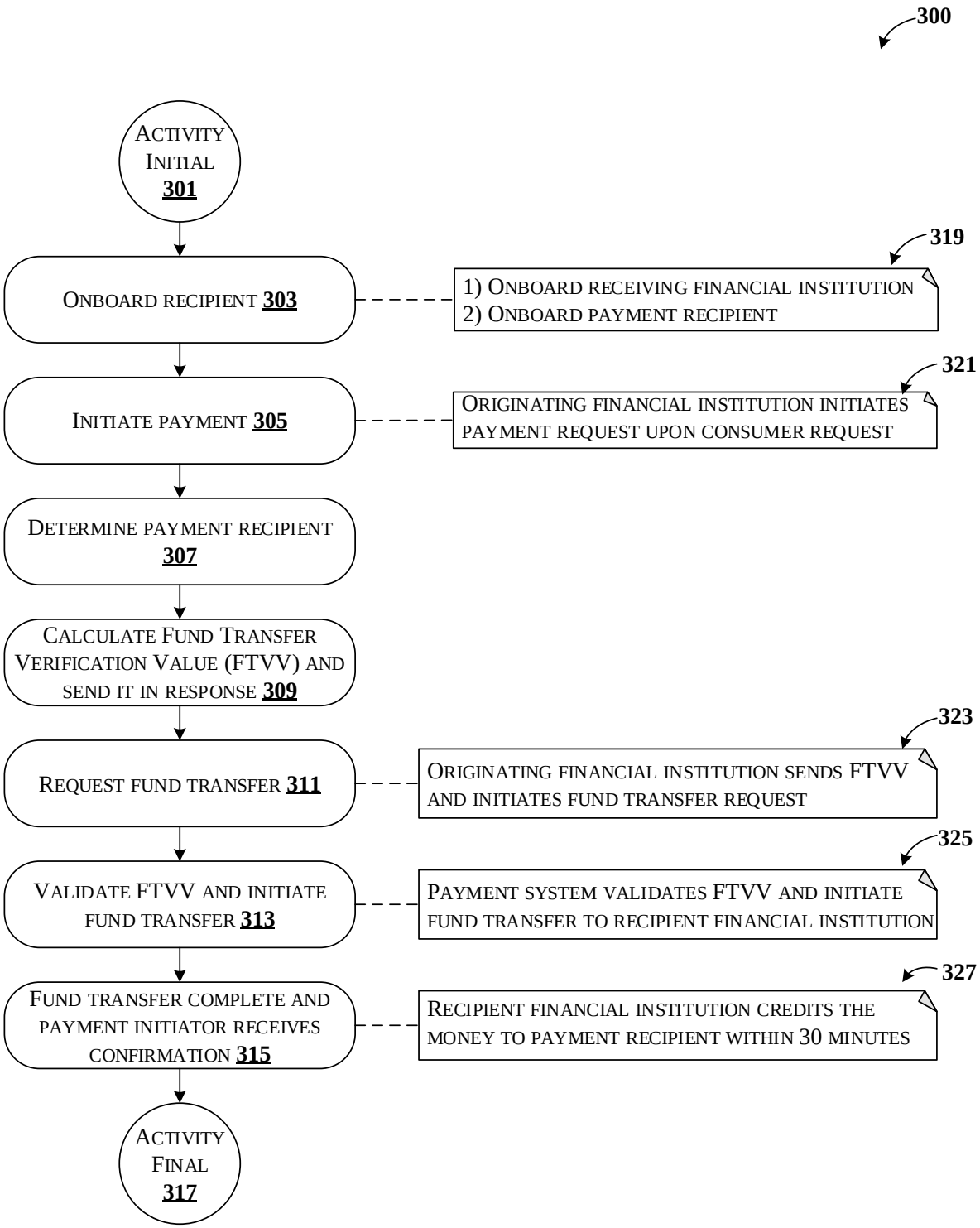
300
ACTIVITY INITIAL 301
ONBOARD RECIPIENT 303
319
1) ONBOARD RECEIVING FINANCIAL INSTITUTION
2) ONBOARD PAYMENT RECIPIENT
INITIATE PAYMENT 305
321
ORIGINATING FINANCIAL INSTITUTION INITIATES PAYMENT REQUEST UPON CONSUMER REQUEST
DETERMINE PAYMENT RECIPIENT 307
CALCULATE FUND TRANSFER VERIFICATION VALUE (FTVV) AND SEND IT IN RESPONSE 309
REQUEST FUND TRANSFER 311
323
ORIGINATING FINANCIAL INSTITUTION SENDS FTVV AND INITIATES FUND TRANSFER REQUEST
VALIDATE FTVV AND INITIATE FUND TRANSFER 313
325
PAYMENT SYSTEM VALIDATES FTVV AND INITIATE FUND TRANSFER TO RECIPIENT FINANCIAL INSTITUTION
FUND TRANSFER COMPLETE AND PAYMENT INITIATOR RECEIVES CONFIRMATION 315
327
RECIPIENT FINANCIAL INSTITUTION CREDITS THE MONEY TO PAYMENT RECIPIENT WITHIN 30 MINUTES
ACTIVITY FINAL 317

**FIG. 3**

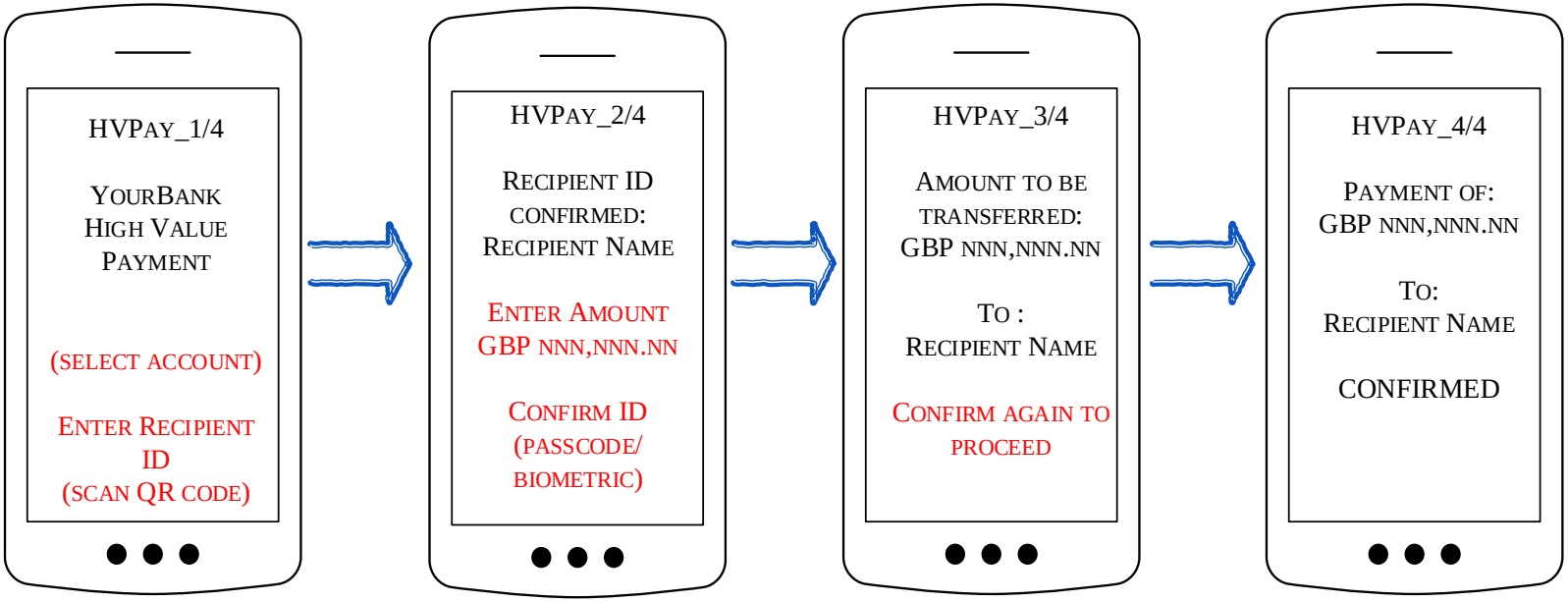
HVPAY_1/4
YOURBANK
HIGH VALUE
PAYMENT
(SELECT ACCOUNT)
ENTER RECIPIENT
ID
(SCAN QR CODE)
HVPAY_2/4
RECIPIENT ID
CONFIRMED:
RECIPIENT NAME
ENTER AMOUNT
GBP NNN,NNN.NN
CONFIRM ID
(PASSCODE/
BIOMETRIC)
HVPAY_3/4
AMOUNT TO BE
TRANSFERRED:
GBP NNN,NNN.NN
TO :
RECIPIENT NAME
CONFIRM AGAIN TO
PROCEED
HVPAY_4/4
PAYMENT OF:
GBP NNN,NNN.NN
TO:
RECIPIENT NAME
CONFIRMED

**FIG. 4**

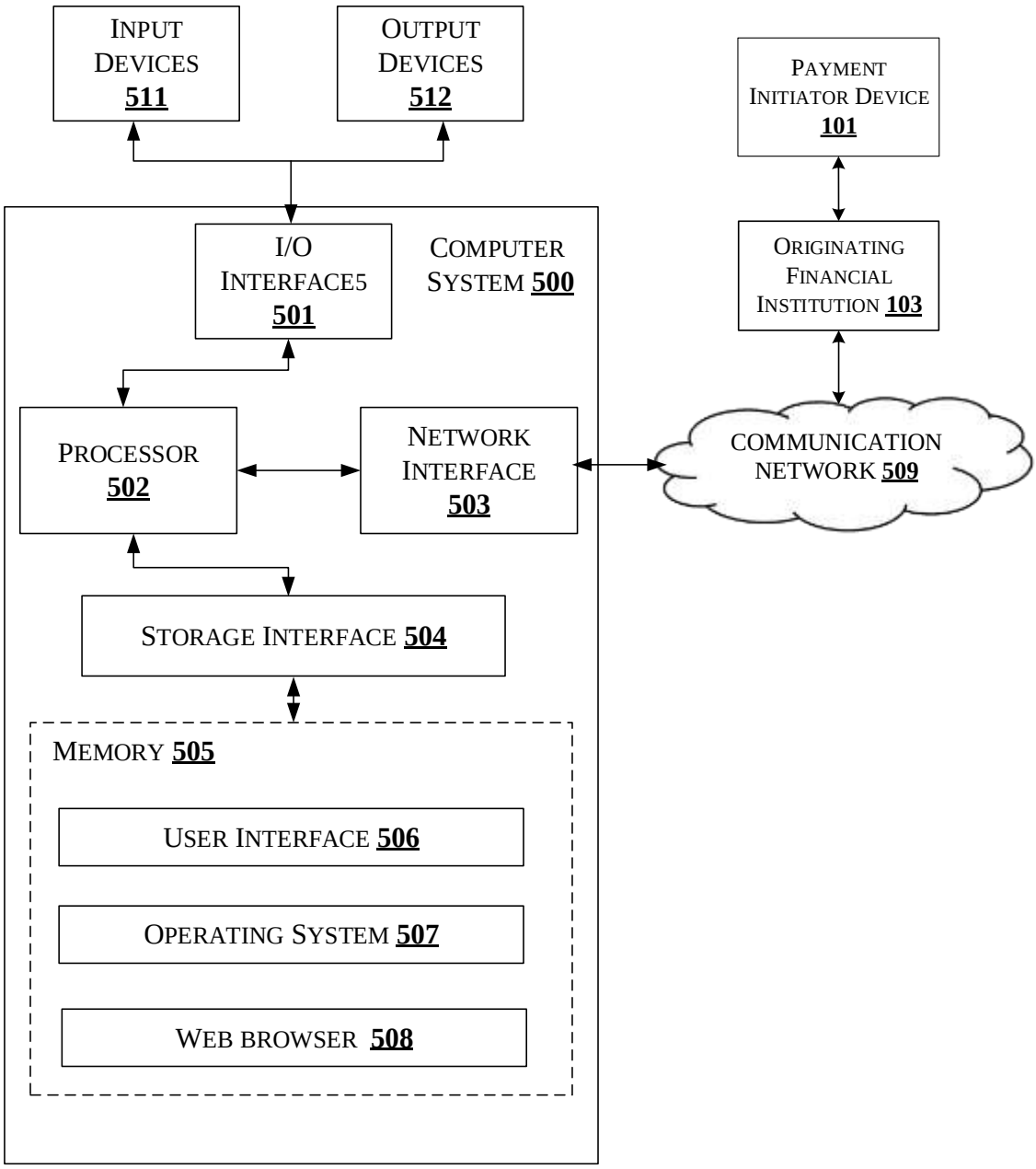
INPUT DEVICES 511
OUTPUT DEVICES 512
PAYMENT INITIATOR DEVICE 101
I/O INTERFACE5 501
COMPUTER SYSTEM 500
ORIGINATING FINANCIAL INSTITUTION 103
PROCESSOR 502
NETWORK INTERFACE 503
COMMUNICATION NETWORK 509
STORAGE INTERFACE 504
MEMORY 505
USER INTERFACE 506
OPERATING SYSTEM 507
WEB BROWSER 508

**FIG. 5**