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A METHOD AND SYSTEM FOR PROVIDING CONTACTLESS UPGRADE FOR LOYALTY CARDS

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**TITLE “A METHOD AND SYSTEM FOR PROVIDING
CONTACTLESS UPGRADE FOR LOYALTY
CARDS”**

VISA

**PATRICK FLANAGAN
STEVE KANG**

TECHNICAL FIELD

[001] The present disclosure generally relates to the field of processing loyalty cards. More particularly, but not exclusively, the disclosure relates to a method and a system for providing contactless upgrade for loyalty cards.

BACKGROUND

[002] Retail loyalty cards/program have been in widespread use for a while throughout world. In a typical retail loyalty program, a consumer enrolls, registers, or signs up for participation, and is then provided with a physical loyalty card which has a customer identification number associated with it. The loyalty card may simply have the customer identification number printed on it, or it may have it stored in a magnetic stripe of the card. The customer may then presents the loyalty card, or the customer identification number, when shopping at the retailer to collect loyalty points or receive other benefits from shopping at the retailer. Over the last few decades, retail establishments have recognized the value in strong customer loyalty.

[003] Conventional methods for loyalty programs do not have contactless capabilities to allow customers to interact with merchants who have issued the loyalty card. These methods include magstripe or hand key entry to provide card details for any processing. Thus, the customers may need to provide the identification number or have multiple interaction with merchant device/mobile phone in every possible scenarios. Hence, leading to unsatisfactory experience for the customers. Accordingly, providing contactless loyalty cards which may lead to screen free experience, is required to improve overall experience of customers with the loyalty cards.

[004] The information disclosed in this background of the disclosure section is only for enhancement of understanding of the general background of the invention and should not be taken as an acknowledgement or any form of suggestion that this information forms the prior art already known to a person skilled in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

[005] The accompanying drawings, which are incorporated in and constitute a part of this disclosure, illustrate exemplary embodiments and, together with the description, serve to 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.

[006] 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:

[007] **FIGURE 1A-1B** illustrate exemplary embodiments for providing contactless upgrade for loyalty cards in accordance with some embodiments of the present disclosure;

[008] **FIGURE 2** illustrates an exemplary representation for enrolling and using contactless upgrade loyalty cards in accordance with some embodiments of the present disclosure;

[009] **FIGURE 3** shows a flowchart illustrating a method of providing contactless upgrade for loyalty cards in accordance with some embodiments of the present disclosure; and

[010] **FIGURE 4** illustrates a block diagram of an exemplary computer system for implementing embodiments consistent with the present disclosure.

[011] 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

[012] 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.

[013] 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.

[014] 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 preceded by "comprises... a" does not, without more constraints, preclude the existence of other elements or additional elements in the device or system or apparatus.

[015] 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.

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

[017] The present disclosure relates to a method and system for providing contactless upgrade for loyalty cards. The method includes creating a cryptographic paired relationship between a loyalty card associated with a user, a local network device associated with a merchant and merchant store. In order to create the cryptographic pair, the method includes providing a Near Field Communication (NFC) stickers/tags specific to each merchant. In an embodiment, the NFC stickers may be obtained from a

merchant or a kiosk associated with a merchant. The NFC sticker may include login details to connect to a network of the merchant store. The user may download an application associated with the merchant in mobile device in order to login to the network. On following the login, the NFC sticker may be applied on the loyalty card. The loyalty card may then be used to open corresponding mobile application of the merchant in the mobile device in order to scan the NFC sticker on the loyalty card. On successful scanning, data from the NFC sticker is transmitted via the application to the network of the merchant store to verify user details and assign the details and login details to the merchant store. Thereafter, a notification request may be provided to the user on the application to join the network of the merchant store. Once the user accepts the request, the loyalty card is upgraded, and a confirmation is provided to the user. Thereafter, at any subsequent visit to the merchant store, the loyalty card may be used passively without utilising mobile phone details given the mobile phone or its connected wearable/IoT peers connect to the network of the merchant store (for e.g. LAN) with the previously stored login details. In case, if the network of the merchant store does not see a corresponding authenticated device when the loyalty card is used for any action, it may consider that the user of the loyalty account holder is not present, and therefore may decline preferred or sensitive transactions such as, adding an item to a virtual basket, identity verification for loyalty, membership or payment and the like.

[018] In the following detailed description of the embodiments of the disclosure, reference is made to the accompanying drawings that form a part hereof, and in which are shown by way of illustration specific embodiments in which the disclosure may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice the disclosure, and it is to be understood that other embodiments may be utilized and that changes may be made without departing from the scope of the present disclosure. The following description is, therefore, not to be taken in a limiting sense.

[019] **Figure 1A** illustrates an exemplary embodiment for providing contactless upgrade for loyalty cards in accordance with some embodiments of the present disclosure.

[020] As shown in **Figure 1A**, the exemplary environment 100 comprises one or more components configured to provide contactless upgrade for loyalty cards. In one embodiment, the exemplary environment 100 includes a merchant store 101 connected via a communication network (not shown explicitly) to a user device. The user device may be a mobile device 105, for example a smart phone,

including functionality for communicating over Internet or another appropriate communications network. In an embodiment, the communication network may include, without limitation, a direct interconnection, LAN (local area network), WAN (wide area network), wireless network, point-to-point network, or another configuration. One of the most common types of network in current use is a TCP/IP (Transfer Control Protocol and Internet Protocol) network for communication between database client and database server. Other common Internet protocols used for such communication include HTTPS, FTP, AFS, and WAP and using secure communication protocols etc.

[021] The mobile device 105 may comprise an integrated software application related to a merchant of the merchant store 10, which enables real time interaction with the merchant store 101. The software application may be used to connect a loyalty card 109 of user 107 (alternatively cardholder) with a local network of the merchant store 101. Alternatively, the software application may be used for any accessing any other features not mentioned herein explicitly. In an embodiment, the mobile device 105 may be NFC capable device. The loyalty card 109 may be defined as an identity card issued by a merchant to its customers as part of a consumer incentive scheme, whereby credits are accumulated for future discounts every time a transaction is recorded. In order to upgrade the loyalty card 109, the user 107 who may have obtained the loyalty card 109 at any point in time, may obtain an NFC sticker associated with the merchant. The NFC stickers may be obtained from a kiosk 103. In an embodiment, the kiosk 103 may be specific with merchant and located near the merchant store 101. The kiosk 103 may dispense NFC stickers from a secured location. The NFC sticker may include network details such as, Wi-Fi login and password for connecting to the local network of the merchant store 101. On obtaining the NFC sticker, the user 107 may apply the NFC sticker to the loyalty card 109. Further, the user 107 may need to connect the loyalty card 109 by login to the software application of the merchant and tapping the loyalty card with the NFC sticker to the mobile device 105. Alternatively, the user 107 may be required to access the software application in the mobile device 105 and tap the loyalty card 109 with the NFC sticker to the mobile device 105. On tapping the loyalty card with the NFC sticker, the NFC sticker is scanned by the mobile device 105. On a successful scan, details of the NFC sticker are transmitted via the software application to the local network of the merchant store 101 to verify user details and store NFC sticker details and password within local repository of the merchant store 101. **Figure 1B** shows an exemplary embodiment for connecting the loyalty card 109 by tapping on the mobile device 105 with the NFC sticker.

[022] Returning to Figure 1A, the user 107 may be promoted by a notification to join the network of the merchant store 101. On accepting the request, the loyalty card 109 is updated and a confirmation is provided to the user 107 via the software application. Thereupon, at any subsequent use of loyalty card 109, the loyalty card 109 may be used passively in numeral scenarios without utilising mobile phone details given the mobile phone or its connected wearable/IoT peers connect to the network of the merchant store (e.g. LAN) with the previously stored login details. For instance, the loyalty card 109 may be used to tap at any smart spot in the merchant store 101 in order to add any product to a virtual basket available on software application, for later checkout, add a coupon to loyalty card, register for promotions, deals or sweepstakes in the merchant store 101, quickly identifying at checkout, if membership is required for checkout, pay in-store, if an open loop credential is associated with the loyalty account, and the like. In case, if the network of the merchant store does not see a corresponding authenticated device when the loyalty card is used for any action, it may consider that the user of the loyalty account holder is not present, and therefore may decline preferred or sensitive transactions such as, adding an item to the virtual basket, identity verification for loyalty, membership or payment and the like.

[023] In an embodiment, if case of loss of the loyalty card 109, the loyalty card 109 cannot be falsely utilised, if the loyalty card 109 and the mobile device 105 are not connected to the network of the merchant store 101 (which is limited to internal dimension of the merchant store 101). Thus, if the loyalty card 109 is not identified locally when attempting use of loyalty card 109 for various use cases and transactions, a visual error may be provided to the user 107 on the mobile device 105. In an embodiment, location details of the user 107 may be provided to the local network and radius service of the merchant store 101. The location details of the user 107 may not be stored in a cloud associated with the merchant or any other off-premises network. Further, in case the user 107 obtain a new loyalty card, the upgrade process can be performed for the new loyalty card and prior loyalty card may be removed from user profile.

[024] **Figure 2** illustrates an exemplary representation for enrolling and using contactless upgrade loyalty cards in accordance with some embodiments of the present disclosure.

[025] Figure 2 shows an exemplary enrolment stage 201 for enrolling the loyalty card 109 for contactless upgrade and subsequent stage 203 for using the upgraded loyalty card 109 for any use cases.

[026] As shown, in the enrolment stage 201, an NFC sticker 204 may be acquired for the merchant store 101. The NFC sticker 204 may be obtained from the kiosk 103 or any alternate source as configured by merchant. The NFC sticker 204 may contain login details for the network of the merchant store 101. As shown, the NFC sticker may include Wi-Fi name and password for the merchant store 101. On receiving the NFC sticker 204, the user 107 may follow instructions as provided in the NFC sticker 204 and login to the software application on the mobile device 105. Following the login, the user 107 may apply the NFC sticker 204 at backside of the loyalty card 109 and tap at the mobile device 105 with the NFC sticker 204. On tapping, the software application on the mobile device 105 may either be accessed automatically, or a notification may be provided to the user 107 to open the software application associated with the merchant. Once the software application is accessed and the user 107 logs into user profile, the NFC sticker 204 may either be automatically scanned by the software application or may be prompted by the user 107 to scan the NFC sticker 204. On a successful scan, the NFC sticker 204 information is transmitted to the Wi-Fi network of the merchant store 101 via the mobile device 105 in order to verify the user details and assign the same to the merchant store and store details in server. Thus, creating a cryptographic pair between the NFC sticker 204, the merchant store 101 and the local network of the merchant store 101.

[027] Henceforth, in the subsequent stage 203, the upgraded loyalty card 109 may be utilized by the user 107 without using the mobile device 105 given the mobile phone or its connected wearable/IoT peers connect to the network of the merchant store (e.g. LAN) with the previously stored login details. The loyalty card 109 may be used in various cases by verifying the stored login details of the NFC sticker 204. For instance, the user 107 may approach checkout and register membership identity by tapping on locally connected device using membership ID lookup. In case, if the network of the merchant store does not see a corresponding authenticated device when the loyalty card is used for any action, it may consider that the user of the loyalty account holder is not present, and therefore may decline preferred or sensitive transactions such as, adding an item to the virtual basket, identity verification for loyalty, membership or payment and the like.

[028] Alternatively, in another scenario, the user 107 may checkout and identify products identified through shopping journey by tapping on reader device in the merchant store 101. The products can then be assigned for distribution, post checkout or saved for later by storing items against user account

linked to the software application. In another scenario, the user 107 may use the loyalty card 109 to assign payment credentials to enable the loyalty card 109 to initiate membership lookup and payment.

[029] **Figure 3** shows a flowchart illustrating a method of providing contactless upgrade for loyalty cards in accordance with some embodiments of the present disclosure.

[030] As illustrated in **Figure 3**, the method 300 comprises one or more blocks for providing contactless upgrade for loyalty cards. The method 300 may be described in the general context of computer executable instructions. Generally, computer executable instructions can include routines, programs, objects, components, data structures, procedures, modules, and functions, which perform specific functions or implement specific abstract data types.

[031] The order in which the method 300 is described is not intended to be construed as a limitation, and any number of the described method blocks can be combined in any order to implement the method. Additionally, individual blocks may be deleted from the methods without departing from the spirit and scope of the subject matter described herein. Furthermore, the method can be implemented in any suitable hardware, software, firmware, or combination thereof.

[032] At block **301**, the NFC sticker associated with the merchant is obtained. The NFC stickers may be obtained from the kiosk 103. In an embodiment, the kiosk 103 may be specific with merchant and located near the merchant store 101. The kiosk 103 may dispense NFC stickers from a secured location. The NFC sticker may include network details such as, Wi-Fi login and password for connecting to the local network of the merchant store 101. On obtaining the NFC sticker, the user 107 may apply the NFC sticker to the loyalty card 109.

[033] At block **303**, the loyalty card 109 with the NFC sticker is connected to the software application of the merchant and tapping the loyalty card with the NFC sticker to the mobile device 105. Alternatively, the user 107 may be required to access the software application manually in the mobile device 105 and tap the loyalty card 109 with the NFC sticker to the mobile device 105. On tapping the loyalty card with the NFC sticker, the NFC sticker is scanned by the mobile device 105.

[034] At block **305**, on a successful scan, details of the NFC sticker is transmitted via the software application to the local network of the merchant store 101 to verify user details and store NFC sticker details and password within local repository of the merchant store 101.

[035] At block **307**, the notification may be provided to the user on the mobile device 105 to join the network of the merchant store 101. On accepting the request, the loyalty card 109 is updated and the confirmation is provided to the user 107 via the software application. Thereupon, at any subsequent use of loyalty card 109, the loyalty card 109 may be used passively in numeral scenarios without utilising the mobile device 105 given the mobile phone or its connected wearable/IoT peers connect to the network of the merchant store (e.g. LAN) with the previously stored login details. For instance, the loyalty card 109 may be used to tap at any smart spot in order to add any product to a virtual basket available on software application, for later checkout, add a coupon to loyalty card, register for promotions, deals or sweepstakes in the merchant store 101, quickly identifying at checkout, if membership is required for checkout, pay in-store, if an open loop credential is associated with the loyalty account, and the like. In case, if the network of the merchant store does not see the corresponding authenticated device when the loyalty card is used for any action, it may consider that the user of the loyalty account holder is not present, and therefore may decline preferred or sensitive transactions such as, adding an item to the virtual basket, identity verification for loyalty, membership or payment and the like.

[036] **Figure 4** illustrates a block diagram of an exemplary computer system for implementing embodiments consistent with the present disclosure.

[037] In an embodiment, the computer system 400 may be mobile device 105, for providing contactless upgrade for loyalty. The computer system 400 may include a central processing unit (“CPU” or “processor”) 402. The processor 402 may comprise at least one data processor for executing program components for executing user or system-generated business processes. The processor 402 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.

[038] The processor 402 may be disposed in communication with one or more input/output (I/O) devices (412 and 413) via I/O interface 401. The I/O interface 401 may employ communication protocols/methods such as, without limitation, audio, analog, digital, stereo, IEEE-1394, serial bus, Universal Serial Bus (USB), infrared, PS/2, BNC, coaxial, component, composite, Digital Visual Interface (DVI), high-definition multimedia interface (HDMI), Radio Frequency (RF) antennas, S-Video, Video Graphics Array (VGA), IEEE 802.n /b/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) or the like), etc.

[039] Using the I/O interface 401, the computer system 400 may communicate with one or more I/O devices (412 and 413). In some implementations, the processor 402 may be disposed in communication with a communication network 409 via a network interface 403. The network interface 403 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. Using the network interface 403 and the communication network 409, the computer system 400 may be connected to the merchant store 101. The communication network 409 can be implemented as one of the several types of networks, such as intranet or any such wireless network interfaces. The communication network 409 may either be a dedicated network or a shared network, which represents an association of several 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 409 may include a variety of network devices, including routers, bridges, servers, computing devices, storage devices, etc.

[040] In some embodiments, the processor 402 may be disposed in communication with a memory 405 e.g., RAM, and ROM, etc. as shown in Figure 4, via a storage interface 404. The storage interface 404 may connect to memory 405 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.

[041] The memory 405 may store a collection of program or database components, including, without limitation, user/application, an operating system 407, a web browser 408, a user interface 406, and the like. In some embodiments, computer system 400 may store user/application data, such as the data, variables, records, etc. as described in this invention. Such databases may be implemented as fault-tolerant, relational, scalable, secure databases such as Oracle or Sybase.

[042] The operating system 407 may facilitate resource management and operation of the computer system 400. 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.).

[043] International Business Machines (IBM™) OS/2™, Microsoft Windows™ (XP™, Vista/7/8, etc.), Apple iOS™, Google Android™, Blackberry™ Operating System (OS), or the like. A user interface 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 400, such as cursors, icons, check boxes, menus, 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.), Unix X-Windows™, web interface libraries (e.g., ActiveX, Java, JavaScript, AJAX, HTML, Adobe Flash, etc.), or the like.

[044] 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.

[045] 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.

[046] 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.

[047] 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.

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

[049] The enumerated listing of items does not imply that any or all the items are mutually exclusive, unless expressly specified otherwise. The terms "a", "an" and "the" mean "one or more", unless expressly specified otherwise.

[050] A description of an embodiment with several components in communication with each other does not imply that all such components are required. On the contrary, a variety of optional components are described to illustrate the wide variety of possible embodiments of the invention.

[051] When a single device or article is described herein, it may be readily apparent that more than one device/article (whether they cooperate) may be used in place of a single device/article. Similarly, where more than one device or article is described herein (whether or not they cooperate), it may be readily apparent that a single device/article may be used in place of the more than one device or article or a different number of devices/articles may be used instead of the shown number of devices or programs. The functionality and/or the features of a device may be alternatively embodied by one or more other devices which are not explicitly described as having such functionality/features. Thus, other embodiments of the invention need not include the device itself.

[052] The illustrated operations of **Figure 3** show certain events occurring in a certain order. In alternative embodiments, certain operations may be performed in a different order, modified, or removed. Moreover, steps may be added to the above described logic and still conform to the described embodiments. Further, operations described herein may occur sequentially or certain operations may be processed in parallel. Yet further, operations may be performed by a single processing unit or by distributed processing units.

[053] 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.

A METHOD AND SYSTEM FOR PROVIDING CONTACTLESS UPGRADE FOR LOYALTY CARDS

ABSTRACT

The present disclosure relates to a method and system for providing contactless upgrade for loyalty cards. The method includes creating a cryptographic paired relationship between a loyalty card associated with a user, a network device associated with a merchant and merchant store. In order to create the cryptographic pair, the method includes providing a Near Field Communication (NFC) stickers specific to each merchant. The NFC sticker may include login details to connect to a network of the merchant store. The user may download an application associated with the merchant in order to login to the network of merchant store. On following the login, the NFC sticker may be applied on the loyalty card. The loyalty card may then be used to open corresponding mobile application of the merchant in the mobile device in order to scan the NFC sticker on the loyalty card. On successful scanning, data from the NFC sticker is transmitted via the application to the network of the merchant store to verify user details and assign the details and login details to the merchant store. Thereafter, a notification request may be provided to the user on the application to join the network of the merchant store. Once the user accepts the request, the loyalty card is upgraded, and a confirmation is provided to the user. Thereafter, at any subsequent visit to the merchant store, the loyalty card may be used passively without utilising mobile phone details given the mobile phone or its connected wearable/IoT peers connect to the network of the merchant store (e.g. LAN) with the previously stored login details.

1/5

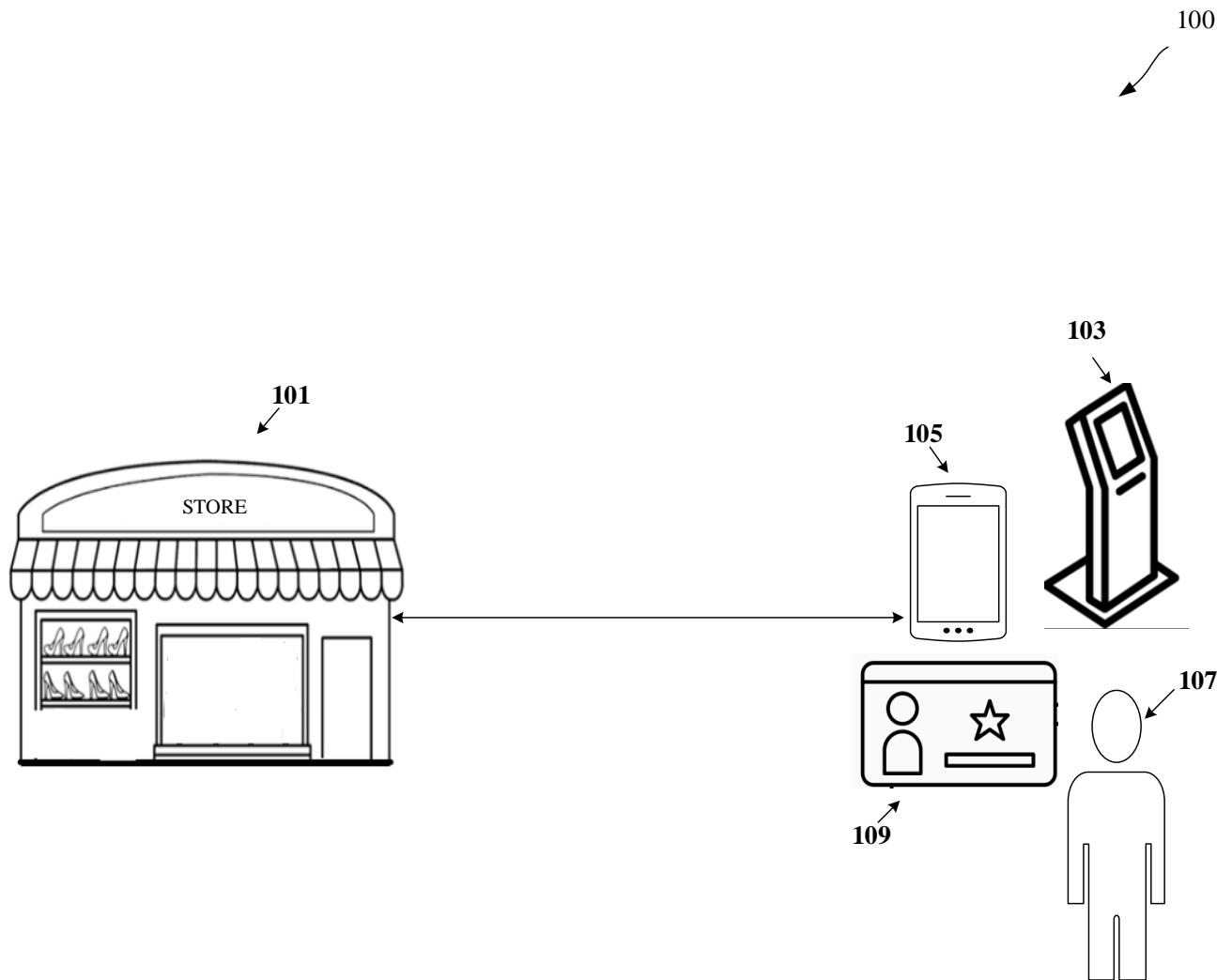


FIGURE 1A

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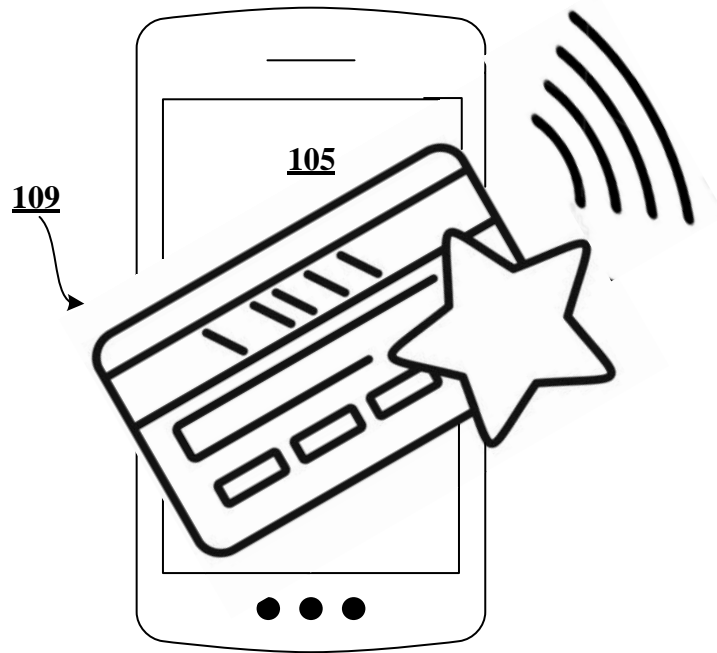


FIGURE 1B

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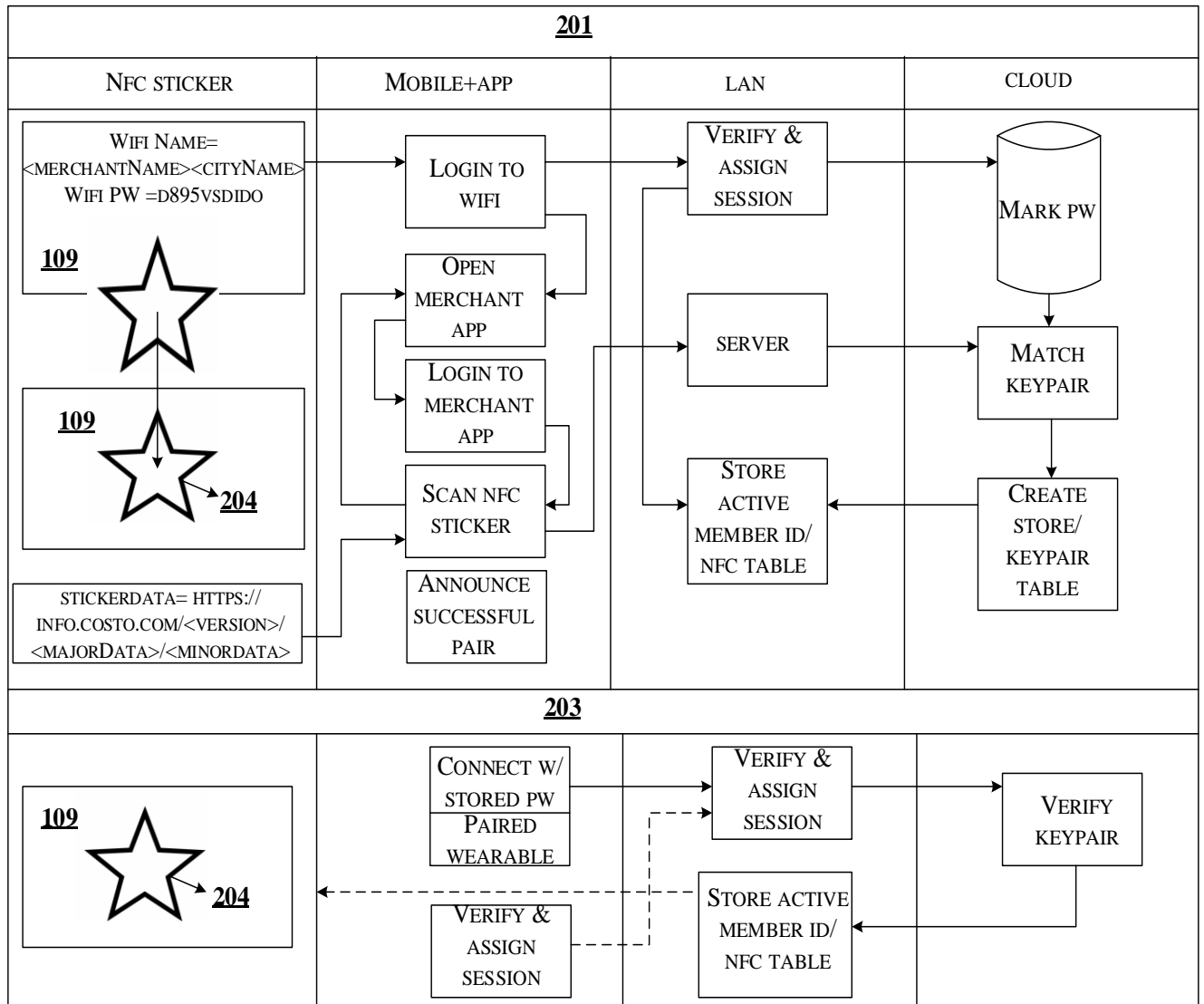


FIGURE 2

4/5

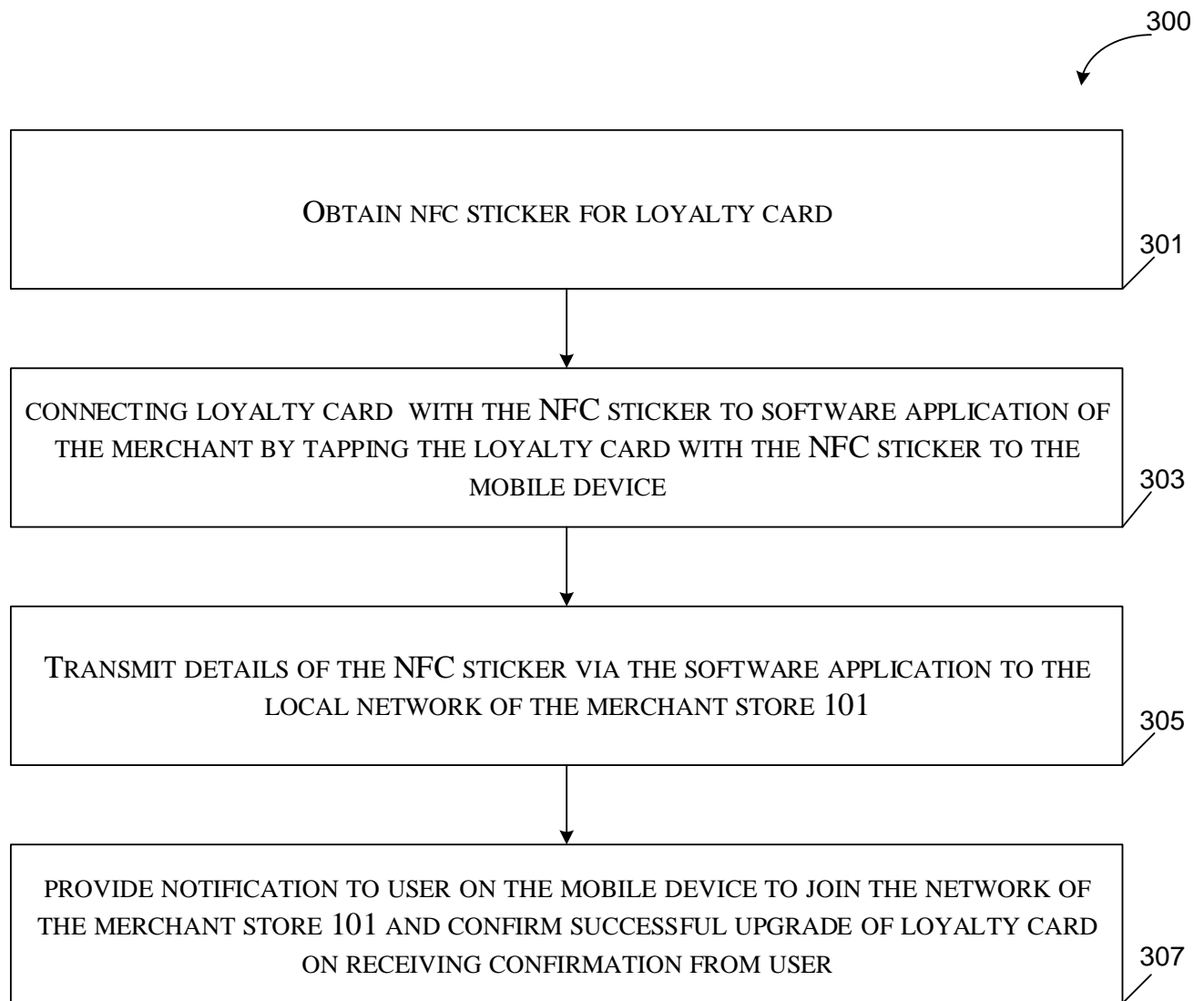


FIGURE 3

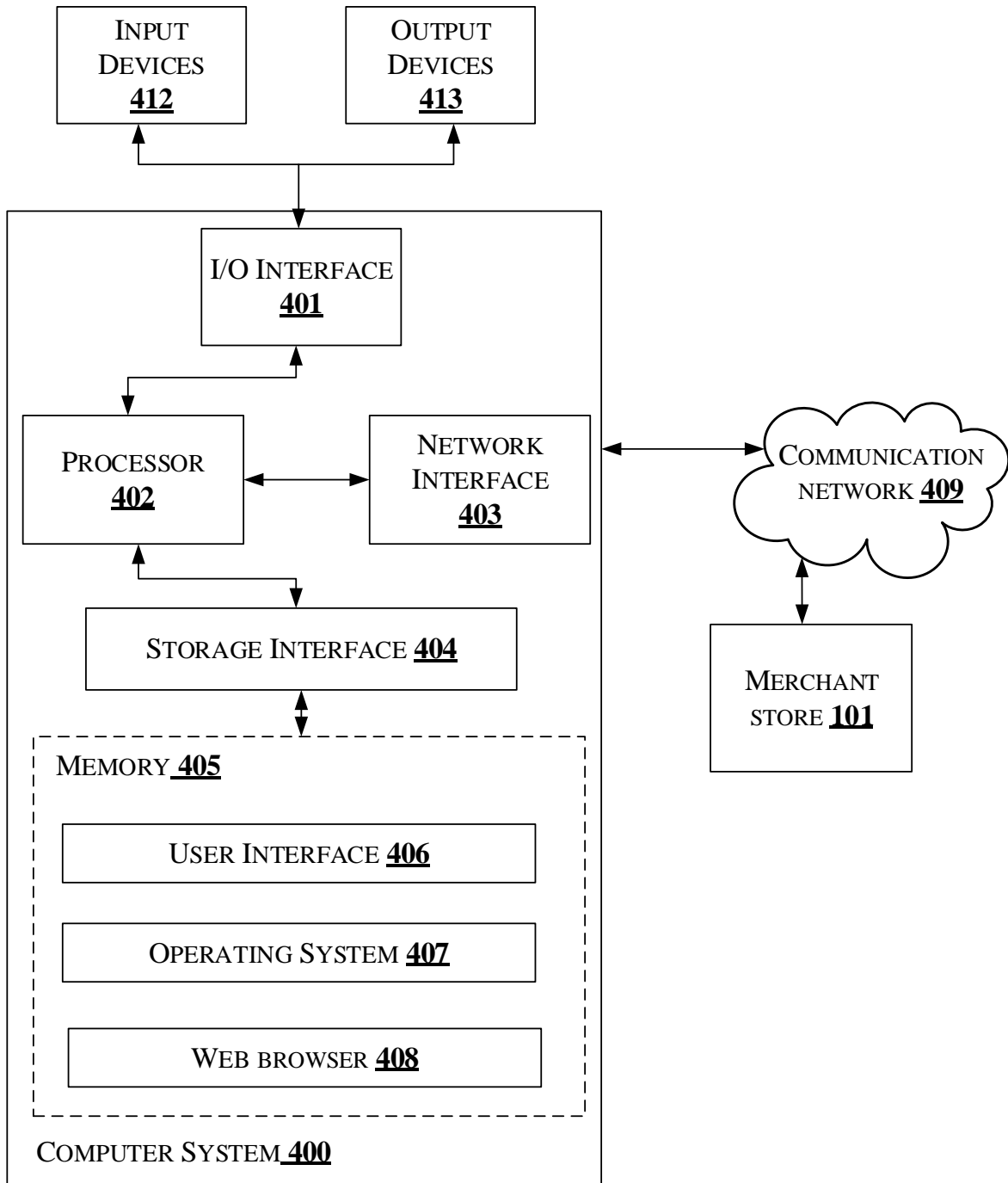


FIGURE 4