April 2022

TRANSACTION PROCESSING HOLD MANAGEMENT

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TITLE OF THE INVENTION

“TRANSACTION PROCESSING HOLD MANAGEMENT”

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Field of the Invention:

The present invention relates to transaction hold services, and particularly but not exclusively to a method for managing the hold transactions during the payment processing.

Background:

Generally, lifecycle of a transaction includes multiple events. For example, a transaction between a user device and a resource provider device can first include authorization or pre-authorization the transaction with a pre-defined amount with an authorizing entity (e.g., a first event). In this authorization or pre-authorization transaction, the pre-defined amount can be held in relation to an account associated with a user. In a subsequent event, the transaction can be completed via a clearing transaction provided to the authorizing entity requesting to complete the transaction and remove the held amount. A transaction lifecycle can consist of numerous events. All events share the same unique transaction identification, but each is a distinct event on its own.

However, in many instances, the amount held at the authorizing entity can differ from the amount cleared during the transaction. As an example, in a transaction that involves pre-authorizing a transaction with an unknown final transaction value (e.g., a transaction for fuel from a fuel station), the authorizing entity can hold a predetermined amount. In this example, the clearing transaction can differ from the held amount, resulting in an amount being held by the authorizing entity for a duration of time (e.g., 6 hours, one day), leading to a less pleasant user experience.

Summary:

In order to solve the above problems, the present invention provides the hold instructions to increase or decrease the hold amount based on the final transaction amount. The instructions are derived from a series of transaction matching criteria, keeping track of all events in the lifecycle including an ever changing hold balance. The present invention comprises an intermediary computer to monitor the events relating to a transaction and derive the hold instructions. The intermediary computer receives an authorization message relating to a transaction and processes the authorization message to identify the transaction and derive a hold instructions to modify a hold amount at an authorizing entity computer; and transmitting an authorization request message to the authorizing entity computer, where the authorization request message includes a transaction identifier identifying the transaction, event identifier identifying the event corresponding to the transaction, transaction hold balance, event history and the hold management instruction.

One embodiment of the invention is directed to a method of managing hold instructions for a transaction. The method can include receiving an authorization message relating to a transaction. The method can also include processing the authorization message to identify the transaction and derive a hold management instruction to modify a hold amount at an authorizing entity computer. The method can also include transmitting an authorization request message to the authorizing entity computer. The authorization request message can include a transaction identifier identifying the transaction and the hold management instruction.

The foregoing summary is illustrative only and is not intended to be in any way limiting. In addition to the illustrative aspects, embodiments, and features described above, further aspects, embodiments, and features will become apparent by reference to the drawings and the following detailed description.

Description of Drawings:

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. The same numbers are used throughout the figures to reference like features and components. Some embodiments of device and/or methods in accordance with embodiments of the present subject matter are now described below, by way of example only, and with reference to the accompanying figures.

Figure 1 illustrates the block diagram for managing hold services in accordance with some embodiments of the present invention.

Figure 2 illustrates the flow process for managing hold services in accordance with some embodiments of the present invention.

It should be appreciated by those skilled in the art that any block diagrams herein represent conceptual views of illustrative systems embodying the principles of the present subject matter. Similarly, it will be appreciated that any flowcharts, flow diagrams, state transition diagrams, pseudo code, and the like represent various processes which may be substantially represented in computer readable medium and executed by a computer or processor, whether or not such computer or processor is explicitly shown.

Detailed Description:

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.

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 alternatives falling within the scope of the disclosure.

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 system or apparatus proceeded by “comprises… a” does not, without more constraints, preclude the existence of other elements or additional elements in the system or method.

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.

Embodiments of the invention are directed to methods and systems for managing transaction hold services. One embodiment of the invention is directed to a method of managing hold instructions for a transaction. The method can include receiving an authorization message relating to a transaction. The method can also include processing the authorization message to identify the transaction and derive a hold management instruction to modify a hold amount at an authorizing entity computer. The method can also include transmitting an authorization request message to the authorizing entity computer. The authorization request message can include a transaction identifier identifying the transaction and the hold management instruction.

Another embodiment of the invention is directed to a system for managing hold transaction instruction for a transaction. The system includes an intermediary computer as described herein that can monitor events relating to a transaction and derive hold instructions (e.g., increase or decrease a hold amount at an authorizing entity computer based on the events including a transaction lifecycle running balance. For instance, an event relating to a transaction can be processed to identify a transaction relating to the event and a transaction identifier (e.g., a lifetime transaction ID) and an event identifier (e.g., processor transaction identifier) can be associated with the event. The hold instructions can be sent as part of a message payload in an authorization request message (e.g., a ISO 20022 message) to the authorizing entity computer.

Prior to discussing specific embodiments of the invention, some terms may be described in detail.

Communication Device: A "communication device" may include any suitable device that can allow for communication with an external entity. A communication device may be a mobile device if the mobile device has the ability to communicate data to and from an external entity.

Mobile Device: A "mobile device" may comprise any suitable 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, net books, laptop computers, personal music players, hand-held specialized readers, etc. Further examples of mobile devices include wearable devices, such as smart watches, fitness bands, ankle bracelets, rings, earrings, etc., as well as automobiles with remote communication capabilities. 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 modem — both devices taken together may be considered a single mobile device).

Payment Device: A "payment device" may include any suitable device that may be used to conduct a financial transaction, such as to provide payment credentials to a merchant. The payment device may be a software object, a hardware object, or a physical object. As examples of physical objects, the payment device may comprise a substrate such as a paper or plastic card, and information that is printed, embossed, encoded, or otherwise included at or near a surface of an object. A hardware object can relate to circuitry (e.g., permanent voltage values), and a software object can relate to nonpermanent data stored on a device. A payment device may be associated with a value such as a monetary value, a discount, or store credit, and a payment device may be associated with an entity such as a bank, a merchant, a payment processing network, or a person. A payment device may be used to make a payment transaction. Suitable payment devices can be hand-held and compact so that they can fit into a user's wallet and/or pocket (e.g., pocket-sized). Example payment devices may include smart cards, magnetic stripe cards, keychain devices (such as the Speed pass TM commercially available from Exxon-Mobil Corp.), etc. Other examples of mobile devices include pagers, payment cards, security cards, access cards, smart media, transponders, and the like. If the payment device is in the form of a debit, credit, or smartcard, the payment device may also optionally have features such as magnetic stripes. Such devices can operate in either a contact or contactless mode. In some embodiments, a mobile device can function as a payment device (e.g., a mobile device can store and be able to transmit payment credentials for a transaction).

Credential: A "credential" may be any suitable information that serves as reliable evidence of worth, ownership, identity, or authority. A credential may be a string of numbers, letters, or any other suitable characters, as well as any object or document that can serve as confirmation. Examples of credentials include value credentials, identification cards, certified documents, access cards, passcodes, and other login information, etc.

Value Credential: A "value credential" may be information associated with worth. Examples of value credentials include payment credentials, coupon identifiers, information needed to obtain a promotional offer, etc.

Payment credentials: The "Payment credentials" may include any suitable information associated with an account (e.g., a payment account and/or payment device associated with the account). Such information may be directly related to the account or may be derived from information related to the account. Examples of account information may include a PAN (primary account number or "account number"), username, expiration date, CVV (card verification value), dCVV (dynamic card verification value), CVV2 (card verification value 2), CVC3 card verification values, etc. CVV2 is generally understood to be a static verification value associated with a payment device. CVV2 values are generally visible to a user (e.g., a consumer), whereas CVV and dCVV values are typically embedded in memory or authorization request messages and are not readily known to the user (although they are known to the issuer and payment processors). Payment credentials may be any information that identifies or is associated with a payment account. Payment credentials may be provided in order to make a payment from a payment account. Payment credentials can also include a username, an expiration date, a gift card number or code, and any other suitable information.

Application: An "application" may be computer code or other data stored on a computer readable medium (e.g., memory element or secure element) that may be executable by a processor to complete a task.

User: A "user" may include an individual. In some embodiments, a user may be associated with one or more personal accounts and/or mobile devices. The user may also be referred to as a cardholder, account holder, or consumer.

Resource Provider: A "resource provider" may be an entity that can provide a resource such as goods, services, information, and/or access. Examples of resource providers include merchants, access devices, secure data access points, etc. A "merchant" may typically be an entity that engages in transactions and can sell goods or services or provide access to goods or services.

Acquirer: An "acquirer" may typically be a business entity (e.g., a commercial bank) that has a business relationship with a particular merchant or other entity. Some entities can perform both issuer and acquirer functions. Some embodiments may encompass such single entity issuer-acquirers. An acquirer may operate an acquirer computer, which can also be generically referred to as a "transport computer".

Authorizing entity: An "authorizing entity" may be an entity that authorizes a request. Examples of an authorizing entity may be an issuer, a governmental agency, a document repository, an access administrator, etc. An "issuer" may typically refer to a business entity (e.g., a bank) that maintains an account for a user. An issuer may also issue payment credentials stored on a user device, such as a cellular telephone, smart card, tablet, or laptop to the consumer.

Access Device: An "access device" may be any suitable device that provides access to a remote system. An access device may also be used for communicating with a merchant computer, a transaction processing computer, an authentication computer, or any other suitable system. An access device may generally be located in any suitable location, such as at the location of a merchant. An access device may be in any suitable form. Some examples of access devices include POS or point of sale devices (e.g., POS terminals), cellular phones, PDAs, personal computers (PCs), tablet PCs, hand-held specialized readers, set-top boxes, electronic cash registers (ECRs), automated teller machines (ATMs), virtual cash registers (VCRs), kiosks, security systems, access systems, and the like. An access device may use any suitable contact or contactless mode of operation to send or receive data from, or associated with, a user mobile device. In some embodiments, where an access device may comprise a POS terminal, any suitable POS terminal may be used and may include a reader, a processor, and a computer-readable medium. A reader may include any suitable contact or contactless mode of operation. For example, exemplary card readers can include radio frequency (RF) antennas, optical scanners, bar code readers, or magnetic stripe readers to interact with a payment device and/or mobile device. In some embodiments, a cellular phone, tablet, or other dedicated wireless device used as a POS terminal may be referred to as a mobile point of sale or an "mPOS" terminal.

Authorization Request Message: An "authorization request message" may be an electronic message that requests authorization for a transaction. In some embodiments, it is sent to a transaction processing computer and/or an issuer of a payment card to request authorization for a transaction. An authorization request message according to some embodiments may comply with ISO 8583, which is a standard for systems that exchange electronic transaction information associated with a payment made by a user using a payment device or payment account. The authorization request message may include an issuer account identifier that may be associated with a payment device or payment account. An authorization request message may also comprise additional data elements corresponding to "identification information" including, by way of example only: a service code, a CVV (card verification value), a dCVV (dynamic card verification value), a PAN (primary account number or "account number"), a payment token, a username, an expiration date, etc. An authorization request message may also comprise "transaction information," such as any information associated with a current transaction, such as the transaction amount, merchant identifier, merchant location, acquirer bank identification number (BIN), card acceptor ID, information identifying items being purchased, etc., as well as any other information that may be utilized in determining whether to identify and/or authorize a transaction.

Authorization Response Message: An "authorization response message" may be a message that responds to an authorization request. In some cases, it may be an electronic message reply to an authorization request message generated by an issuing financial institution or a transaction processing computer. The authorization response message may include, by way of example only, one or more of the following status indicators: Approval -- transaction was approved; Decline -- transaction was not approved; or Call Center -- response pending more information, merchant calls the toll-free authorization phone number. The authorization response message may also include an authorization code, which may be a code that a credit card issuing bank returns in response to an authorization request message in an electronic message (either directly or through the transaction processing computer) to the merchant's access device (e.g., POS equipment) that indicates approval of the transaction. The code may serve as proof of authorization. As noted above, in some embodiments, a transaction processing computer may generate or forward the authorization response message to the merchant.

Server Computer: A "server computer" may include a powerful computer or cluster of computers. For example, the server computer can be a large mainframe, a minicomputer cluster, or a group of servers functioning as a unit. In one example, the server computer may be a database server coupled to a Web server. The server computer may be coupled to a database and may include any hardware, software, other logic, or combination of the preceding for servicing the requests from one or more client computers. The server computer may comprise one or more computational apparatuses and may use any of a variety of computing structures, arrangements, and compilations for servicing the requests from one or more client computers.

Figure 1 illustrates the block diagram for managing hold services. Figure 1 comprises of an intermediary computer (101) that receives an authorization message from the network (102). After receiving the authorization message, the intermediary computer (101) identifies the transaction and derives the hold instructions. The intermediary computer (101) then transmits an authorization request message to the authorizing entity computer (103), where the authorization request message includes a transaction identifier, event identifier and hold instructions.

In another embodiment, the intermediary computer (101) comprises a transaction matching (104) to match the transaction and a transaction aging (105) determines the lifetime of a transaction. Based on transaction and lifetime of the transaction, the cumulative balance (106) which includes the hold amount to be held on the available balance for the user after each transaction, the hold management instructions (107) provide the instructions to decrease or increase the hold amount.

In another embodiment, the intermediary computer (101) can receive an authorization request from a network. If the authorizing entity computer (103) is configured for hold management, the intermediary computer (101) can calculate a hold amount based on the transaction type (debit/credit). Keep track of event leading to current status (breadcrumbs) and transaction amount and compile the hold instructions. The intermediary computer (101) can send the transaction message payload to the authorizing entity computer (103) which not only include all the details of the transaction, but also the hold management instructions (107). The authorizing entity computer (103), after confirming available funds or other checks, approves or declines the transaction and respond back to the intermediary computer. If the transaction is approved, the authorizing entity computer (103) can adjust the hold amounts on the cardholder's account based on the instructions received. With a new authorization, a new hold can be registered with the associated processor ID and hold amount. The intermediary computer (101) can receive an completion, incremental authorizations, updated clearing or reversal message or age off a transaction and sends that to the authorizing entity computer (103). If it is an incremental authorization, the hold amount can increase. If it is a completion message, the hold amount can increase or decrease. If it is a clearing message, the hold amount can decrease. If a transaction ages off, the hold amount can be cleared with the remaining hold amount balance. Credit transactions can also be dealt with in a similar manner. The hold information can be sent to the authorizing entity computer (103) along with the transaction message details.

In an embodiment, the intermediary computer (101) identifies whether a received authorization request corresponds to a transaction. For example, the intermediary computer (101) identifies a transaction that corresponds to a received clearing transaction request. This can be performed by comparing features of the received authorization request with features of a plurality of transactions. For example, the intermediary computer (101) can identify a transaction with a common transaction time, location, amount, etc.

The intermediary computer (101) uses several data elements to help match transactions in order to identify if it is an incremental authorization, a partial of full clearing, a partial or full reversal, etc. Data elements used to do matching can include a local transaction date, a local transaction time, a lifecycle transaction identifier, a primary account number/cardholder number (PAN), an acquiring institution identification code, a card acceptor identification code, a terminal identifier, and/r system trace audit number/receipt number.

In other embodiment, the intermediary computer (101) can process the received event and transaction data to generate a transaction identifier, event identifier, and hold instructions. The intermediary computer (101)pay can provide the generated data to the authorizing entity computer (103) in an authorization request message to modify a user account based on the hold instructions..#The transaction message payload includes the details with the generated data including but not limited to the transaction balance, transaction identifiers, transaction history and if it increase/decrease or erase the hold. The instructions are not tied to a specific ISO message standard.

In another embodiment, the intermediary computer (101) can continuously evaluate if the transaction has expired. If the transaction has expired, the intermediary computer (101) sends a request to release any remaining hold amounts and send an instruction to the authorizing entity computer (103). In an embodiment all transactions can include a time-to-live.

In another embodiment, the hold management instructions (107) instruct the authorizing entity computer (103) to increase or decrease the amount that needs to be reserved. With instruction to the authorizing entity computer (103), the available balance can be adjusted for that transaction lifecycle, allowing the cardholder to have funds available to transact again. With the authorizing entity computer (103) being able to timely manage funds, the user experience is better as funds can be released for additional transactions.

In other embodiment, the hold management instructions (107) are communicated to the authorizing entity computer (103) via a series of unique instruction details embedded in the payload. Depending on the interface, it can be embedded in fields or objects with an Instruction what to do.

In other embodiment, the cumulative balance (106) includes a hold balance for the transaction lifecycle that shows an authorizing entity computer (103) an amount that should still be held on the available balance for the user after each transaction. The balance instruction can include a zero amount when the transaction is being cleared or aged off.

In other embodiment, when an authorization transaction is received for a post-on-clearing model, the available balance of the cardholder may be affected. The ledger balance of the cardholder may be unaffected, but the transaction amount of the transaction can be put into a pending state, effectively reserving the transaction amount until the transaction is cleared or completed.

In another embodiment, the events can relate to transactions occurring in a split shipment transaction. For instance, responsive to a portion of a transaction being executed, the hold instructions can reduce the hold amount by an amount corresponding with the portion of the transaction being executed.

A hold instruction can instruct the authorizing entity computer (103) in how to modify a pending hold balance of a user (e.g., a cardholder). Example labels for hold management instructions (107) can include DEBIT_HOLD_INCREASE (to increase the pending amount by reducing the cardholder available balance), DEBIT_HOLD DECREASE (to decrease the pending amount by increasing the cardholder available balance), CREDIT PENDING (where a credit transaction is pending), CREDIT_POST (where a credit transaction has posted and increase a ledger balance).

An example of DEBIT_HOLD_INCREASE instructions can be as follows:

Scenario: An Authorization (0100) request for a transaction for €100.00 is received with 50c fee.

```
"HoldManagement" : [
  {
    "HoldInstruction" : "DEBIT_HOLD_INCREASE",
    "Amt" : 100.5,
    "HoldBalanceAmt" : 100.5
  },
```

An example of DEBIT_HOLD_DECREASE instructions can be as follows:

Scenario: A Clearing (0220) request for a transaction for €90.00 is received. Original Authorization €100.00 with 50c fee.

```
    "HoldManagement" : [
      {
        "HoldInstruction" : "DEBIT_HOLD_DECREASE",
        "Amt" : 90.0,
        "HoldBalanceAmt" : 10.5
      },
```

An example of a lifecycle history instructions can be as follows

```
{
    "DPSProcessorData" : {
    "TxLedger" : [
      {
        "Tp" : "00",
        "MTI" : "AUTH_REQUEST",
        "SubType" : "ORIGINAL",
        "ProcessorTransactionId" : "00024689d1f57e2f-8a5b-4936-a59d-04b523e71b22",
        "LifeCyclId" : "381194667340004",
        "TxAmt" : 100.0,
        "CrdhldrBllgAmt" : 102.5
        },
      {
        "Tp" : "00",
        "MTI" : "AUTH_REQUEST",
        "SubType" : "INCREMENTAL",
        "ProcessorTransactionId" : "00027356782bf155-0be1-4e20-aff4-76b28120492d",
        "LifeCyclId" : "381194667340004",
         "CreDtTm" : "2021-04-03T06:27:23.608Z",
        "TxAmt" : 50.0,
        "CrdhldrBllgAmt" : 152.5
      },
      {
        "Tp" : "21",
        "MTI" : "REVERSAL_ADVICE",
        "SubType" : "PART-REVERSAL",
        "ProcessorTransactionId" : "000273578eb3acc6-51f4-4faf-8751-d9be165f33df",
        "LifeCyclId" : "381194667340004",
        "CreDtTm" : "2021-04-03T06:27:23.608Z",
        "TxAmt" : 75.0,
        "CrdhldrBllgAmt" : 76.5
      },
      {
        "Tp" : "02",
        "MTI" : "AUTHORISATION_ADVICE",
        "SubType" : "CLEARING",
        "ProcessorTransactionId" : "000383578eb3acc6-62f5-7faf-6851-d7be143g22ac",
        "LifeCyclId" : "381194667340004",
        "CreDtTm" : "2021-04-04T08:44:21.507Z",
        "TxAmt" : 74.0,
            "CrdhldrBllgAmt" : 74.5
          }
        ]
      }
    }
```

For example, as a first illustrative example, a user can provide a user device to an access device to request pre-authorization for a transaction (e.g., for fuel from a fuel station) with an unknown final amount. In response, the intermediary computer (101) can provide instructions for a pre-defined amount (e.g., $100) to be held for a time duration (e.g., 8 hours) by the authorizing entity computer (103). The intermediary computer (101) provides a transaction identifier identifying the transaction and an event identifier identifying the event (e.g., the pre-authorization of the transaction). The intermediary computer (101) can provide a first authorization request message to the authorizing entity computer (103) that includes the transaction identifier, the event identifier, and a hold instruction (e.g., hold the pre-defined amount of $100).

In this example, at a second time, the intermediary computer (101) receives a clearing transaction with a transaction amount (e.g., $80). The intermediary computer (101) can match the event with the transaction and generate hold instructions to lower the hold amount by the transaction amount (e.g., $80). The intermediary computer (101) can provide a second authorization request message to the authorizing entity computer (103) that includes the transaction identifier, a second event identifier, and a hold instruction (e.g., reduce the hold to the transaction amount of $80). In this example, as a result, the hold amount can be reduced to $20.

A third event in this example can include determining that a time duration has expired. Responsive to the time expiring, the intermediary computer (101) can provide a third authorization request message to the authorizing entity computer (103) that includes the transaction identifier, a third event identifier, and a hold instruction (e.g., remove the remaining hold amount of $20). In this example, as a result, the entire hold amount can be removed.

A lifecycle transaction identifier can identify a transaction including one or more events. Example events can include an authorization event (e.g., a request for a specific transaction type and amount modifying the pending balance), a completion event (e.g., an adjustment to the original authorization to decrease the authorized amount and modifying the pending balance), an incremental authorization event (e.g., an increase to the original authorization amount modifying the pending balance), a clearing event (e.g., the final settlement amount that needs to be cleared and affects the cardholder balance), etc. For the duration of the transaction, the transaction identifier can be shared by all of these events. The transaction identifier may not change for each event but can remain consistent in order to tie the transactions together. For instance, for each event occurring within the lifecycle of a transaction, the intermediary computer (101) can create a unique event identifier (e.g., a processor transaction identifier) that distinguishes the event from other events with the same lifecycle transaction identifier.

An example of a processor transaction identifier may be as follows:

```
"ProcessorTransactionld”: "000257010149b341-67e4-4714-bf4f-86b04f8b3f58"
```

A collection of event identifiers (e.g., a processor transaction ID collection) can include a collection of events that are part of the same lifecycle transaction identifier and can also show the type of event (request or advice) that was previously approved. This allows for the authorizing entity computer (103) to tie all events together that preceded the current transaction event. An example of a processor transaction ID collection can be as follows:

An example of Transaction Identification instructions can be as follows:

```
"ProcessorTxId" : {
    "ProcessorLifeCycleId" :
"ec32281Db10314b73a40aeb5f3d8feae745e5aa58977c8aaca63731688d87a277",
    "ProcessorEventId" : "00027078dfa4e5b4-3750-4fd6-b8a2-e5fcd279f009",
}
```

Figure 2 illustrates an example flow process for managing hold services. In figure 2 the user can provide user device details to a merchant device (201) (e.g., an access device) to initiate a transaction. . In an embodiment, the user initiates the transaction through a point of sale (201) at merchant. After initiating the transaction, the merchant acquirer (202) processes the transaction through the acquiring bank by placing the authorization request to the issuer bank. When the issuer bank approves the request, the issuer bank connects to Debit Processing Service (DPS) Forward (204) through the network (203). In an embodiment the network (203) may be Visa network. DPS forward (204) is a digital issuer processing platform that contains a processor (204a) to process the host services. The host services (204b) include hold management service (204d) which performs hold management transactions by using hold management instructions that are stored in the hold management database(204e). The DPS

Forward Host Interface (204c) forwards the transaction data to the intermediary computer (101) and derives the hold instructions and provides it to the authorizing entity computer (103).

In another embodiment, if the issuer declines the authorization, the Hold Management Services (204d) close down the pending transaction and remove it from active transactions. In the event that an Issuer responds with a partial Approval, the Hold Management Services (204d) with updated the Pending balance database in order to correctly supply subsequent instructions and balances.

Abstract:

The present invention relates to a transaction hold management service. The present invention comprises an intermediary computer (101) to monitor the events relating to a transaction and derive the hold instructions. The intermediary computer (101) receives an authorization message relating to a transaction and processes the authorization message to identify the transaction and derive a hold instructions to modify a hold amount at an authorizing entity computer (103) , where the hold instructions performs increasing or decreasing the hold amount based on the final transaction amount; and transmitting an authorization request message to the authorizing entity computer (103) , where the authorization request message includes a transaction identifier identifying the transaction, event identifier identifying the event and the hold instruction indicating the increased or decreased hold amount.

#

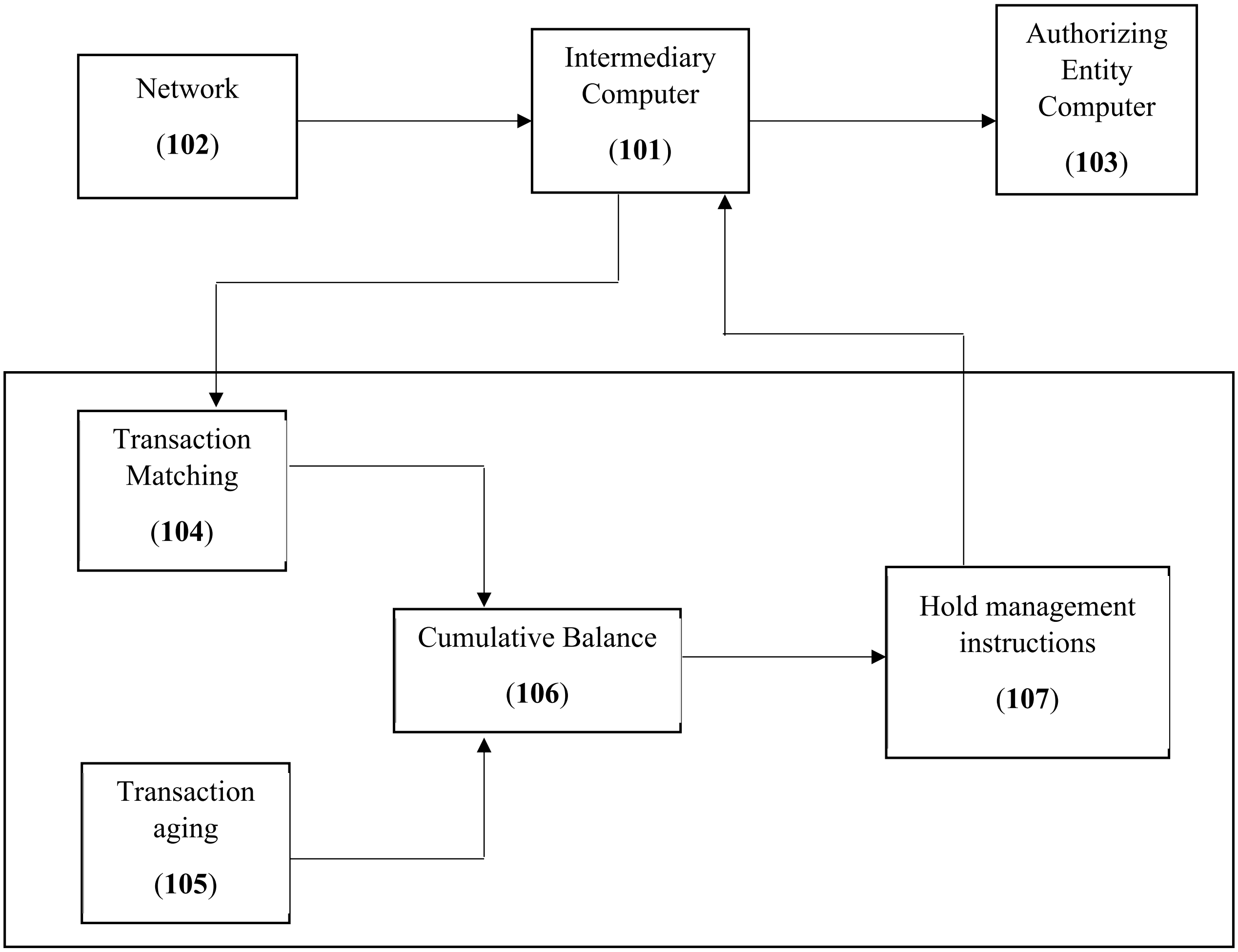
Network
(102)
Intermediary
Computer
(101)
Authorizing
Entity
Computer
(103)
Transaction
Matching
(104)
Cumulative Balance
(106)
Hold management
instructions
(107)
Transaction
aging
(105)

Figure 1

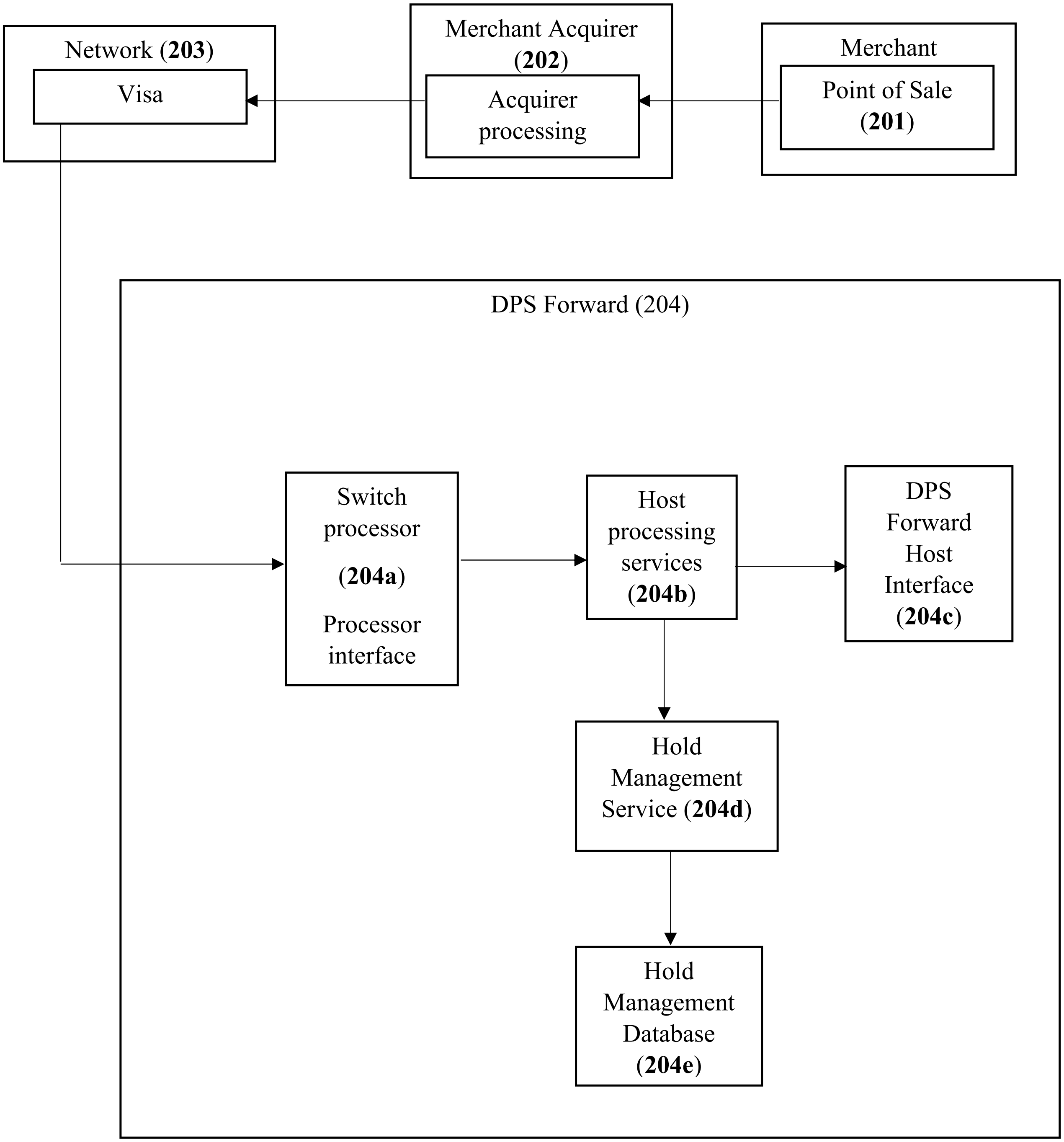
Network (203)
Visa
Merchant Acquirer (202)
Acquirer processing
Merchant
Point of Sale (201)
DPS Forward (204)
Switch processor (204a) Processor interface
Host processing services (204b)
DPS Forward Host Interface (204c)
Hold Management Service (204d)
Hold Management Database (204e)

Figure 2