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Shanghai Hongchuang WEB Technology Service Co., Ltd.
Tian Guorong
Curtis Young

HIEP: HTB Internet E-Wallet Protocol
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Abstract:

This document describes an online-paying method that realizes the paying addressing on the basis of HTTP protocol. It is for the purpose to setup a normative and safe E-paying system standard, and specify the definition of E-paying.

And in this new version, we name this e-payment as HART pay and explained how the HART pay works in the bank systems.

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1. Introduction

Till now, there's no one paying addressing language to realize the online paying or data set's interoperating that COULD be used for definite or name of E-currency's widely used. Under the promoting by W3C, the future generation WEB of the semantic web is defined as "the WEB concept structure which COULD be handled directly by the machine". On the background of this technology, this ID describes an E-currency paying public infrastructure of the bank pre-positive system in the field of e-paying.

Explanation of Nouns:

Hart main account: Hart account platform within the account, refers to the domain name of Hart.

Hart bank main account (Collection): Hart main account in the bank account corresponding to the open account which is a main account.

Hart bank accounts (payment): Hart main account in the bank under the corresponding bank account of sub-account.

2. Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMENDED", "MAY", AND "OPTIONAL" in this document are to be interpreted as described in RFC-2119[RFC2119]. In this document, these words will appear with that interpretation only when in ALL CAPS. Lower case uses of these words are not to be interpreted as carrying RFC-2119 significance.

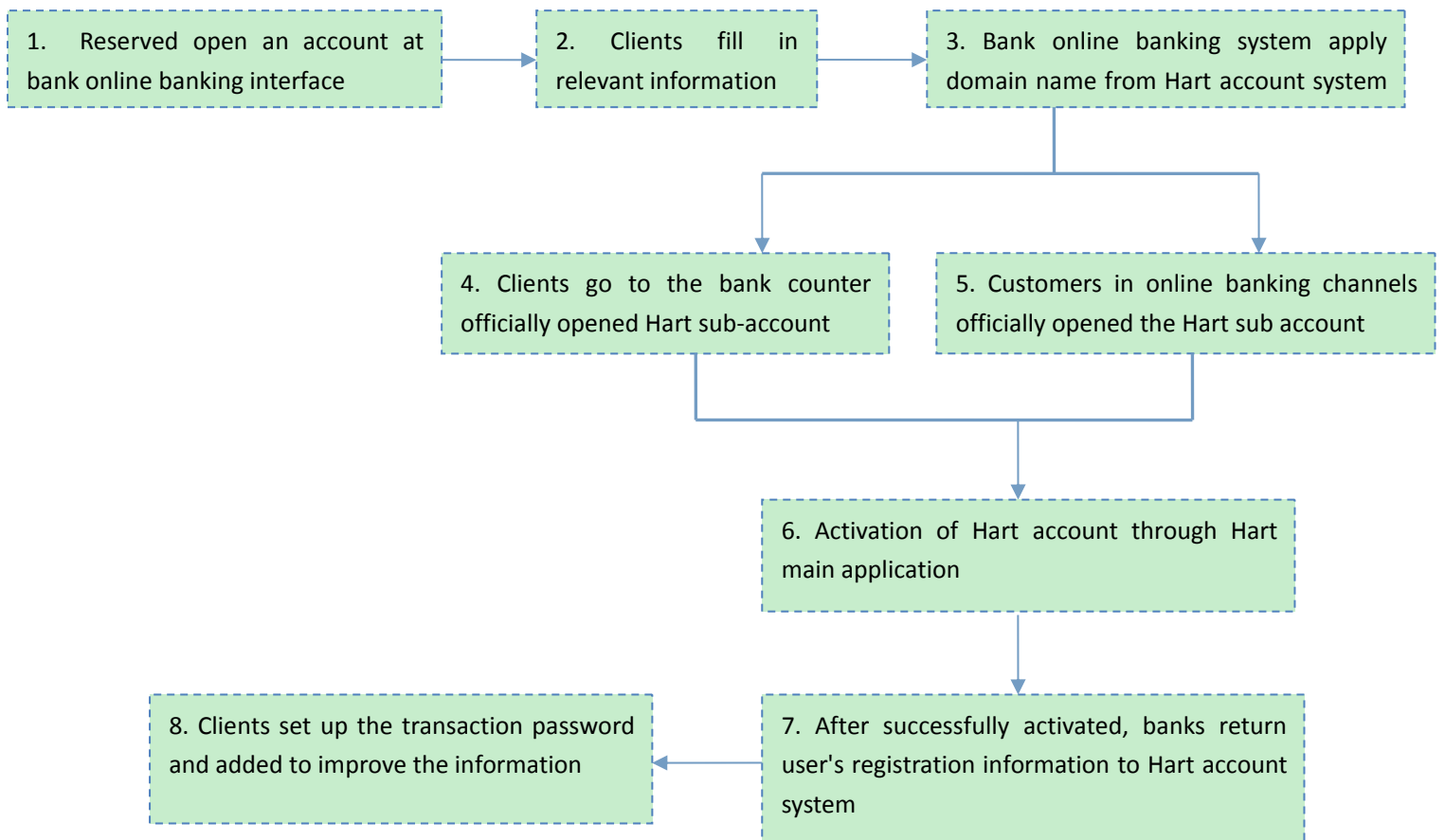
3. HIEP Problem Statements

At present, differentiation of the payment communication and system structure are formed by independent bank organizations or 3rd party payment company's leading position, that they are using different payment models to describe the objects, and formulate each standard. Those standards just extend the life time of each existed systems, instead ensure the data exchange or dataset's interoperation between different paying systems. Obviously, it will restrict the application field online paying, and it COULD not reach the ability and technique of handling the paying activities of all kinds of bank cards.

The real-time of paying is finally a bottleneck problem of the E-business development. Without solving this problem, furthermore, it will bring the unsafe hidden trouble on the capital operation. For the time being, we can only say in own scope utmost, as it only can realize the online paying with safe within each own system. It cannot make the real-time online paying, and can not reach the comprehensive integration of huge scale (supranational, super-region, super-section).

Currency's credit: The currency is a credit symbol of paying, people trust it to make it as the intermediation of substitution. It is accepted by the social due to its characteristic advantage comparing the metal money on "Gold Standard System" or "Silver Standard System". Obviously, the symbol in virtual paying organizations transaction MUST use a unique identifier, which COULD make into a definition when people using. This is the credit problem in the paying procedure.

4. Business Process Description
4.1 Hart domain name registration



Opening Hart bank account in online banking channels or counter.

In the bank account when activated by binding mobile phone number for identity authentication.

When opening of the bank sent to the Hart account platform registration information.

4.2 Hart account sign up process

Hart domain named specification

Distinguishing Bank

Regional ownership

Network ownership

4.3 Personal Hart domain name registration:

The user's personal domain name registration Hart is mainly used for consumption and payment, the application MUST have communication bank debit card or credit card, used for authentication and binding domain, at the same time, as the default payment clearing account. Supporting counter registered and electronic channel registered in two ways.

4.4 Personal counter registration:

Individual clients need Hart domain name main card handle Hart domain name registration at communication bank outlets counter. Signing up tripartite paper agreement and the application form (to provide the main card number, follow Hart domain name, related documents and information, contact information, including mobile phone Telephone, e-mail address) of Hart domain name, after that counter need to check the main card number and identity, and then to handle business registration. Counter system sends domain registration information to Hart system banking front platform system and call the domain name registration interface, authentication domain name uniqueness. If the transaction is successful, print Hart domain name registration receipt, under individual clients' custody after business chop, individual clients with this receipt can handle to activate domain name at Hart official website.

4.5 Personal electronic channel registration:

Personal clients need to open personal online banking or mobile banking, and with Hart domain name card in my personal online banking or mobile banking self-service Hart domain name registration, after signing up tripartite electronic agreement, first to authentication on the first page, and then enter the main card number、 trading password and online banking associated password, and then to enter Hart domain name application form page (to provide compliance Hart domain name specification domain name relevant documents information, mobile phone, telephone and email address.), the online banking system of the main card number to check the password and related identity verification after the registration of non-paper registration services. Personal clients in the online banking system can apply for domain name to send a real-time domain name detection to confirm the application uniqueness domain name, after the page submitted, online banking system automatically sends to Hart system bank front platform system and to call registration of domain name interface, and verify the uniqueness domain name. If the transaction is successful, to generate Hart domain name electronic receipt, individual clients with

this receipt can handle to activate domain name at Hart official website.

4.6 Bank enterprise Hart domain name registration:

Enterprises register Hart domain name is mainly used for an access application businesses, the application MUST have communication bank settlement accounts (hereinafter referred to as Hart domain name account) for enterprise authentication and authorization binding domain, at the same time, as the default payment clearing account to support counter registered and electronic channels.

4.7 Business enterprises counter registration:

Enterprise clients need Hart domain name main account handle Hart domain name registration at communication bank outlets counter. Signing up tripartite paper agreement and the application form (to provide the main card number, follow Hart domain name, related documents and information, contact information, including mobile phone Telephone, e-mail address) of Hart domain name, after that counter need to check the main card number and identity, and then to handle business registration. Counter system sends domain registration information to Hart system banking front platform system and call the domain name registration interface, authentication domain name uniqueness. If the transaction is successful, print Hart domain name registration receipt, under enterprise clients' custody after business chop, enterprise clients with this receipt can handle to activate domain name at Hart official website.

Businesses of electronic channels:

Registration process is more complex, suggest using counter channel.

4.8 Inter-bank business domain name registration:

Interbank enterprises verify the Hart domain name when they registered at bank.

5 Hart domain Considerations

5.1 Registered domain name require within the specified time to activate, if no activation within the given time, the system will automatically void and release. Register domain name to set up period of validity.

5.2 Opening and binding Hart account.

The relationship between Hart main account and Hart bank account need to submit hart account platform. Hart bank main account is clients' bank main account, hart bank account is sub-account of clients' bank main account, it associated with hart master account (Hart domain name) and established binding relationship.

5.3 Individual clients and enterprise clients identity authentication

Clients' identity information on Hart accounts platform and bank need comparison and verification in the transaction process. When interbank enterprises register at bank, it also verified the validity of hart domain name on hart account system.

5.4 Personal mobile phone number binding and validation

Tripartite arrangement MUST be required to provide clients' mobile phone number、email and other key information. Online banking channels MUST be required online banking reserved cell phone number, and counter channels registration need opening card reserved cell phone number, and need to verify consistency.

5.5 Signing and circulation of the tripartite agreement

Clients signed a contract in the bank or online banking channels, and also signed a contract with hart account platform when hart account platform activated. After opening hart account in the bank, hart account has been opened but no activation, clients need to activate on hart main application or internet portal, by activating to notice platform and bank.

5.6 Hart ID activation and online identity authentication

The activation process of Hart ID and the identity authentication in the process of transaction all through mobile verification code to identity authentication. In the process of activation or transaction, the Hart account platform apply to the bank SMS platform for mobile phone verification code sent to the users' reserved phone number, the user submit verification code, and then sent to the bank authentication system by the Hart account platform for identity authentication.

5.7 Renewal and cancellation of Hart ID

Hart account platform after the cancellation of Hart ID to notify the bank to write off or freeze Hart bank account.

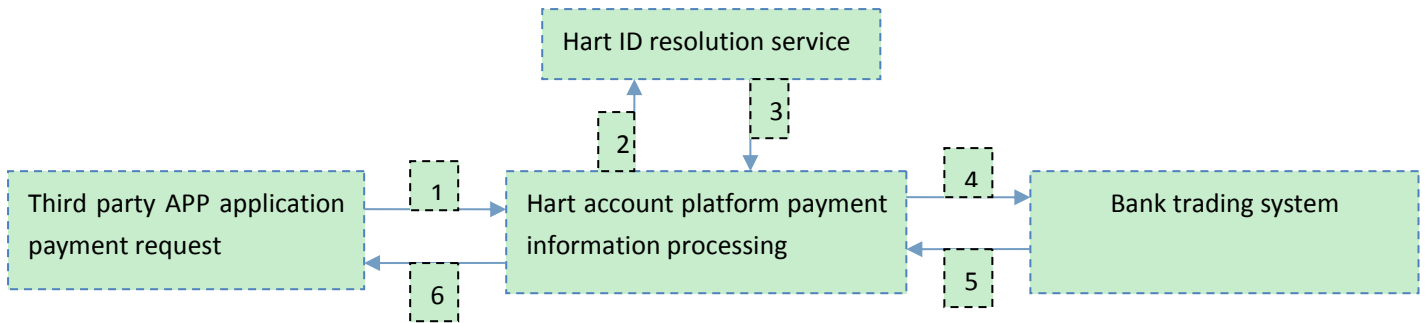
5.8 Legal relations

Hart account platform operators need to sign an agreement with the bank.

5.9 ID resolution and preservation

To support bank and inter-bank resolution, in order to protect the personal information security, Hart ID information only can interact in the bank and the Hart account platform.

All Hart ID and bank account binding relationship unified storage in Hart account platform domain name resolution service module, information source is from bank return information when clients activate Hart ID.



5.10 ID resolution in the process of payment

Process description:

Third party APP application send payment requests to the Hart account platform (Pay and paid party are all called Hart ID).

Hart account payment platform let payment request information of Hart ID, passing through Hart ID initiating analytical request to Hart ID resolution server.

Hart account resolution service bring succeed resolved of the Hart ID and corresponding bank account information back to the Hart account payment platform.

Hart account platform let the APP application of the payment request according to the analytical results by the bank transaction interface requirements for re - package.

The banking transaction system brings payment results back to the Hart account platform. Hart account platform send payment results back to third party application APP.

Application of contract process

The signing process occurs at the first time sign Hart account contract and the new APP application access. It is interpreted as application activation protocol.

APP application vendors

APP application vendors in the APP first access to the Hart account payment platform or a new business on the line, need to submit a business application to the bank, after a review of the legality of the business, the bank decide whether to open the business, and signed a tripartite arrangement.

Another: APP application merchants require in addition to businesses Hart ID bank, every Hart account platform supported by bank signed the collection agreement. We can accept inter-bank withholding funds.

Terminal user

When Hart account ID user sign up at the first time, they need to choose from agreement to open APP application protocol business. Or when new payment business open also need online banking page to choose open, Hart account ID user can use this business.

Hart account payment mode and the corresponding process

According to the merchant's situation, to distinguish between synchronous transactions (not

confirmed) or asynchronous transactions (confirmed) mode.

Synchronous mode: the payment transaction request and the transaction result answer synchronization completed.

Asynchronous mode: after the payment of the transaction request, the bank needs to launch a mobile phone verification action to the user, after the user confirmed, the bank side sends to Hart account platform the transaction results asynchronous response.

Payment request transaction message in the need to bring order information: including business type, business name, and product name, the number of transactions, the transaction amount and other information.

Hart merchants access and risk guarantee

Merchant to submit the risk reserve to the Hart account system bank account.

5.11 Capital account

Hart payment platform for all Hart ID to provide accounting services, including the current balance of each Hart ID, account status, transaction flow.

Every day at 1 am reconciliation of transactions with bank account system, including the balance and transaction details. Reconciliation is for the Banks SHALL prevail.

6.Hart account balance synchronization

Daily synchronization Hart account platform record account balance and the balance of bank account system. When the balance does not match, check the transaction flow. Reconciliation is for the Banks SHALL prevail, manual processing when errors occur.

Transaction reconciliation

Field name	Data type	State
TransNum		
TransAmtSum		
CheckFileName		

Hart account funds query related processes

To ease the pressure on the banking system, as well as to enhance the user experience, with Hart account information query relevant information sources are Hart account platform. Details are: Hart account balance inquiries, Hart account information inquiries (account status, etc.), Hart account transactions details. At workday, the authenticities of the information synchronize with the information at bank, and transaction reconciliation guarantee.

7. Security Considerations

In order to realize the interconnection and mutual certification, the HIEP mutual information approval is refer to X.509V3 extension. It is merged into PKCS#12, the indicated HTB domain name MUST be the first level domain name of a bank. Bind the user's public key information with other identified information including the username and email add., to complete the certification of users on the internet.

8.IANA Considerations

The IANA will configure the HTB prot for HIEP.

9.Conclusions

This document describes the pre-position E-currency paying public infrastructure of bank in the field of the internet E-paying, that realize the HIEP on the HTTP protocol according to the open standard of W3C.

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Author's Address:

Tian Guorong

Shanghai Hongchuang WEB Technology Service Co., Ltd.

Bldg 14, Xinyun Economic Zone, Lane 3199 Zhenbei Rd.

Shanghai, China

Phone no.: 0086 135 8592 1617

Email: bill.tian@shcn.cc

Shen Jun

Phone No.: 0086 133 0171 0551

Email: jun.shen@shcn.cc

Curtis Yang

Phone No.: 0086 138 0178 0703

Email: curtis.yang@shcn.cc