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	2 pages Claims, 5 pages Specification, 2 pages Drawings

[54] Title of invention:

A trusted service manager system and method for mobile payments

[57] Abstract:

The present invention provides a mobile payment TSM system and a method thereof, characterized in that it includes a card management module, a security management module, and a management module, wherein the card management module includes a card information management unit for managing card information ; the security management module includes a key management unit for key generation, storage, and distribution ; the application management module is connected to the card management module and security management module, for receiving an application request submitted by a user terminal, acquiring corresponding information from a card management module and security management module, and processing the application request.
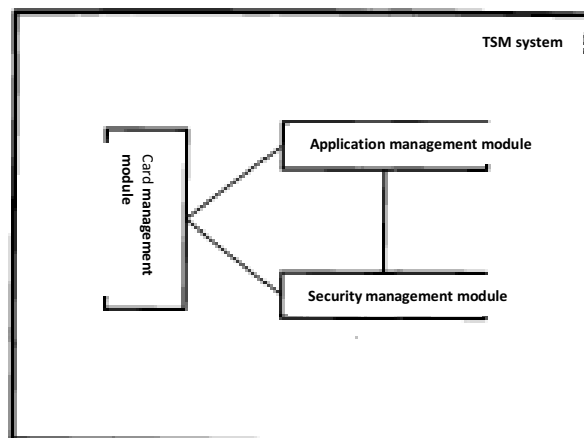
1. A trusted service manager system for mobile payments, characterized in that it comprises a card management module, security management module, and application management module, wherein

the card management module comprises a card information management unit configured to manage card information;

the security management module comprises a key management unit configured for key generation, storage, and distribution;

the application management module is connected to the card management module and security management module, and configured to receive an application request submitted by a user terminal, acquire corresponding information from the card management module and security management module, and process the application request.

2. The trusted service manager TSM system according to Claim 1, characterized in that the card information comprises one or more of the following types of information: card operating system, card version, card owner, and card batch information.

3. The TSM system according to Claim 1, characterized in that the card management module also comprises a security domain management unit, and the security domain management comprises one or more of the following functions: security domain information maintenance, security domain creation, and security domain deletion.

4. The TSM system according to Claim 1 or Claim 3, characterized in that the card management module also comprises a card status management unit, and the card status management comprises one or more of the following: card status recording, card locking, or card unlocking.

5. The TSM system according to Claim 1, characterized in that the security management module also comprises a certificate management unit, comprising one or more of the functions of certificate requesting, certificate storage, and certificate updating.

6. The TSM system according to Claim 1, characterized in that the application management module receives an application request submitted by a user terminal, examines and tests the request, and issues the corresponding application to the terminal after the request passes the test.

7. The TSM system according to Claim 6, characterized in that the application management module further comprises an application submission unit, an application test unit, and an application download unit, wherein,

the application submission unit is configured to receive an application request submitted by a user terminal;

the application test unit is configured to examine and testing an application request and

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notify the application download unit after the test is passed;

after receiving a notification from the application test unit, the application download unit generates download data and issues the download data to a user terminal.

8. The TSM system according to Claim 6, characterized in that the application management module also comprises an application deletion unit configured to delete a user terminal application.

9. A method utilizing a TSM system to perform mobile payments, applied to a TSM system, comprising the following steps:

(a) a user terminal submitting an application request to an application management module;

(b) the application management module acquiring card information from a card management module;

(c) the application management module acquiring the key information of the security domain of this card from a security management module;

(d) the application management module generating download data corresponding to the application and issuing the application to the user terminal.

10. The method according to Claim 9, characterized in that, after Step (d), it also comprises Step (e): the user terminal feeding back the application download status to the application management module.

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A trusted service manager system and method for mobile payments

Technical field

The present invention relates to mobile communication systems. In particular, it relates to an NFC (Near Field Communication, short-range wireless communication) mobile payment TSM (Trusted Service Manager) system and a method thereof.

Background

Mobile value-added services are developing extremely rapidly, and services such as SMS, MMS, and mobile internet access are becoming ever more deeply embedded into people's lives. As an extremely important part of value-added services, mobile payments have been granted great importance by operators. "NFC mobile payment technology" is achieved through SIM/UICCs (universal integrated circuit cards) in mobile phones in connection with contactless/NFC technology. With a mobile phone possessing this function, a user can make a payment simply by waving their mobile phone in front of a special card reader.

The NFC working group within the GSMA (Global System for Mobile Communications Association) has started research on standardization of NFC technology in the field of mobile communications, and has proposed establishing TSMs as the management platforms in NFC systems, to be responsible for the management of mobile phone SIM/UICC cards. Today, TSM platform research is still in the initial stage. The question of how to effectively design the internal structure of TSM systems, providing them with good modularity and scalability requires further research.

Summary of the invention

The technical problem addressed by the present invention is the provision of a TSM system and method, enabling TSM platforms to provide mobile payment services as simply and efficiently as possible.

To solve this technical problem, the present invention provides a mobile payment TSM system, characterized in that it includes a card management module, a security management module, and an application management module, wherein,

the card management module includes a card information management unit configured to manage card information;

the security management module includes a key management unit configured for key generation, storage, and distribution;

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the application management module is connected to the card management module and security management module, and configured to receive an application request submitted by a user terminal, acquire corresponding information from the card management module and security management module, and process the application request.

Furthermore, this TSM system may also possess the following characteristic: the card information includes one or more of the following types of information: card operating system, card version, card owner, and card batch information.

Furthermore, this TSM system may also possess the following characteristic: the card management module also includes a security domain management unit, and the security domain management includes one or more of the following functions: security domain information maintenance, security domain creation, and security domain deletion.

Furthermore, this TSM system may also possess the following characteristic: the card management module also includes a card status management unit, and the card status management includes one or more of the following: card status recording, card locking, or card unlocking.

Furthermore, this TSM system may also possess the following characteristic: the security management module also includes a certificate management unit, including one or more of the functions of certificate requesting, certificate storage, and certificate updating.

Furthermore, this TSM system may also possess the following characteristic: the application management module receives an application request submitted by a user terminal, examines and tests the request, and issues the corresponding application to the terminal after the request passes the test.

Furthermore, this TSM system may also possess the following characteristic: the application management module further includes an application submission unit, an application test unit, and an application download unit, wherein,

the application submission unit is configured to receive an application request submitted by a user terminal;

the application test unit is configured to examine and test an application request and notify the application download unit after the test is passed,

after receiving a notification from the application test unit, the application download unit generates download data and issues the download data to a user terminal.

Furthermore, this TSM system may also possess the following characteristic: the application management module also includes an application deletion unit configured to delete a user terminal application.

A method utilizing a TSM system to perform mobile payments, applied to a TSM system, including the following steps:

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