

described herein. Thus, a data processing system acting as an operations server supporting mobile payment as described herein comprises the data processor that includes program storage storing programs executable by the data processor and having communication resources supporting a plurality of communication protocols, including for example protocols which are executable supporting links through the telecommunication provider network to a mobile communication device, and protocols that are executable over the Internet. Programs on the operations server include a program adapted to control a transaction involving changing stored value on a mobile communication device. Thus, a representative program on the operations server includes:

- [0037] sending data representing a stored value to the mobile communication device;
 - [0038] receiving a first record of a particular transaction from the mobile communication device via a first communication channel through a telephone service provider network;
 - [0039] receiving a second record of the particular transaction from the mobile communication device via a transaction terminal via a second communications channel through a communication network coupled to the transaction terminal;
 - [0040] reconciling the first and second records to verify the particular transaction; and
 - [0041] updating an account associated with the particular transaction.
- [0042] Another program on the operation server is adapted to receive periodically transmitted stored value audit records delivered from mobile devices via the telecommunication provider network to the operation server. The operation server also includes programs adapted to review and monitor the stored value audit records and account activity to detect fraud or tampering with the stored value memory on the mobile devices, and to otherwise improve security of the mobile payment system.
- [0043] Another program on the operation server control particular transactions initiated by at least partly wireless communication between 1) a mobile communication device having a stored value represented by data on the mobile communication device and 2) a transaction terminal. The program instructions perform the following:
- [0044] receiving, at the transaction operations server, a first particular transaction of the mobile communication device, wherein the first transaction adds a first amount of money to the stored value represented by data on the mobile communication device, and wherein the first amount of money is in a first data type representing a first business issued currency honored by a first group of one or more businesses;
 - [0045] receiving, at the transaction operations server, a second particular transaction of the mobile communication device, wherein the second transaction subtracts a second amount of money from the stored value represented by data on the mobile communication device, and wherein the second amount of money is in a second data type representing a second business issued currency honored by a second group of one or more businesses;
 - [0046] exchanging, at the transaction operations server, at least part of the money represented by data on the mobile communication device between the first data type and the second data type.
 - [0047] Another programs executed by the data processing system including instructions to maintain an accounting data-

base to keep records of the plurality of data types including the first data type and the second data type, each of the plurality of data types representing currency issued by a group of one or more businesses. The accounting database also keeps records of customers of a plurality of providers of communication services for mobile communication devices, such as Internet service providers or telecommunications service providers. The records include billing records to be sent from the data processing system to data processors of the plurality of providers of communication services.

[0048] The data processing system flexibly operates with different electronic money systems. Accordingly, the exchange of money occurs either with an account of a payment services provider operating the transactions operations server, or a merchant honoring electronic money. To help support a range of different electronic currencies and agreements between payment service providers, business groups, and communications service providers, the exchange ratio between any two electronic currencies can be set at 1:1 or some other ratio. The settlement system is similarly flexible. The exchange of money is credited to the account of a user of the mobile communications device. Alternatively, money to be exchanged is taken from the account of a user of the mobile communications device. In another example, in a transaction where the user of a mobile communications device spends a portion of stored value at a merchant, the exchanged money is directly credited to account of a payment services provider, or credited to the payment services provider following a credit wand debit of the exchanged money with an account of the merchant.

[0049] In addition, the data processing system accesses a memory supporting mobile payment, which comprises:

[0050] a data structure stored in said memory accessed by the data processing system of a transaction operations server, said data structure including:

- [0051] a first data type representing a first business issued currency honored by a first group of one or more businesses; and

- [0052] a second data type representing a second business issued currency honored by a second group of one or more businesses,

- [0053] wherein the first data type and the second data type support the following:

- [0054] a first particular transaction of a mobile communication device initiated by at least partly wireless communication between a) the mobile communication device having a stored value represented by data on the mobile communication device and b) a first transaction terminal, wherein the first transaction adds a first amount of money to a stored value represented by data on the mobile communication device, and wherein the first amount of money is in the first data type;

- [0055] a second particular transaction of the mobile communication device initiated by at least partly wireless communication between a) the mobile communication device having the stored value represented by data on the mobile communication device and b) a second transaction terminal, wherein the second transaction subtracts a second amount of money from the stored value represented by data on the mobile communication device, and wherein the second amount of money is in the second data type; and