CLAIMS

1. A transaction terminal system comprising:

storage circuitry to store information that is indicative of a terminal system currency of the transaction terminal system;

input circuitry to receive a token identifier, wherein the token identifier comprises:

information that is indicative of a user currency; and

information to which a user primary account number is one-way mapped;

processing circuitry to compare the terminal system currency to the user currency, and where there is a difference, to cause a currency choice offering to be provided and in response to selection of the user currency, to transmit a message to cause a transaction to be performed in the user currency in respect of the user primary account number without the user primary account number being supplied to the transaction terminal, wherein

the message comprises the information to which the user primary account number is one-way mapped.

2. The transaction terminal system according to any preceding claim, wherein

the token identifier comprises any combination of:

a subset of the user primary account number,

a trailing x digits of the user primary account number,

a random or pseudo-random number,

an indicator of an operator of the user payment account,

a result of applying a one-way hash to the user primary account number

at least one digit and a checksum value in respect of the at least one digit,

one or more leading non-digit characters, and

16 alphanumeric characters.

3. The transaction terminal system according to any preceding claim, wherein

the information that is indicative of a user currency comprises a billing currency code identifier, a currency code identifier, or a country code identifier.

4. The transaction terminal system according to any preceding claim, wherein

the input circuitry comprises at least one of:

a keypad for entering the token identifier, and

an interface for connection to a processing device from which the token identifier is receivable.

5. The transaction terminal system according to any preceding claim, wherein

an amount of the transaction is determined as a result of input of information for goods or services to be purchased.

6. The transaction terminal system according to any preceding claim, wherein

the processing circuitry is configured to operate in at least one of:

a sale mode of operation in which the transaction is in respect of a sale; and

a refund mode of operation in which the transaction is in respect of a refund.

7. The transaction terminal system according to any preceding claim, wherein

in response to determining that the terminal system currency and the user currency differ, the processing circuitry is configured to cause at least one of:

a current currency conversion value from the transaction currency to the user currency, and

a converted transaction amount using the current currency conversion value,

to be downloaded from a remote server to the transaction terminal system.

8. The transaction terminal system according to claim 7, wherein

the currency choice offering comprises at least one of:

the current currency conversion value, and

an amount of the transaction converted into the user currency using the current currency conversion value.

9. The transaction terminal system according to any preceding claim, wherein:

the input circuitry is adapted to receive the information to which the user primary account number is one-way mapped and data relating to the user currency; and

the processing circuitry is adapted, in response to receiving the information to which the user primary account number is one-way mapped and the data relating to the user currency, to generate encrypted information by encrypting at least the information to which the user primary account number is one-way mapped, and to transmit the encrypted information and the data relating to the user currency to a server, wherein

the transaction terminal system comprises receiving circuitry to receive the token identifier in response to transmitting the encrypted information; and

the transaction terminal system comprises output circuitry to output the token identifier.

10. A method comprising:

storing information that is indicative of a terminal system currency of a transaction terminal system;

receiving a token identifier, wherein the token identifier comprises:

information that is indicative of a user currency; and

information to which a primary account number is one-way mapped;

comparing the terminal system currency to the user currency, and where there is a difference, causing a currency choice offering to be displayed; and

in response to selection of the user currency, transmitting a message to cause a transaction to be performed in the user currency in respect of the user primary account number without the user primary account number being supplied, wherein

the message comprises the information to which the user primary account number is one-way mapped.

11. A data processing apparatus comprising:

input circuitry to receive a user primary account number and information indicative of a user currency;

processing circuitry to generate a token identifier using the user primary account number and the information indicative of the user currency, wherein the token

identifier comprises the information indicative of the user currency and information to which the user primary account number is one-way mapped; and

output circuitry to provide the token identifier, wherein

the token identifier is adapted to enable a transaction to the user primary account number to take place in the user currency at a transaction terminal without the user account number being provided to the transaction terminal.

12. A data processing apparatus according to claim 11, wherein

the information indicative of the user currency is one of: the user payment account information, a currency code, or an issuer country code.

13. The data processing apparatus according to claim 11, wherein

the input circuitry comprises any combination of:

magnetic stripe reader circuitry,

EMV circuitry,

NFC communication circuitry, and

a keypad.

14. The data processing apparatus according to any one of claims 9-13, wherein

at least one of the the input circuitry and the output circuitry comprises communication circuitry to communicate with one or more further data processing devices via a network.

15. The data processing apparatus according to any one of claims 9-14, wherein

the output circuitry is configured to provide the token identifier to a sender of the user primary account number.

16. The data processing apparatus according to any one of claims 9-15, wherein

the user primary account number is provided in encrypted format.

17. A method comprising:

receiving user primary account number and information indicative of a user currency;

generating a token identifier using the user primary account number and the information indicative of the user currency, wherein the token identifier comprises the information indicative of the user currency and information to which the user primary account number is one-way mapped; and

providing the token identifier, wherein

the token identifier is adapted to enable a transaction to the user primary account number to take place in the user currency at a transaction terminal without the user account number being provided to the transaction terminal.

18. A server comprising:

input circuitry configured to receive a message to cause a transaction to be performed in a user currency in respect of a user payment account, wherein the message comprises a token identifier comprising information to which a user primary account number is one-way mapped and information that is indicative of a user currency;

storage circuitry comprising a plurality of mappings from information to which the user primary account number is one-way mapped to the user primary account number; and

processing circuitry configured, in response to receiving the message, to obtain the user primary account number from the storage circuitry and to cause the transaction to be performed, without obtaining the user primary account number from the sender.

19. The server according to claim 18, wherein

the message comprises at least one of:

the user currency,

an indication that the user currency is other than a currency associated with a sender of the message,

a transaction amount and a current currency conversion value,

the transaction amount converted into the user currency using the current currency conversion value.

20. A method comprising:

receiving a message to cause a transaction to be performed in a user currency in respect of a user payment account, wherein the message comprises a token identifier comprising information to which the user primary account number is one-way mapped and information that is indicative of a user currency;

storing a plurality of mappings from information to which the user primary account number is one-way mapped to user primary account number in storage circuitry; and

in response to receiving the message, to obtain the user primary account number from the storage circuitry and causing the transaction to be performed.

21. A system comprising:

the transaction terminal system of any one of claims 1-9;

the data processing apparatus of any one of claims 11-16; and

the server of any one of claims 18-19.