CLAIMS

1. A remote transaction processing system comprising:

a plurality of user devices, each of the plurality of user devices including a payment card reader and a secure memory element storing a Point of Sale (PoS) terminal application;

a first data store including a user device profile for each of the plurality of user devices, each of the user device profiles including routing data to rout communications to the user device; and

a payment service host including a processor configured to execute computer program code to receive payment requests for each of a plurality of merchants for payment for a transaction initiated at a respective merchant site or website, the payment service host being configured, upon receiving one of the payment requests designating one of the user devices for the respective transaction with one of the plurality of merchants, to execute program code to retrieve a PoS configuration profile corresponding to the merchant and retrieve the user device profile including the routing data from the first data store corresponding to the designated user device, the payment service host being configured to generate a PoS configuration based on the PoS configuration profile, the retrieved user device profile, and payment information on the transaction including the amount to the user device and communicate the generated PoS configuration to the user device using the routing data from the retrieved user device profile,

in which the user device is configured to receive the PoS configuration communicated from the payment service host for the transaction with the merchant, to execute the PoS terminal application in the secure memory element, to configure the PoS terminal application in dependence on the received PoS configuration, and to communicate with a payment card via the payment card reader for payment of the transaction with the PoS terminal application to thereby act as a PoS terminal of the merchant on the user device for the transaction with the merchant.

2. A system according to Claim 1, in which each of the user device profiles includes a public key of a cryptographic keypair of the user device, the remote transaction processing system being configured to encrypt the communicated PoS configuration using the public key.

3. A system according to Claim 1, in which the routing data includes a plurality of routes for communicating with the user device, the remote transaction processing system being

configured to determine a route from the plurality of routes for communicating with the user device.

4. A system according to Claim 3, in which the routes in the routing data are ranked, the remote transaction processing system being configured to identify a route to reach the user device in dependence on the ranks.

5. A system according to Claim 3, in which the routes include routes to communicate with the user device over different channels.

6. A system according to Claim 5, in which the channels are selected from a set including: Short Message Service (SMS), instant messaging, a communication to a predetermined address on a data communications network, and a data call over a communications network.

7. A system according to Claim 1, further comprising a second data store including the PoS configuration profile for each of the plurality of merchants, the remote transaction processing system being configured to retrieve the PoS configuration profile for the merchant from the second data store,

in which the second data store includes a PoS certificate associated with the respective merchant, the PoS certificate including the PoS configuration profile of the respective merchant.

8. A system according to Claim 1, in which the first data store is remote of the user devices.

9. A system according to Claim 1, further comprising a merchant website including a payment user interface configured to receive an identifier from a user designating a user device profile to be used for a payment, the remote transaction processing system being configured to retrieve the user device profile in dependence on the identifier.

10. A remote transaction processing method comprising:

receiving, at a payment service host from a merchant website of one of a plurality of merchants, a payment request designating a user device for a transaction with a merchant, the user device including a payment card reader and a secure memory element in which a PoS terminal application is executable by the user device;

retrieving, by the payment service host, a Point-of-Sale (PoS) configuration profile corresponding to the merchant;

retrieving, by the payment service host, a user device profile corresponding to the designated user device from a first data store storing the user device profile, the user device profile including routing data for routing communications to the user device;

generating a PoS configuration based on the PoS configuration profile, the retrieved user device profile, and payment information on the transaction including the amount to the user device; and

communicating the generated PoS configuration to the user device using the routing data from the retrieved user device profile,

in which the user device is configured to receive and use the PoS configuration profile communicated from the payment service host to cause the user device to act as a PoS terminal and accept a card payment via the card reader for the transaction with the merchant.

11. A method according to Claim 10, further comprising:

associating a cryptographic certificate with the user device profile, the certificate including a public key of a public and private keypair;

encrypting at least aspects of the PoS configuration using the public key; and

decrypting the encrypted PoS configuration at the user device using a private key of the public and private keypair.

12. A method according to Claim 11, further comprising:

storing the cryptographic certificate in a data store, the retrieving the user device profile including retrieving the certificate.

13. A method according to Claim 10, in which the generating the PoS configuration includes signing the PoS configuration using a private key of a private/public cryptographic keypair.

14. A method according to Claim 10, further comprising performing, at the user device:

conducting the card payment transaction at the user device by the PoS terminal,

signing, at the PoS terminal, payment transaction data,

encrypting, at the PoS terminal, the signed payment transaction data,

transmitting, by the PoS terminal, the encrypted and signed payment transaction data to a payment service host, and

deleting, by the PoS terminal, the payment information from a PoS terminal memory.

15. A method according to Claim 1, in which the PoS terminal application is configured to delete the PoS configuration from the user device after the transaction so that the user device no longer acts as a PoS terminal for transactions with the merchant.

16. A method according to Claim 1, in which the PoS application on the user device is configured to verify that the PoS configuration profile corresponding to the merchant is unaltered.