Claims

1. A merchant WiFi router for processing a payment transaction between a merchant and a user using a merchant WiFi network connected to the router, the router comprising a computer processor and a data storage device, the data storage device storing instructions operable to cause the processor to:

receive, from a user electronic device, a connection request for connecting the user electronic device to the merchant WiFi network for paying the payment transaction, the connection request comprising a user device identifier associated with the user electronic device;

determine, using a merchant database and in response to receiving the connection request, that the user electronic device is enrolled with the merchant for making payment using the merchant WiFi network based on a unique pairing between the user device identifier and a router identifier associated with the router, the merchant database storing the user device identifier, the router identifier, and payment instrument data associated with a payment instrument of the user;

transmit, to the user electronic device and in response to a determination of the unique pairing, a connection response indicating that the user electronic device is connected to the router for paying the payment transaction, the connection response comprising details of the payment transaction;

receive, after transmitting the connection response, a confirmation response from the user electronic device for the merchant to proceed with the payment transaction;

retrieve, from the merchant database, the payment instrument data associated with the user payment instrument in response to the confirmation response to proceed with the payment transaction, the payment instrument data comprising a payment account identifier; and

communicate, to a payment network server and in response to retrieving the payment instrument data, a payment transaction request for processing the payment transaction, the payment transaction request comprising the payment transaction details and the payment instrument data.

2. The router of claim 1, wherein the payment transaction details comprise a payment amount associated with the payment transaction.

3. The router of claim 1 or claim 2, wherein the data storage device further comprises instructions operative by the processor to: transmit, to the user electronic device, a

payment approval response indicating whether the payment transaction is approved or refused.

4. The router of any one of claims 1 to 3, wherein the data storage device further comprises instructions operative by the processor to perform an enrolment procedure to enroll the user for payment using the merchant WiFi network, the enrolment procedure comprising:

transmitting, to the user electronic device, a pairing request for pairing a user device identifier with the router identifier;

receiving, from the user electronic device, a pairing response indicating the user's approval of said pairing; and

storing details of said pairing in the merchant database.

5. The router of claim 4, wherein the enrolment procedure further comprises:

transmitting, to the user electronic device, a payment instrument request in response to the user's approval of said pairing;

receiving, from the user electronic device, a payment instrument response comprising details of the user payment instrument;

transmitting, to the payment network server, the details of the user payment instrument for tokenization of the user payment instrument;

receiving, from the payment network server, a payment token associated with the user payment instrument; and

storing, on the merchant database, the payment token against the user device identifier.

6. The router of claim 5, wherein the enrolment procedure further comprises:

transmitting, to the user electronic device, a password input request comprising a request for the user to retrieve a password from a merchant payment terminal;

receiving, from the user electronic device, a password input response comprising a password input; and

verifying that the password input matches the password, the payment instrument request is transmitted to the user electronic device if the password input is verified.

7. The router of claim 5, wherein the enrolment procedure further comprises:

transmitting, to the user electronic device, a network password input request comprising a request for a network password;

receiving, from the user electronic device, a network password input response comprising a network password input; and

verifying that the network password input matches the network password, the payment instrument request is transmitted to the user electronic device if the network password input is verified.

8. The router of any one of claims 5 to 7, wherein the payment token is generated by the payment network server.

9. The router of any one of claims 5 to 8, wherein the payment token associated with the user payment instrument is associated with the user device identifier and the router identifier so that the payment token is valid only for payment transactions made through the user electronic device and the router.

10. The router of any one of claims 1 to 9, wherein the user device identifier and/or the router identifier comprises a media access control (MAC) address.

11. A computer implemented method for processing a payment transaction between a merchant and a user using a merchant WiFi network connected to a merchant WiFi router, the method comprising:

receiving, from a user electronic device, a connection request for connecting the user electronic device to the merchant WiFi network for paying the payment transaction, the connection request comprising a user device identifier associated with the user electronic device;

determining, using a merchant database and in response to receiving the connection request, that the user electronic device is enrolled with the merchant for making payment using the merchant WiFi network based on a unique pairing between the user device identifier and a router identifier associated with the router, the merchant database storing the user device identifier, the router identifier, and payment instrument data associated with a payment instrument of the user;

transmitting, to the user electronic device and in response to a determination of the unique pairing, a connection response indicating that the user electronic device is connected to the router for paying the payment transaction, the connection response comprising details of the payment transaction;

receiving, after transmitting the connection response, a confirmation response from the user electronic device for the merchant to proceed with the payment transaction;

retrieving, from the merchant database, the payment instrument data associated with the user payment instrument in response to the confirmation response to proceed with the

payment transaction, the payment instrument data comprising a payment account identifier; and

communicating, to a payment network server and in response to retrieving the payment instrument data, a payment transaction request for processing the payment transaction, the payment transaction request comprising the payment transaction details and the payment instrument data.

12. The method of claim 11, wherein the payment transaction details comprise a payment amount associated with the payment transaction.

13. The method of claim 11 or claim 12 further comprising:

transmitting, to the user electronic device, a payment approval response indicating whether the payment transaction is approved or refused.

14. The method of any one of claims 11 to 13 further comprising performing an enrolment procedure to enroll the user for payment using the merchant WiFi network, the enrolment procedure comprising:

transmitting, to the user electronic device, a pairing request for pairing a user device identifier with the router identifier;

receiving, from the user electronic device, a pairing response indicating the user's approval of said pairing; and

storing details of said pairing in the merchant database.

15. The method of claim 14, wherein the enrolment procedure further comprises:

transmitting, to the user electronic device, a payment instrument request in response to the user's approval of said pairing;

receiving, from the user electronic device, a payment instrument response comprising details of the user payment instrument;

transmitting, to the payment network server, the details of the user payment instrument for tokenization of the user payment instrument;

receiving, from the payment network server, a payment token associated with the user payment instrument; and

storing, on the merchant database, the payment token against the user device identifier.

16. The method of claim 15, wherein the enrolment procedure further comprises:

transmitting, to the user electronic device, a password input request comprising a request for the user to retrieve a password from a merchant payment terminal;

receiving, from the user electronic device, a password input response comprising a password input; and

verifying that the password input matches the password, the payment instrument request is transmitted to the user electronic device if the password input is verified.

17. The method of claim 15, wherein the enrolment procedure further comprises:

transmitting, to the user electronic device, a network password input request comprising a request for a network password;

receiving, from the user electronic device, a network password input response comprising a network password input; and

verifying that the network password input matches the network password, the payment instrument request is transmitted to the user electronic device if the network password input is verified.

18. The method of any one of claims 15 to 17, wherein the enrolment procedure further comprises receiving, from the user electronic device, an authorization to use the payment token for processing the payment transaction.

19. The method of any one of claims 15 to 18, wherein the payment token is associated with the user device identifier and the router identifier so that the payment token is valid only for payment transactions made through the user electronic device and the router.

20. A non-transitory computer-readable medium having stored thereon program instructions for causing at least one processor to perform the method of claim 11.