

What Is Claimed Is:

1. A payment-processing apparatus, comprising:
 - a facial-information-collection module configured to collect facial information of a customer;
 - 5 a first communication interface configured to communicate with a point-of-sale (POS) terminal; and
 - a second communication interface configured to communicate with a remote computing device and send the collected facial information to the remote computing device, thereby allowing the remote computing device to identify a customer account
 - 10 based on the collected facial information.
2. The payment-processing apparatus of claim 1, wherein the first communication interface comprises a universal serial bus (USB) interface, a Bluetooth™ interface, or a WiFi™ interface.
3. The payment-processing apparatus of claim 1, wherein the second communication
- 15 interface is configured to receive, from the remote computing device, a transaction-authorization code, which is generated by the remote computing device based on the identified customer account.
4. The payment-processing apparatus of claim 3, wherein the first communication interface is configured to forward, to the POS terminal, the transaction-authorization code
- 20 to allow the POS terminal to submit a payment request to the customer account based on the transaction-authorization code and a payment amount.
5. The payment-processing apparatus of claim 1, wherein the facial information comprises one or more of:
 - a two-dimensional (2D) image of the customer's face;
 - 25 a three-dimensional (3D) image of the customer's face;
 - a feature vector extracted from an image of the customer's face.
6. The payment-processing apparatus of claim 1, further comprising an input module configured to receive additional security information from the customer.
7. The payment-processing apparatus of claim 6, wherein the second communication
- 30 interface is further configured to transmit the additional security information to the remote

computing device, thereby allowing the remote computing device to verify the customer's identity based on the additional security information.

8. The payment-processing apparatus of claim 1, further comprising a display module configured to:

5 display information associated with the identified customer account; and
display a payment result.

9. The payment-processing apparatus of claim 1, wherein the remote computing device comprises a facial information database storing facial information of a plurality of customers.

10 10. The payment-processing apparatus of claim 1, wherein the POS terminal is a standard POS terminal configured to perform standard POS operations.

11. A computer-implemented payment-processing method, comprising:
obtaining, by a facial-information-collection device, facial information of a customer;

15 transmitting the facial information to a remote computing device;
receiving, from the remote computing device, a transaction-authorization code, which is generated based on the facial information of the customer; and
forwarding the transaction-authorization code to a point-of-sale (POS) terminal, thereby facilitating the POS terminal to complete a transaction based on the transaction-authorization code.

20 12. The computer-implemented method of claim 11, wherein the facial-information-collection device comprises a communication interface configured to communicate with the POS terminal, and wherein the communication interface comprises a universal serial bus (USB) interface, a Bluetooth™ interface, or a WiFi™ interface.

25 13. The computer-implemented method of claim 11, wherein the remote computing device is configured to perform a facial recognition operation based on the facial information of the customer in order to identify an account associated with the customer.

30 14. The computer-implemented method of claim 13, wherein the POS terminal is configured to submit a payment request to the account associated with the customer based on the transaction-authorization code and a payment amount.

15. The computer-implemented method of claim 11, wherein the facial information comprises one or more of:

a two-dimensional (2D) image of the customer's face;

a three-dimensional (3D) image of the customer's face;

5 a feature vector extracted from an image of the customer's face.

16. The computer-implemented method of claim 11, further comprising receiving additional security information from the customer.

17. The computer-implemented method of claim 16, further comprising transmitting the additional security information to the remote computing device to allow the remote
10 computing device to verify the customer's identity based on the additional security information.

18. The computer-implemented method of claim 11, further comprising:
displaying information associated with the identified customer account; and
displaying a payment result.

15 19. The computer-implemented method of claim 11, wherein the remote computing device comprises a facial information database storing facial information of a plurality of customers.

20. The computer-implemented method of claim 11, wherein the POS terminal is a standard POS terminal configured to perform standard POS operations.

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