

Abstract

Computer system and computer-implemented method for authenticating a card-not-present payment transaction initiated using a user electronic device

A payment authentication system for authenticating a card-not-present payment transaction initiated using a user electronic device is described. The payment authentication system comprises an authentication server, a directory server and a payment network server. The authentication server comprises an authentication server database storing a plurality of authentication records, each authentication record comprising a payment card identifier, a mobile number and a secure element identifier, and is configured to: (i) receive, from the user electronic device, an authentication request comprising a payment card identifier, a mobile number and a secure element identifier associated with the user electronic device; and validate a combination of the payment card identifier, the mobile number and the secure element identifier of the authentication request by determining if the combination of the payment card identifier, the mobile number and the secure element identifier matches an authentication record of the plurality of authentication records. The directory server is configured to: (i) generate a network authentication value (AV) if the combination of the payment card identifier, the mobile number and the secure element identifier has been validated; (ii) store a combination of the network AV and the payment card identifier; and (iii) transmit, to the user electronic device, an authentication response comprising the network AV. The payment network server is configured to: (i) receive, from the user electronic device, a transaction request comprising a received payment card identifier and a received network AV; (ii) determine if the received payment card identifier and the received network AV match the stored payment card identifier and the stored network AV; and (iii) transmit, to an issuer server, an authorization request comprising an authentication indication indicating that the card-not-present payment transaction has been authenticated if the received payment card identifier and the received network AV match the stored payment card identifier and the stored network AV.

[Figure to print with the abstract: Fig. 2]