

WHAT IS CLAIMED IS:

1 1. A method comprising:
2 receiving, by a processing network computer, a token or a token reference identifier
3 usable to identify the token;
4 generating, by the processing network computer, a token cryptogram, which encrypts the
5 token and a payment channel indicator;
6 transmitting, by the processing network computer, the token and the token cryptogram to
7 a biller computer, which uses the token and the token cryptogram to process a bill, by generating
8 an authorization request message comprising the token, the token cryptogram, and a channel
9 indicator for an interaction involving the bill;
10 receiving, by the processing network computer, the authorization request message
11 comprising the token, the token cryptogram, and the channel indicator;
12 decrypting, by the processing network computer, the token cryptogram to obtain a
13 decrypted payment channel indicator;
14 validating, by the processing network computer, the token cryptogram using the channel
15 indicator from the authorization request message and the decrypted payment channel indicator,
16 to determine whether the token is being used in a correct payment channel;
17 retrieving, by the processing network computer, a credential associated with the token;
18 modifying, by the processing network computer, the authorization request message to
19 include the credential associated with the token, wherein contents of the modified authorization
20 request message indicate whether or not the token is being used in the correct payment channel;
21 and
22 transmitting a modified authorization request message including the credential to an
23 authorizing entity computer, which authorizes the interaction based on the contents of the
24 modified authorization request message indicating that the token is being used in the correct
25 payment channel.

1 2. The method of claim 1, wherein the processing network computer receives the
2 token reference identifier, and the method further comprises:
3 retrieving the token from a token service computer using the token reference identifier.

1 3. The method of claim 1, wherein the processing network computer receives the
2 authorization request message comprising the token from the biller computer via a transport
3 computer.

1 4. The method of claim 1, further comprising:
2 receiving an authorization response message from the authorizing entity computer.

1 5. The method of claim 4, further comprising:
2 modifying the authorization response message to include the token; and
3 transmitting the modified authorization response message to the biller computer.

1 6. The method of claim 1, wherein the processing network computer transmits the
2 token to the biller computer via an API.

1 7. The method of claim 6, wherein the API includes data fields including a token
2 data field for the token, a token cryptogram data field, and a postal code data field.

1 8. The method of claim 7, wherein the API further includes data fields including a
2 transaction identifier and a biller identifier.

1 9. A processing network computer comprising:
2 a processor; and
3 a non-transitory computer readable medium, the non-transitory computer readable
4 medium comprising instructions, executable by the processor, to cause the processing network
5 computer to:
6 receive a token or a token reference identifier usable to identify the token;
7 generate a token cryptogram, which encrypts the token and a payment channel indicator;
8 transmit the token and the token cryptogram to a biller computer, which uses the token
9 and the token cryptogram to process a bill, by generating an authorization request message
10 comprising the token, the token cryptogram, and a channel indicator for an interaction involving
11 the bill;
12 receive the authorization request message comprising the token, the token cryptogram,
13 and the channel indicator;
14 decrypt the token cryptogram to obtain a decrypted payment channel indicator;

15 validate the token cryptogram using the channel indicator from the authorization request
16 message and the decrypted payment channel indicator, to determine whether the token is being
17 used in a correct payment channel;

18 retrieve a credential associated with the token;

19 modify the authorization request message to include the credential associated with the
20 token, wherein contents of the modified authorization request message indicate whether or not
21 the token is being used in the correct payment channel; and

22 transmit a modified authorization request message including the credential to an
23 authorizing entity computer, which authorizes the interaction based on the contents of the
24 modified authorization request message indicating that the token is being used in the correct
25 payment channel.

1 10. The processing network computer of claim 9, wherein the non-transitory
2 computer readable medium further comprises a biller directory which includes addresses of
3 billers and biller identifiers.

1 11. The processing network computer of claim 9, wherein the token is a substitute for
2 the credential.

1 12. The processing network computer of claim 9, wherein the token has a same
2 format as the credential.

1 13. A method comprising:

2 receiving, by an authorizing entity computer from a user computing device, a request to
3 pay a bill from a biller computer using a credential;

4 transmitting, by the authorizing entity computer, an initiation message to a processor
5 computer which stores a token associated with the credential or a token reference identifier
6 usable to identify the token, wherein the processor computer transmits the token or the token
7 reference identifier to a processing network computer configured to generate a token cryptogram,
8 which encrypts the token and a payment channel indicator, transmit the token and the token
9 cryptogram to the biller computer,

10 which uses the token and the token cryptogram to process the bill, by generating an authorization
11 request message comprising the token, the token cryptogram, and a channel indicator for an
12 interaction involving the bill, receive the authorization request message comprising the token, the
13 token cryptogram, and the channel indicator, decrypt the token cryptogram to obtain a decrypted
14 payment channel indicator, validate the token cryptogram using the channel indicator from the
15 authorization request message and the decrypted payment channel indicator, to determine
16 whether the token is being used in a correct payment channel, modify the authorization request
17 message to include the credential associated with the token, wherein contents of the modified
18 authorization request message indicate whether or not the token is being used in the correct
19 payment channel, and transmit a modified authorization request message including the credential
20 to the authorizing entity computer;
21 authorizing, by the authorizing entity computer, the interaction based on the contents of
22 the modified authorization request message indicating that the token is being used in the correct
23 payment channel; and
24 receiving, by the authorizing entity computer from the biller computer, a confirmation
25 that the bill has been processed.

1 14. The method of claim 13, further comprising, receiving the bill from the biller
2 computer, prior to receiving the request to pay the bill; and
3 presenting the bill to an application on the user computing device.

1 15. The method of claim 13, wherein the processor computer stores the token
2 reference identifier associated with the token, and
3 wherein the processor computer transmits the token reference identifier to the processing
4 network computer, which uses the token reference identifier to retrieve the token and then uses
5 the token to process the bill.

1 16. The method of claim 13, wherein the processor computer stores the token, and
2 wherein the processor computer transmits the token to the processing network computer, which
3 uses the token to process the bill.

1 17. The method of claim 13, further comprising:

2 providing an interface to the user computing device that allows a user of the user
3 computing device to select the credential from a list of different types of credentials.

1 18. The method of claim 13, further comprising:
2 presenting a user interface on the user computing device that allows a user of the user
3 computing device to select a biller from a list of different billers; and
4 receiving, through the user interface, a user input selecting the biller associated with the
5 biller computer.