

COMPUTER-IMPLEMENTED METHODS AND NON-TRANSITORY COMPUTER-  
READABLE MEMORIES STORING COMPUTER PROGRAM INSTRUCTIONS FOR  
PERFORMING SECONDARY AUTHENTICATION

ABSTRACT

5           A computer-implemented method for performing secondary authentication and  
non-transitory computer-readable memories storing computer program instructions for  
secondary authentication are provided. The method for performing secondary  
authentication includes executing on one or more processors of one or more servers (14)  
the steps of: detecting (52) an operating environment of an authentication page after  
10 primary authentication (54) is completed; performing (58) a handshake operation with a  
pre-authenticated mobile device (12) if a first determination is made that the detected  
operating environment of the authentication page is not a mobile environment or if a  
second determination is made that the secondary authentication is not being performed  
on the pre-authenticated mobile device (12); receiving (66) a series of encoded quick  
15 response (QR) codes from the pre-authenticated mobile device (12); decoding (68) the  
encoded QR codes with the authentication page; displaying (70) the decoded QR codes  
in the authentication page; and receiving (76) a secondary authentication decision from  
the pre-authenticated mobile device (12).

[FIG. 2]