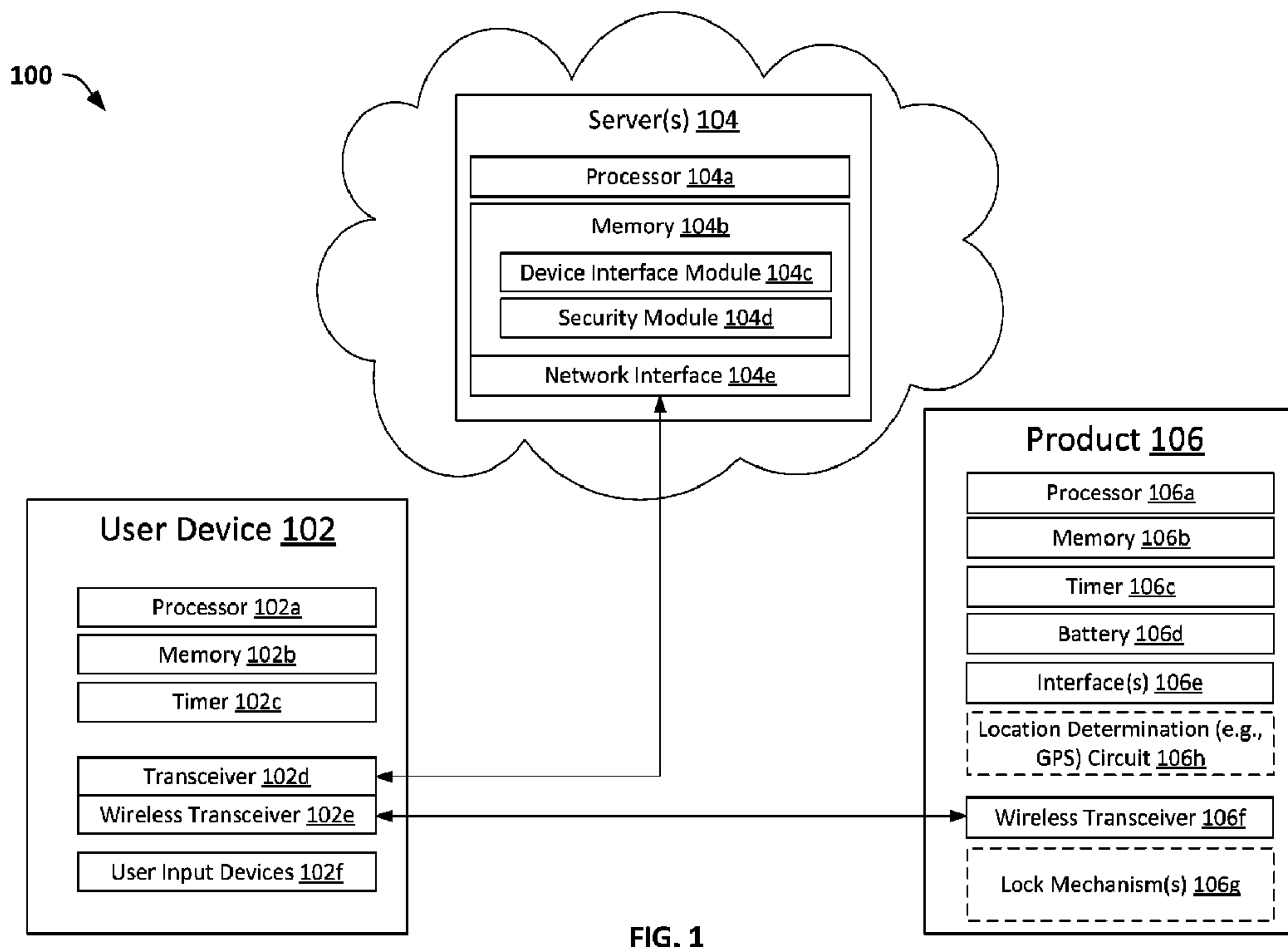




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(54) **Titre : SUIVI DE POSITION POUR DISPOSITIF DE VERROUILLAGE**
(54) **Title: LOCATION TRACKING FOR LOCKING DEVICE**



(57) Abrégé(suite)/Abstract(continued):

determination circuit configured to determine a location of the electronic locking device. The processor is configured to receive one or more location data items indicating the location of the electronic locking device at one or more times, to store the one or more location data items in the memory, and to transmit the one or more location data items from the memory to a mobile device via the wireless transceiver.

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LOCATION TRACKING FOR LOCKING DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application is an International Application which claims the benefit of and priority to U.S. Patent Application No. 14/447,489, filed July 30, 2014, titled “Location Tracking for Locking Device,” which is hereby incorporated by reference in its entirety.

BACKGROUND

[0002] Recently, electronic locks have become commercially available. Such electronic locks may be capable of being controlled by a user device over a wireless connection (e.g., Wi-Fi, etc.). However, the communications that are used to interface with such electronic locks are often not overly secure, which increases the risk that an unauthorized user may gain control of the lock.

SUMMARY

[0003] Disclosed herein are methods, systems, and computer-readable media for wireless key management for authentication. One embodiment relates to a method of authentication. The method comprises: transmitting, by a mobile device, a request to a product; transmitting, by the product, a security challenge to the mobile device; transmitting, by the mobile device, a response to the challenge and an encrypted user profile for the product, wherein the response comprises data generated with an access key that is stored by both the mobile device and the product, and wherein the user profile is encrypted by a server using a secret key that is stored by the server and the product; verifying, by the product, the response to the challenge, wherein the response is verified using the access key; validating, by the product in response to verifying the response, data from the mobile device. Validating the data comprises: decrypting the encrypted user profile, wherein the user profile is decrypted using the secret key; and verifying the decrypted user profile. The method further comprises initiating, by the product in response to validating the data, an action of the product as specified by the request.

[0004] One embodiment relates to a method of authentication. The method comprises: transmitting, by a mobile device, a request to a locking device; transmitting, by the locking

