# EXHIBIT D

### (12) United States Patent Koh et al.

#### US 9,240,009 B2 (10) **Patent No.:** (45) Date of Patent: Jan. 19, 2016

### (54) MOBILE DEVICES FOR COMMERCE OVER UNSECURED NETWORKS

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 227 days.

- (21) Appl. No.: 13/350,835
- Filed: Jan. 16, 2012 (22)
- (65)**Prior Publication Data**

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### Related U.S. Application Data

- Continuation-in-part of application No. 11/534,653, filed on Sep. 24, 2006, now Pat. No. 8,118,218, and a continuation-in-part of application No. 11/739,044, filed on Apr. 23, 2007.
- (51) **Int. Cl.** G06Q 20/00 G06Q 20/34

(2012.01)(2012.01)(2012.01)

G06Q 20/36 G06Q 30/06 (2012.01)

(52) U.S. Cl.

CPC ........... G06Q 20/3552 (2013.01); G06Q 20/352 (2013.01); G06Q 20/3672 (2013.01); G06Q 30/0601 (2013.01)

### Field of Classification Search

CPC ..... G06F 21/34; G07F 7/1008; G06Q 20/341; G06Q 20/3674; G06Q 20/382; G06Q 20/20; G06Q 20/32; G06Q 20/367; G06Q 20/3672 See application file for complete search history.

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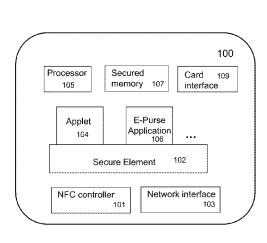
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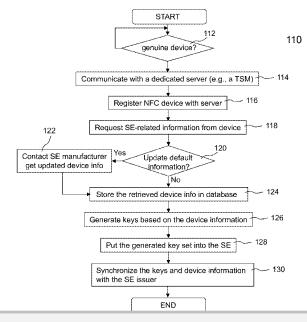
Primary Examiner — Christopher Stanford (74) Attorney, Agent, or Firm — Joe Zheng

### **ABSTRACT**

Techniques for managing modules or applications installed in a mobile device are described. To provide authentic and secured transactions with another device, each of the installed applications is provisioned with a server through data communication capability in a mobile device. A provisioned application is associated with the personalized secure element in the mobile device and works with a set of keys that are generated in accordance with a set of keys from the personalized secure element. Further management of controlling an installed application is also described.

### 17 Claims, 25 Drawing Sheets





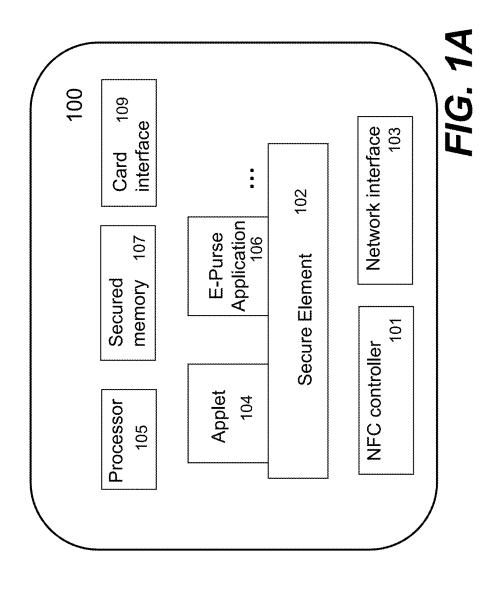


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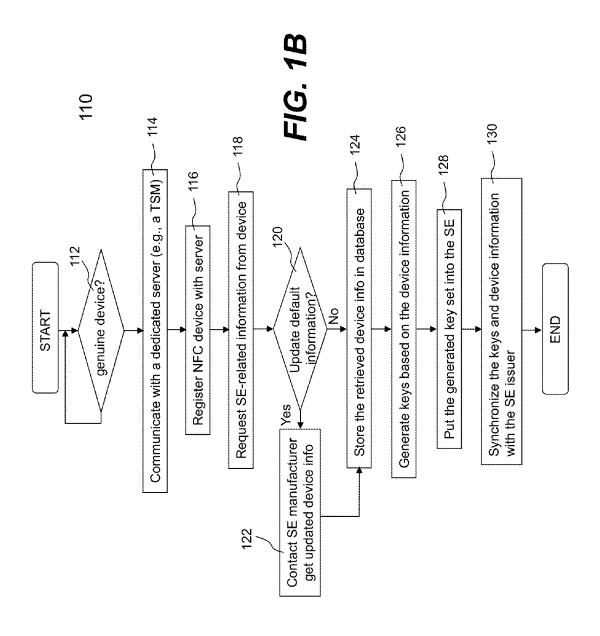


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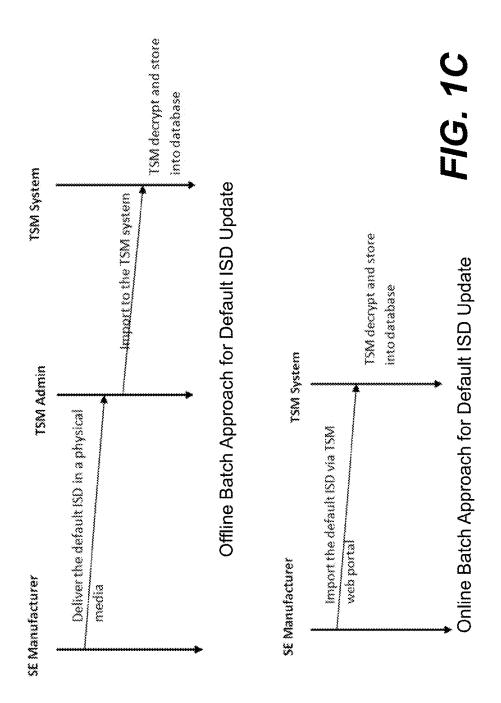


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