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(54) **OVER-THE-AIR CARD PROVISIONING SYSTEM AND METHOD**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,276,311 A * 1/1994 Hennige 235/380
5,590,038 A * 12/1996 Pitroda 705/41
6,000,608 A * 12/1999 Dorf 235/380
6,012,634 A * 1/2000 Brogan et al. 235/380
6,199,161 B1 * 3/2001 Ahvenainen 713/155
6,290,127 B1 * 9/2001 Schilling 235/382.5
6,360,954 B1 * 3/2002 Barnardo 235/492
6,405,181 B1 * 6/2002 Lent et al. 705/38
6,466,777 B1 * 10/2002 Urita 455/410
6,591,098 B1 * 7/2003 Shieh et al. 455/419
6,631,849 B1 * 10/2003 Blossom 235/492
6,755,342 B1 * 6/2004 Jordan, Jr. 235/380
6,817,521 B1 * 11/2004 Matada 235/380
6,938,821 B1 * 9/2005 Gangi 235/380
2001/0013551 A1 * 8/2001 Ramachandran 235/472.02
2002/0052193 A1 * 5/2002 Chetty 455/412
2002/0088852 A1 * 7/2002 Ohta et al. 235/381
2002/0128982 A1 * 9/2002 Gefwert et al. 705/67
2002/0136199 A1 * 9/2002 Hartmaier 370/352
2002/0195487 A1 * 12/2002 Hosogoe 235/380
2003/0045328 A1 * 3/2003 Natsuno 455/558
2003/0125054 A1 * 7/2003 Garcia 455/466
2003/0161503 A1 * 8/2003 Kramer 382/115
2003/0220876 A1 * 11/2003 Burger et al. 705/50
2003/0233320 A1 * 12/2003 Connor 705/39
2004/0044622 A1 * 3/2004 Blott et al. 705/40
2004/0122685 A1 * 6/2004 Bunce 705/1
2004/0139024 A1 * 7/2004 So 705/51
2004/0159700 A1 * 8/2004 Khan et al. 235/380
2004/0198333 A1 * 10/2004 Zanaty 455/418
2004/0204070 A1 * 10/2004 August et al. 455/557

FOREIGN PATENT DOCUMENTS

WO WO 2004 105421 A2 * 12/2004

* cited by examiner

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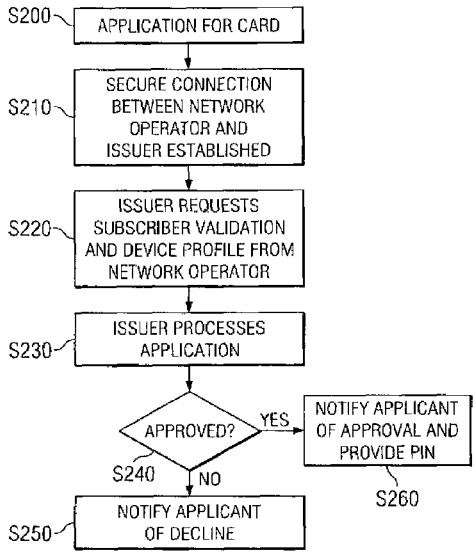
(57) **ABSTRACT**

A system for over-the-air provisioning of a card on a wireless device is provided. The system includes a wireless device, a provisioning system in communication with the wireless device, and an issuer system to maintain an account related to a card. The issuer system is operable to wirelessly enable the card on the wireless device via the provisioning system. A method for over-the-air card provisioning of a wireless device is also provided. The method includes authorizing, by an issuer, an account related to a card, and wirelessly provisioning the card on a wireless device.

56 Claims, 5 Drawing Sheets