(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 June 2003 (19.06.2003)

PCT

(10) International Publication Number
WO 03/050995 A1

(51) International Patent Classification[7]: H04L 9/00, H04K 1/00

(21) International Application Number: PCT/US02/39208

(22) International Filing Date: 5 December 2002 (05.12.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/340,172	7 December 2001 (07.12.2001)	US
60/350,401	17 January 2002 (17.01.2002)	US
10/077,651	14 February 2002 (14.02.2002)	US
60/358,471	19 February 2002 (19.02.2002)	US

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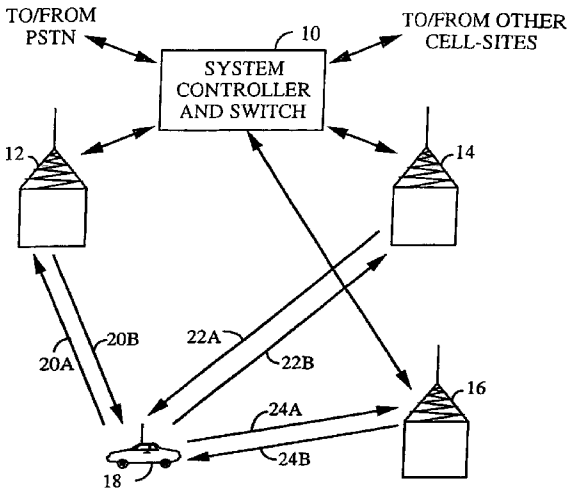
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: AUTHENTICATION IN A HYBRID COMMUNICATIONS NETWORK



(57) Abstract: A method of authenticating a mobile station (18) from a first base station (12) in a first cellular communications system controlled by a first mobile switching control station (10) to a second base station (14) in a second, different cellular system controlled by a second mobile switching control station is described. The method comprises generating at the second cellular communication system an authentication code as the result of applying an algorithm to a private key assigned to the mobile station for the second cellular communications system and a random number generated by the second cellular communications system. An authentication code is also generated at the first cellular communication system as the result of applying an algorithm to the private key and the random number. The authentication code generated at the first cellular communication system is then transmitted to a mobile station in a data packet, and, from there, the authentication code is transmitted to the second cellular communication system. The authentication code generated at the first cellular communications system is then compared with the authentication code generated at the second cellular communications system.

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European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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