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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
15 January 2004 (15.01.2004)

PCT

(10) International Publication Number
WO 2004/006538 A1

(51) International Patent Classification[7]: H04L 29/06

(21) International Application Number:
PCT/US2003/021233

(22) International Filing Date: 2 July 2003 (02.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/188,636 2 July 2002 (02.07.2002) US

(71) Applicant: **QUALCOMM INCORPORATED** [US/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US).

(72) Inventors: **ABROL, Nischal**; 7260 Calle Cristobal, #41, San Diego, CA 92126 (US). **LIOY, Marcello**; 11929 Miro Circle, San Diego, CA 92131 (US). **VEEREPALLI, Sivaramakrishna**; 13310 Carriage Heights Circle, Poway, CA 92064 (US).

(74) Agents: **WADSWORTH, Philip R.** et al.; Qualcomm Incorporated, 5775 Morehouse Drive, San Diego, CA 92121 (US).

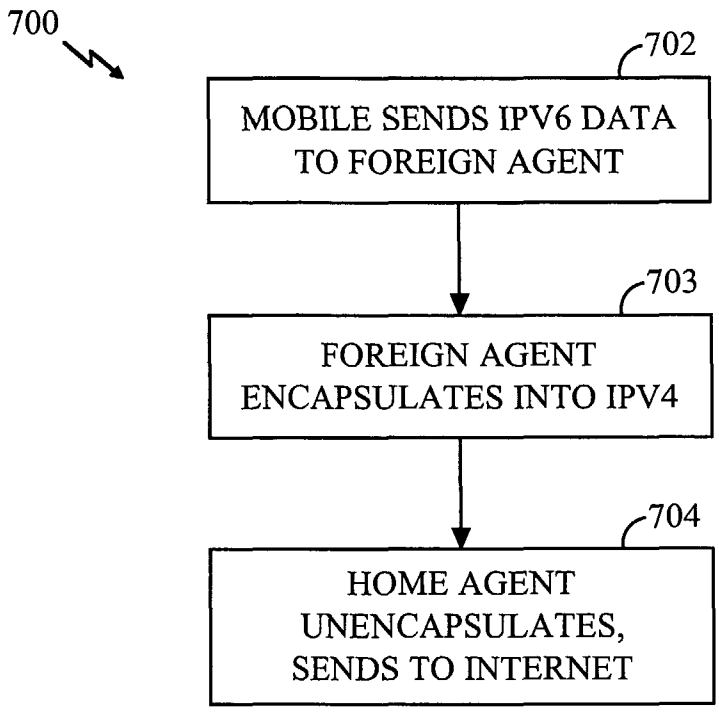
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH,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

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: METHOD FOR ENCAPSULATING INTERNET PROTOCOL MESSAGES




(57) Abstract: In order to assist an exchange of data between one or mobile communications devices and the Internet in a mobile communications network, bidirectional tunneling of IPv6 messages inside IPv4 messages is performed between a home agent and one or more foreign agents. Optionally, where a mobile communications device is a wireless mobile unit, the mobile unit itself automatically engages in bidirectional tunneling of IPv6 messages inside IPv4 messages with the home agent whenever the wireless mobile unit detects loss of wireless coverage in the mobile communications network and presence of coverage in a type of wireless network lacking foreign agent functionality.

WO 2004/006538 A1