

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 September 2008 (25.09.2008)

PCT

(10) International Publication Number
WO 2008/115827 A3

(51) International Patent Classification:

H04L 25/02 (2006.01) **H04L 1/00** (2006.01)
H04L 27/26 (2006.01) **H04L 5/02** (2006.01)
H04Q 7/32 (2006.01)

(21) International Application Number:

PCT/US2008/057125

(22) International Filing Date: 14 March 2008 (14.03.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/895,390 16 March 2007 (16.03.2007) US
12/042,864 5 March 2008 (05.03.2008) US

(71) Applicant (for all designated States except US): **QUALCOMM INCORPORATED** [US/US]; ATTN: International IP Administration, 5775 Morehouse Drive, San Diego, California 92121-1714 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DAYAL, Pranav** [IN/US]; 5775 Morehouse Drive, San Diego, California 92121-1714 (US). **Ji, Tingfang** [CN/US]; 5775 Morehouse Drive, San Diego, California 92121-1714 (US).

(74) Agent: **ZHU, Peng**; QUALCOMM INCORPORATED, ATTN: International IP Administration, 5775 Morehouse Drive, San Diego, California 92121-1714 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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

(88) Date of publication of the international search report:

8 January 2009

(54) Title: PILOT TRANSMISSION BY RELAY STATIONS IN A MULTIHOP RELAY COMMUNICATION SYSTEM

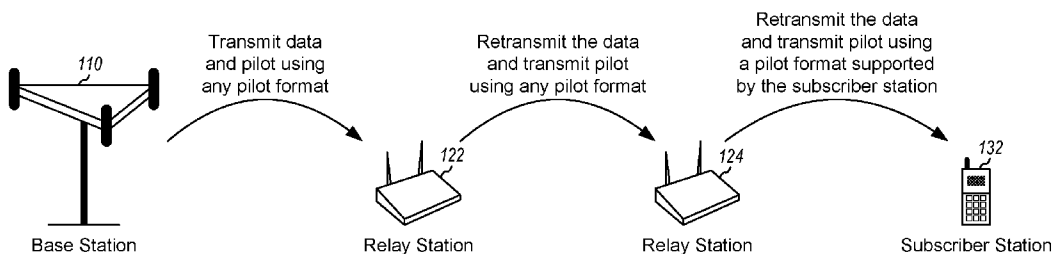


FIG. 11

(57) Abstract: Techniques to support multihop relay in a wireless communication system are described. In an aspect, a relay station receives data and a first pilot from an upstream station, e.g., a base station or another relay station. The relay station derives a channel estimate based on the first pilot and performs detection for the data based on the channel estimate. The relay station resends the data and sends a second pilot to a downstream station, e.g., a subscriber station or another relay station. Each pilot may be sent in accordance with a pilot format selected for that pilot. The first and second pilots may be sent using the same or different pilot formats. The relay station may receive channel information from the second station and may forward the channel information to the first station and/or select a rate for data transmission to the second station based on the channel information.

WO 2008/115827 A3