

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 July 2008 (17.07.2008)

PCT

(10) International Publication Number
WO 2008/086149 A3

(51) International Patent Classification:

H04Q 7/38 (2006.01)

(21) International Application Number:

PCT/US2008/050187

(22) International Filing Date: 4 January 2008 (04.01.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/883,387 4 January 2007 (04.01.2007) US

60/883,758 5 January 2007 (05.01.2007) US

11/968,642 2 January 2008 (02.01.2008) US

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

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KHANDEKAR, Aamod** [IN/US]; 5775 Morehouse Drive, San Diego, California 92121 (US). **GOROKHOV, Alexei** [FR/US]; 5775

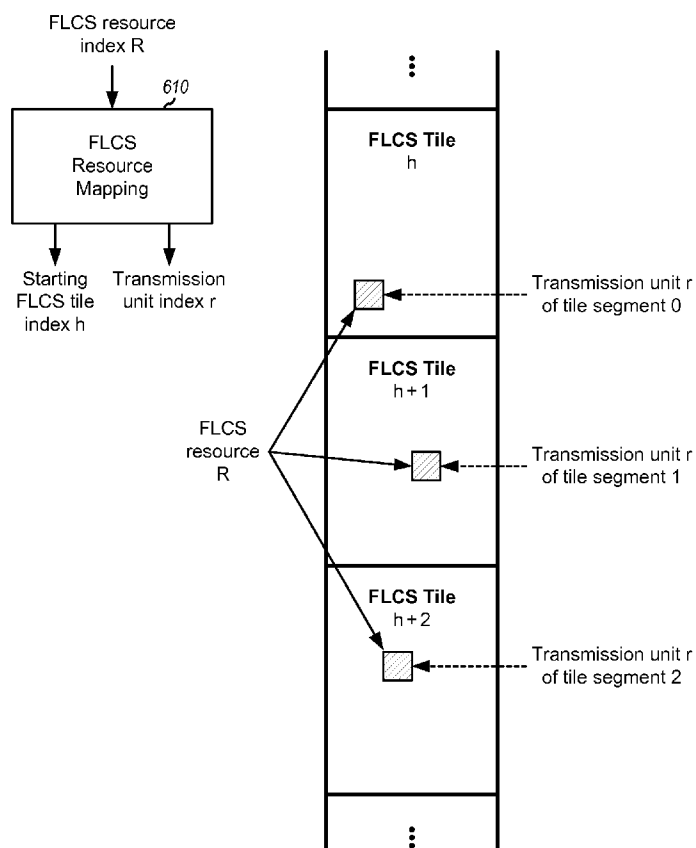
Morehouse Drive, San Diego, California 92121 (US). **BHUSHAN, Naga** [US/US]; 5775 Morehouse Drive, San Diego, California 92121 (US). **SARKAR, Sandip** [IN/US]; 5775 Morehouse Drive, San Diego, California 92121 (US). **PALANKI, Ravi** [IN/US]; 5775 Morehouse Drive, San Diego, California 92121 (US).

(74) Agents: **BACHAND, Richard A.** et al.; International IP Administration, 5775 Morehouse Drive, San Diego, California 92121 (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.

[Continued on next page]

(54) Title: CONTROL RESOURCE MAPPING FOR A WIRELESS COMMUNICATION SYSTEM



(57) Abstract: Techniques for sending control information in a wireless communication system are described. A control segment may include tiles, and each tile may include a number of transmission units. A number of control resources may be defined and mapped to the transmission units for the control segment. For symmetric mapping, multiple sets of control resources may be formed, and each batch of L consecutive sets of S control resources may be mapped to S transmission units at the same location in the L tiles. For localized mapping, each set of S control resources may be mapped to a cluster of S adjacent transmission units in one tile. For distributed mapping, each control resource may be mapped to one transmission unit in one tile. For diversity, each control resource may be mapped to multiple (e.g., three) transmission units in at least one tile.



(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:**

2 October 2008