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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
30 December 2009 (30.12.2009)

PCT

(10) International Publication Number
WO 2009/158050 A3

(51) International Patent Classification:
H04W 72/04 (2009.01) *H04W 88/04* (2009.01)
H04W 84/18 (2009.01)

(21) International Application Number:
PCT/US2009/036422

(22) International Filing Date:
6 March 2009 (06.03.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/075,868 26 June 2008 (26.06.2008) US
12/390,092 20 February 2009 (20.02.2009) US

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

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **CHAKRABARTI, Arnab** [IN/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **STAMOULIS, Anastasios** [GR/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **LIN, Dexu** [CA/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **AZARIAN YAZDI, Kambiz** [IR/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **JI, Tingfang** [CN/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US).

(74) Agent: **CORIE, Florin, C.**; Attn: International IP Administration, 5775 Morehouse Drive, San Diego, CA 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, ST, 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, MK, 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))*

[Continued on next page]

(54) Title: FAIR RESOURCE SHARING IN WIRELESS COMMUNICATIONS

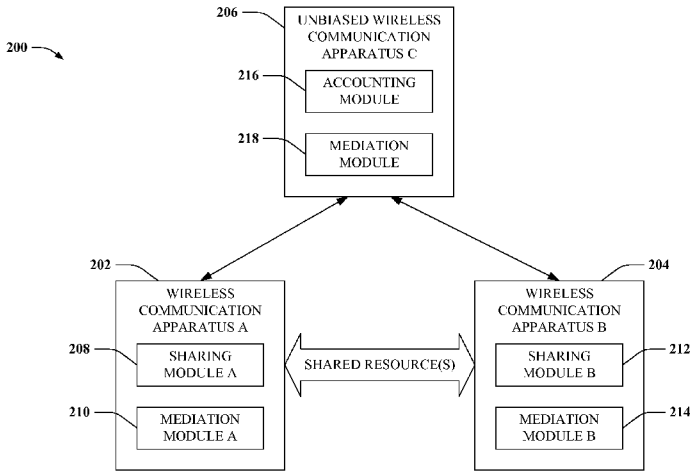


FIG. 2

(57) Abstract: Providing for fair resource sharing among wireless nodes in a wireless communication environment is described herein. By way of example, fairness can comprise establishing a set of resource sharing credits for wireless nodes. By expending credits, a node can borrow a resource of another node, to enable or enhance operation of the borrowing node. Credits for the borrowing node are decreased based on consumption of a shared resource, or credits for the lending node are increased based on such consumption, or both. Once an amount of credits expires, a node can be restricted from borrowing further resources until enough resources are lent to build up a suitable amount of credits. Accordingly, fairness can comprise correlating shared resource consumption with shared resource provisioning, to encourage participation in cooperative wireless communications.

WO 2009/158050 A3

WO 2009/158050 A3

Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
29 July 2010