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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
21 January 2010 (21.01.2010)

PCT

(10) International Publication Number
WO 2010/008856 A1

(51) International Patent Classification:
H04W 68/00 (2009.01)

(21) International Application Number:
PCT/US2009/048316

(22) International Filing Date:
23 June 2009 (23.06.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

61/074,978	23 June 2008 (23.06.2008)	US
61/079,393	9 July 2008 (09.07.2008)	US
61/087,145	7 August 2008 (07.08.2008)	US
12/487,575	18 June 2009 (18.06.2009)	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)*: **SINGH, Damanjit** [IN/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **HORN, Gavin, B.** [US/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **SONG, Osok** [KR/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **TINNAKORNSRISUPHAP, Peerapol** [TH/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **GUPTA, Rajarshi** [IN/US]; 5775 Morehouse, 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, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,

[Continued on next page]

(54) Title: CONCENTRATOR FOR MULTIPLEXING ACCESS POINT TO WIRELESS NETWORK CONNECTIONS

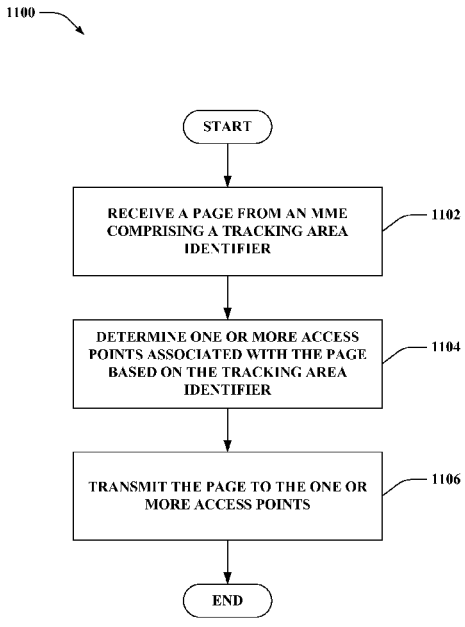


FIG. 11

(57) Abstract: Systems and methodologies are described that facilitate multiplexing communications from multiple downstream access points to one or more mobility management entities (MME). In particular, a concentrator component is provided that can establish a single transport layer connection with an MME along with multiple application layer connections over the single transport layer connection for each of multiple downstream access points and/or related mobile devices. The downstream access points and/or mobile devices can provide identifiers, such as tracking identifiers, to the concentrator component, which can utilize the identifiers to track communications with the MME. In this regard, the MME can send paging messages, and the concentrator component can determine downstream access points related to the paging messages based on a stored association with a tracking identifier in the paging message.

WO 2010/008856 A1

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 the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

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