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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
11 December 2008 (11.12.2008)

PCT

(10) International Publication Number
WO 2008/151302 A1

(51) International Patent Classification:
H04B 1/707 (2006.01) *H04L 27/26* (2006.01)

(21) International Application Number:
PCT/US2008/065985

(22) International Filing Date: 5 June 2008 (05.06.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/942,201	5 June 2007 (05.06.2007)	US
60/945,073	19 June 2007 (19.06.2007)	US
12/133,164	4 June 2008 (04.06.2008)	US

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

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **MALLADI, Durga Prasad** [US/US]; 5775 Morehouse Drive, San Diego, California 92121 (US). **MONTOJO, Juan** [ES/US]; 5775 Morehouse Drive, San Diego, California 92121 (US).

(74) Agent: **PATEL, Milan, I.**; Attn: International IP Administration, 5775 Morehouse Drive, San Diego, Califonia 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.

(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),

[Continued on next page]

(54) Title: PSEUDO-RANDOM SEQUENCE MAPPING IN WIRELESS COMMUNICATIONS

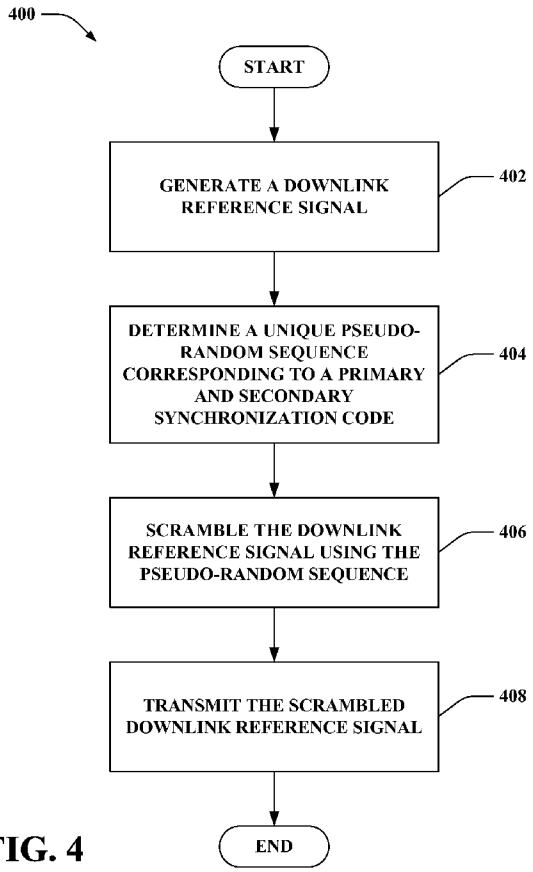


FIG. 4

(57) Abstract: Systems and methodologies are described that facilitate scrambling of downlink reference signals utilizing a pseudo-random sequence (PRS) corresponding to a primary synchronization code (PSC) and secondary synchronization code (SSC) combination. Utilization of the combination allows for orthogonal sequencing to be removed from the scrambling. This can be beneficial, for example, where resources required for orthogonalizing the reference signal outweigh the benefit of utilizing the orthogonal sequences. In such scenarios, selective scrambling can be utilized such that the orthogonal sequence or instead the PSC/SSC combination can be provided to leverage advantages of both mechanisms in the given scenarios.

WO 2008/151302 A1

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*