

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 June 2008 (12.06.2008)

PCT

(10) International Publication Number
WO 2008/070554 A3

(51) International Patent Classification:

G10L 21/02 (2006.01) **G06F 17/10** (2006.01)
G06F 7/38 (2006.01)

(21) International Application Number:

PCT/US2007/086076

(22) International Filing Date:

30 November 2007 (30.11.2007)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/868,476 4 December 2006 (04.12.2006) US
11/669,407 31 January 2007 (31.01.2007) 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): **KANDHADAI, Ananthapadmanabhan A.** [IN/US]; 5775 Morehouse Drive, San Diego, California 92121 (US). **RAJENDRAN, Vivek** [IN/US]; 5775 Morehouse Drive, San Diego, California 92121 (US).

(74) Agents: **BACHAND, Richard A.** et al.; 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, 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.

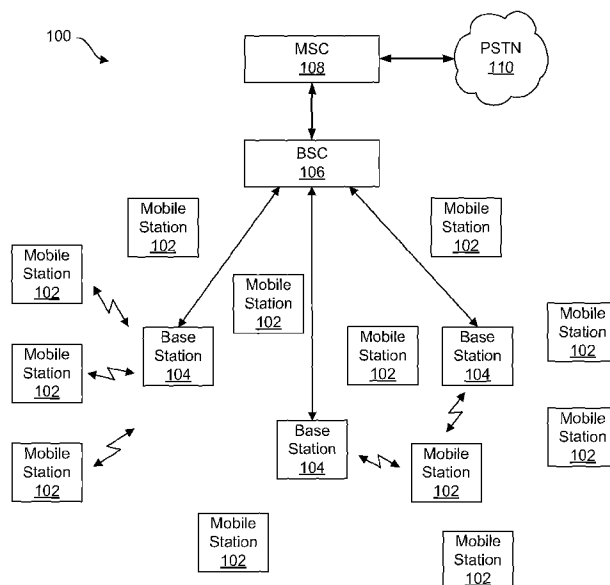
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, 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))

[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR DYNAMIC NORMALIZATION TO REDUCE LOSS IN PRECISION FOR LOW-LEVEL SIGNALS



(57) Abstract: A normalization factor for a current frame of a signal may be determined. The normalization factor may depend on an amplitude of the current frame of the signal. The normalization factor may also depend on values of states after one or more operations were performed on a previous frame of a normalized signal. The current frame of the signal may be normalized based on the normalization factor that is determined. The states' normalization factor may be adjusted based on the normalization factor that is determined.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

Published:

- *with international search report*

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

12 September 2008