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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 April 2008 (17.04.2008)

PCT

(10) International Publication Number
WO 2008/045846 A1

(51) International Patent Classification:
G10L 19/14 (2006.01)

(21) International Application Number:
PCT/US2007/080744

(22) International Filing Date: 8 October 2007 (08.10.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/828,816 10 October 2006 (10.10.2006) US
60/942,984 8 June 2007 (08.06.2007) 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)*: **KRISHNAN, Venkatesh** [IN/US]; 5775 Morehouse Drive, San Diego, California 92121 (US). **RAJENDRAN, Vivek** [IN/US]; 5775 Morehouse Drive, San Diego, California 92121 (US). **KANDHADAI, Ananthapadmanabhan, A.** [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).

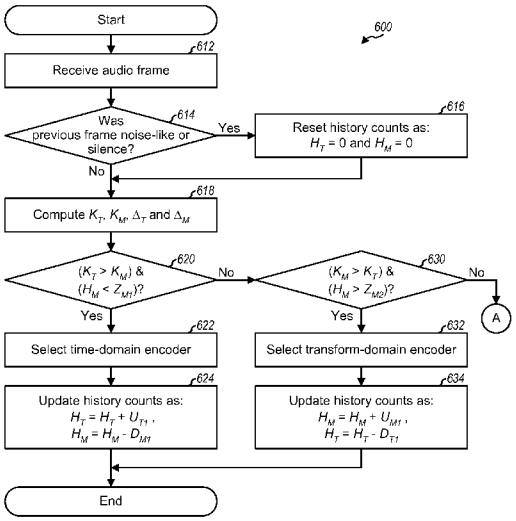
Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

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

[Continued on next page]

(54) **Title:** METHOD AND APPARATUS FOR ENCODING AND DECODING AUDIO SIGNALS



(57) **Abstract:** Techniques for efficiently encoding an input signal are described. In one design, a generalized encoder encodes the input signal (e.g., an audio signal) based on at least one detector and multiple encoders. The at least one detector may include a signal activity detector, a noise-like signal detector, a sparseness detector, some other detector, or a combination thereof. The multiple encoders may include a silence encoder, a noise-like signal encoder, a time-domain encoder, a transform-domain encoder, some other encoder, or a combination thereof. The characteristics of the input signal may be determined based on the at least one detector. An encoder may be selected from among the multiple encoders based on the characteristics of the input signal. The input signal may be encoded based on the selected encoder. The input signal may include a sequence of frames, and detection and encoding may be performed for each frame.

WO 2008/045846 A1

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*