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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 January 2010 (14.01.2010)

PCT

(10) International Publication Number
WO 2010/003532 A1

(51) International Patent Classification:
G10L 19/02 (2006.01) *G10L 19/14* (2006.01)
G10L 19/04 (2006.01)

(21) International Application Number:
PCT/EP2009/004374

(22) International Filing Date:
17 June 2009 (17.06.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/079,852 11 July 2008 (11.07.2008) US

(71) Applicant *(for all designated States except US)*: **FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.** [DE/DE]; Hansastrasse 27c, 80686 München (DE).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **FUCHS, Guillaume** [FR/DE]; Parkstrasse 12, 90409 Nürnberg (DE). **LECOMTE, Jérémie** [FR/DE]; Sulzbacher Strasse 39, 90489 Nürnberg (DE). **BAYER, Stefan** [DE/DE]; Dortmunder Strasse 14, 90425 Nürnberg (DE). **GEIGER, Ralf** [DE/DE]; Maxtorgraben 29, 90409 Nürnberg (DE). **MULTRUS, Markus** [DE/DE]; Etzlaubweg 7, 90469 Nürnberg (DE). **SCHULLER, Gerald** [DE/DE]; Leopoldstrasse 13, 99089 Erlangen (DE). **HIRSCHFELD, Jens** [DE/DE]; Steinweg 32, 36266 Heringen (DE).

(74) Agents: **ZINKLER, Franz** et al.; Schoppe, Zimmermann, Stöckeler & Zinkler, Postfach 246, 82043 Pullach bei München (DE).

(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, 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,

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR ENCODING/DECODING AN AUDIO SIGNAL USING AN ALIASING SWITCH SCHEME

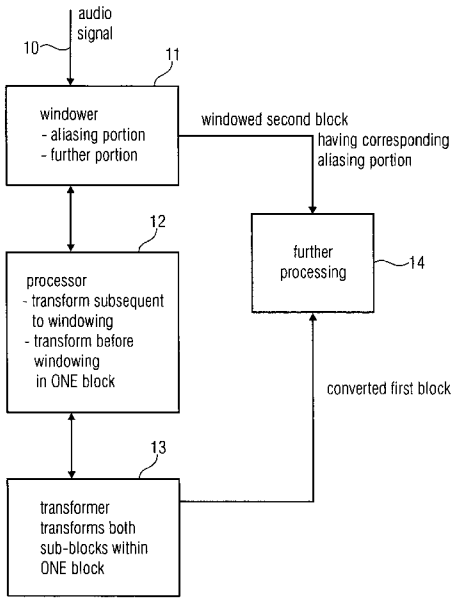


FIG 1A
(encoder side)

(57) Abstract: An apparatus for encoding an audio signal comprises the windower (11) for windowing a first block of the audio signal using an analysis window having an aliasing portion and a further portion. The apparatus furthermore comprises a processor (12) for processing the first sub-block of the audio signal associated with the aliasing portion by transforming the sub-block from a domain into a different domain subsequent to windowing the first sub-block to obtain the processed first sub-block, and for processing a second sub-block of the audio signal associated with the further portion by transforming the second sub-block from the domain into the different domain before windowing the second sub-block to obtain a processed second sub-block. The apparatus furthermore comprises a transformer (13) for converting the processed first sub-block and the processed second sub-block from the different domain into a further different domain using the same block transform rule to obtain a converted first block which may then be compressed using any of the well-known data compression algorithms. Thus, a critically sampled switch between two coding modes can be obtained, since aliasing portions occurring in two different domains are matched to each other.

WO 2010/003532 A1

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).

Published:

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