

(43) International Publication Date
15 September 2011 (15.09.2011)(10) International Publication Number
WO 2011/110500 A1

(51) International Patent Classification:

G10L 19/02 (2006.01) **G10L 21/04** (2006.01)
G10L 21/02 (2006.01)

(21) International Application Number:

PCT/EP2011/053315

(22) International Filing Date:

4 March 2011 (04.03.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/312,127 9 March 2010 (09.03.2010) US

(71) Applicants (for all designated States except US):

FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V. [DE/DE]; Hansastraße 27c, 80686 München (DE). **DOLBY INTERNATIONAL AB** [NL/NL]; Atlas Complex, Africa Building, Hoogoorddreef 9, NL-1101 Amsterdam (NL).

(72) Inventors; and

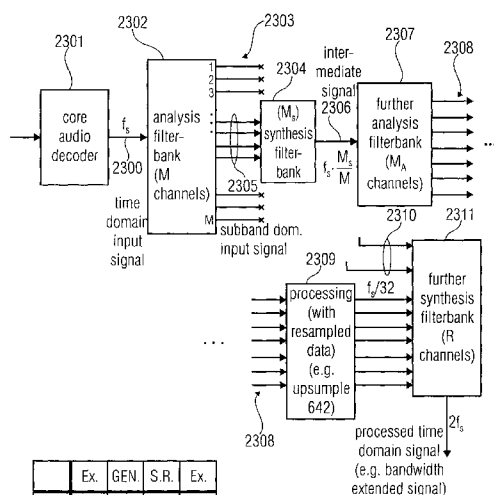
(75) Inventors/Applicants (for US only): **VILLEMOES, Lars** [DK/SE]; Mandolinvaegen 22, S-175 56 Jaerfaella (SE). **EKSTRAND, Per** [SE/SE]; Soedermannagatan 45, S-116 40 Stockholm (SE). **DISCH, Sascha** [DE/DE];Turnstrasse 7, 90763 Fürth (DE). **NAGEL, Frederik** [DE/DE]; Wilhelmshavener Strasse 72, 90425 Nürnberg (DE). **WILDE, Stephan** [DE/DE]; Geranienweg 17, 90530 Wendelstein (DE).(74) Agents: **ZINKLER, Franz** et al.; P.O. Box 246, 80243 Pullach (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, TH, 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, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, 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, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR PROCESSING AN INPUT AUDIO SIGNAL USING CASCADED FILTERBANKS



	Ex.	GEN.	S.R.	Ex.
M	32	big	f_s/M	$f_s/32$
M_s	12	small	f_s/M_s	
M_A	24	medium	f_s/M_A	$f_s/64$
R	64	very large		

FIG 23

(57) Abstract: An apparatus for processing an input audio signal (2300) relies on a cascade of filterbanks, the cascade comprising a synthesis filterbank (2304) for synthesizing an audio intermediate signal (2306) from the input audio signal (2300), the input audio signal being represented by a plurality of first subband signals (2303) generated by an analysis filterbank (2302), wherein a number of filterbank channels of the synthesis filterbank (2304) is smaller than a number of channels of the analysis filterbank (2302). The apparatus furthermore comprises a further analysis filterbank (2307) for generating a plurality of second subband signals (2308) from the audio intermediate signal (2306), wherein the further analysis filterbank has a number of channels being different from the number of channels of the synthesis filterbank (2304), so that a sampling rate of a subband signal of the plurality of second subband signals (2308) is different from a sampling rate of a first subband signal of the plurality of first subband signals (2303).



Published:

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