



- (51) **International Patent Classification:**
G10L 19/025 (2013.01) *G10L 21/038* (2013.01)
- (21) **International Application Number:**
PCT/EP2014/051635
- (22) **International Filing Date:**
28 January 2014 (28.01.2014)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/758,078 29 January 2013 (29.01.2013) US
- (71) **Applicant:** FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V. [DE/DE]; Hansastraße 27c, 80686 München (DE).
- (72) **Inventors:** DISCH, Sascha; Wilhelmstrasse 70, 90766 Fürth (DE). HELMRICH, Christian; Hauptstraße 68, 91054 Erlangen (DE). MULTRUS, Markus; Etzlaubweg 7, 90469 Nürnberg (DE). SCHNELL, Markus; Rieterstr. 5, 90419 Nürnberg (DE). TRITTHART, Arthur; Atzelsberger Steige 1, 91054 Erlangen (DE).
- (74) **Agents:** BURGER, Markus et al.; Schoppe, Zimmermann, Stöckeler & Zinkler, Postfach 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, BN, 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, IR, IS, JP, KE, KG, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, KM, ML, MR, NE, SN, TD, TG).

Published:

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

(54) **Title:** AUDIO ENCODERS, AUDIO DECODERS, SYSTEMS, METHODS AND COMPUTER PROGRAMS USING AN INCREASED TEMPORAL RESOLUTION IN TEMPORAL PROXIMITY OF ONSETS OR OFFSETS OF FRICATIVES OR AFFRICATES

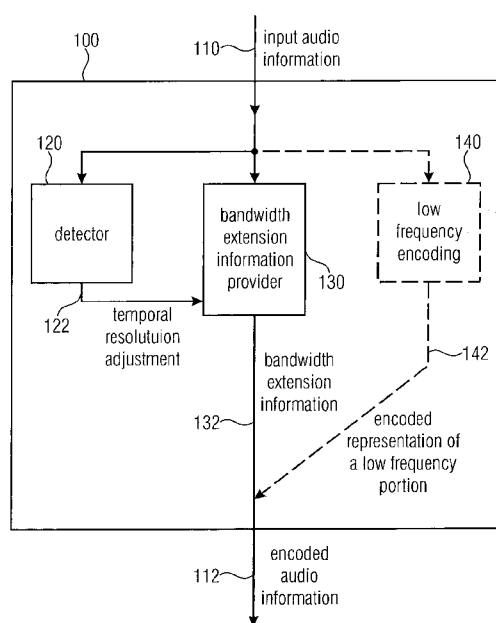


FIGURE 1

(57) **Abstract:** An audio encoder for providing an encoded audio information on the basis of an input audio information comprises a bandwidth extension information provider configured to provide bandwidth extension information using a variable temporal resolution and a detector configured to detect an onset of a fricative or affricate. The audio encoder is configured to adjust a temporal resolution used by the bandwidth extension information provider such that bandwidth extension information is provided with an increased temporal resolution at least for a predetermined period of time before a time at which an onset of a fricative or affricate is detected and for a predetermined period of time following the time at which the onset of the fricative or affricate is detected. Alternatively or in addition, the bandwidth extension information is provided with an increased temporal resolution in response to a detection of an offset of a fricative or affricate. Audio encoders and methods use a corresponding concept.