

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
14 September 2023 (14.09.2023)



(10) International Publication Number
WO 2023/172865 A1

(51) International Patent Classification:
G10L 19/008 (2013.01) *G10L 19/18* (2013.01)

(21) International Application Number:
PCT/US2023/063769

(22) International Filing Date:
06 March 2023 (06.03.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/318,744 10 March 2022 (10.03.2022) US
63/319,485 14 March 2022 (14.03.2022) US
63/321,200 18 March 2022 (18.03.2022) US
63/323,201 24 March 2022 (24.03.2022) US
63/327,450 05 April 2022 (05.04.2022) US
63/338,674 05 May 2022 (05.05.2022) US
63/358,314 05 July 2022 (05.07.2022) US
63/487,332 28 February 2023 (28.02.2023) US

(71) Applicants: **DOLBY LABORATORIES LICENSING CORPORATION** [US/US]; 1275 Market Street, San Francisco, California 94103 (US). **DOLBY INTERNATIONAL AB** [SE/IE]; 77 Sir John Rogerson's Quay, Block C, Grand Canal Docklands, Dublin, D02 VK60 (IE).

(72) Inventors: **TYAGI, Rishabh**; c/o Dolby Laboratories, Inc., 1275 Market Street, San Francisco, California 94103 (US). **TORRES, Juan Felix**; c/o Dolby Laboratories, Inc., 1275 Market Street, San Francisco, California 94103 (US). **BRUHN, Stefan**; c/o Dolby Laboratories, Inc., 1275 Mar-

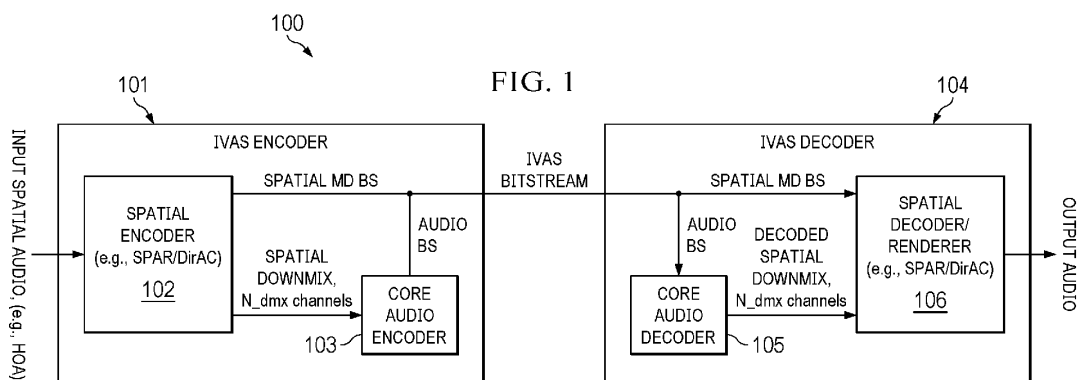
ket Street, San Francisco, California 94103 (US). **BROWN, Stefanie**; c/o Dolby Laboratories, Inc., 1275 Market Street, San Francisco, California 94103 (US).

(74) Agent: **TANASE, Iuliana** et al.; DOLBY LABORATORIES, INC., Intellectual Property Group, 1275 Market Street, San Francisco, California 94103 (US).

(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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, 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, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, 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, ME, 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).

(54) Title: METHODS, APPARATUS AND SYSTEMS FOR DIRECTIONAL AUDIO CODING-SPATIAL RECONSTRUCTION AUDIO PROCESSING



(57) Abstract: Enclosed are embodiments for audio processing that combines complementary aspects of Spatial Reconstruction (SPAR) and Directional Audio Coding (DirAC) technologies, including higher audio quality, reduced bitrate, input/output format flexibility and/or reduced computational complexity, to produce a codec (e.g., an Ambisonics codec) that has better overall performance than DirAC or SPAR codecs.

[Continued on next page]

Published:

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