

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
16 September 2021 (16.09.2021)



(10) International Publication Number
WO 2021/180935 A1

(51) International Patent Classification:
H04S 1/00 (2006.01) *H04S 3/00* (2006.01)

(21) International Application Number:
PCT/EP2021/056358

(22) International Filing Date:
12 March 2021 (12.03.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
20163159.5 13 March 2020 (13.03.2020) EP

(71) Applicant: **FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.** [DE/DE]; Hansastraße 27c, 80686 München (DE).

(72) Inventors: **HERRE, Jürgen**; c/o Fraunhofer-Institut für Integrierte Schaltungen IIS, Am Wolfsmantel 33, 91058 Erlangen (DE). **ADAMI, Alexander**; c/o Fraunhofer-Institut für Integrierte Schaltungen IIS, Am Wolfsmantel 33, 91058 Erlangen (DE). **ANEMÜLLER, Carlotta**; c/

o Fraunhofer-Institut für Integrierte Schaltungen IIS, Am Wolfsmantel 33, 91058 Erlangen (DE).

(74) Agent: **ZINKLER, Franz** et al.; Schoppe, Zimmermann, Stöckeler, Zinkler, Schenk & Partner mbB, Radlkoferstr. 2, 81373 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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, 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, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,

(54) Title: APPARATUS AND METHOD FOR SYNTHESIZING A SPATIALLY EXTENDED SOUND SOURCE USING CUE INFORMATION ITEMS

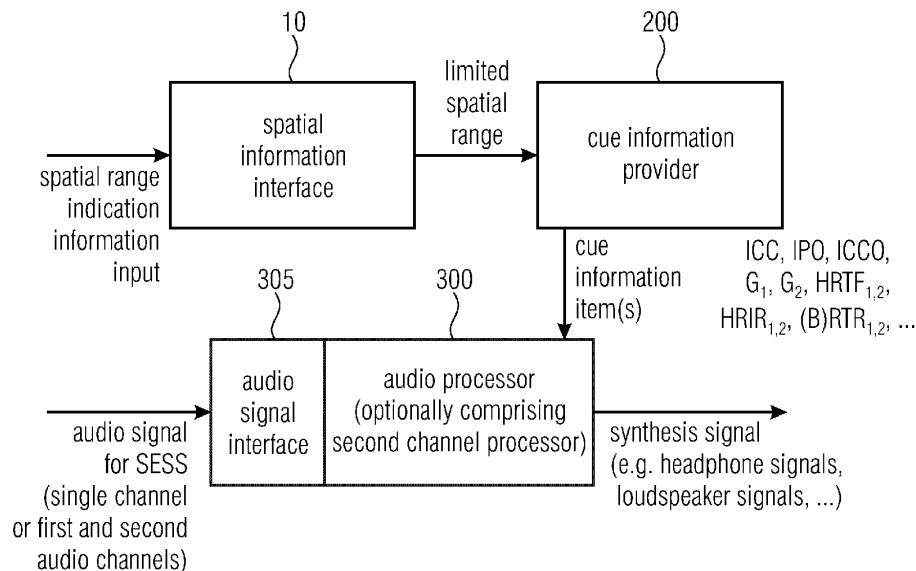


Fig. 1a

(57) Abstract: An apparatus for synthesizing a spatially extended sound source, comprises: a spatial information interface (100) for receiving a spatial range indication indicating a limited spatial range for the spatially extended sound source within a maximum spatial range (600); a cue information provider (200) for providing one or more cue information items in response to the limited spatial range; and an audio processor (300) for processing an audio signal representing the spatially extended sound source using the one or more cue information items.

[Continued on next page]

WO 2021/180935 A1

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))*