

10/10/03
2008059979

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

(19) World Intellectual Property Organization
International Bureau



162162

(43) International Publication Date
24 October 2002 (24.10.2002)

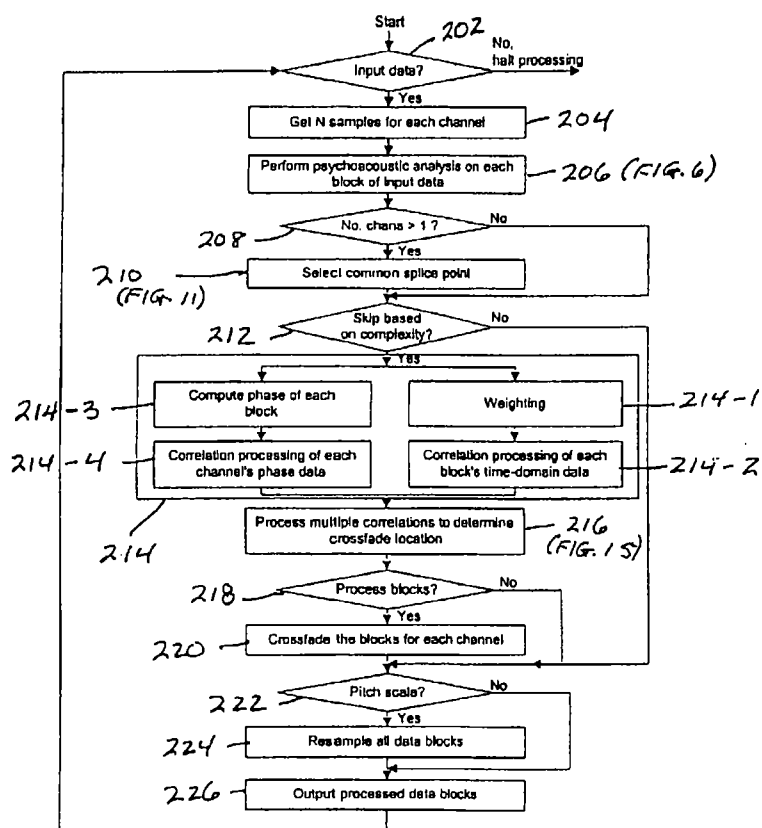
PCT

(10) International Publication Number
WO 02/084645 A3

- (51) International Patent Classification⁷: **G10L 19/04** [US/US]; 100 Potrero Avenue, San Francisco, CA 94103 (US).
- (21) International Application Number: PCT/US02/04317
- (22) International Filing Date: 12 February 2002 (12.02.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/834,739 13 April 2001 (13.04.2001) US
60/293,825 25 May 2001 (25.05.2001) US
09/922,394 2 August 2001 (02.08.2001) US
10/045,644 11 January 2002 (11.01.2002) US
- (71) Applicant (for all designated States except US): **DOLBY LABORATORIES LICENSING CORPORATION**
- (72) Inventor; and
(75) Inventor/Applicant (for US only): **CROCKETT, Brett, G.** [US/US]; 100 Potrero Avenue, San Francisco, CA 94103 (US).
- (74) Agents: **GALLAGHER, Thomas, A.** et al.; Gallagher & Lathrop, Suite 1111, 601 California Street, San Francisco, CA 94108-2805 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,

[Continued on next page]

(54) Title: HIGH QUALITY TIME-SCALING AND PITCH-SCALING OF AUDIO SIGNALS



(57) Abstract: In one alternative, an audio signal is analyzed using multiple psychoacoustic criteria to identify a region of the signal in which time scaling and/or pitch shifting processing would be inaudible or minimally audible, and the signal is time scaled and/or pitch shifted within that region. In another alternative, the signal is divided into auditory events, and the signal is time scaled and/or pitch shifted within an auditory event. In a further alternative, the signal is divided into auditory events, and the auditory events are analyzed using a psychoacoustic criterion to identify those auditory events in which the time scaling and/or pitch shifting procession of the signal would be inaudible or minimally audible. Further alternatives provide for multiple channels of audio.

WO 02/084645 A3



ACTION

MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
19 December 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.