PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : H04N 7/26, 1/32 — A1

(11) International Publication Number: WO 99/60792

(43) International Publication Date: 25 November 1999 (25.11.99)

(21) International Application Number: PCT/US99/03340

(22) International Filing Date: 17 February 1999 (17.02.99)

(30) Priority Data:
60/086,066 20 May 1998 (20.05.98) US

(71) Applicant: MACROVISION CORPORATION [US/US]; 1341 Orleans Drive, Sunnyvale, CA 84089 (US).

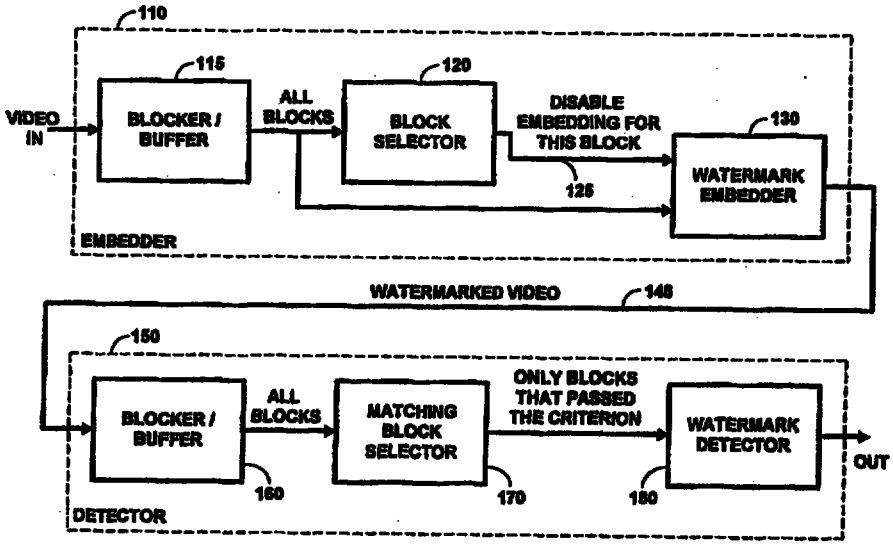
(72) Inventor: KUROWSKI, Kordian; 3673 Meadowlands Lane, San Jose, CA (US).

(74) Agents: BRILL, Gerow et al.; Macrovision Corp., 1341 Orleans Drive, Sunnyvale, CA 94089 (US).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: METHOD AND APPARATUS FOR SELECTIVE BLOCK PROCESSING



(57) Abstract

Methods, devices and systems for embedding and detecting a watermark in a data stream, such as a video stream. A texture criterion is evaluated for each block of the data stream. The texture criterion measures a variation of selected characteristics associated with each element of the data stream, such as luminance and chrominance. Only those blocks that are determined to have at least a predetermined degree of variation in the selected characteristic are selected for embedding of a watermark. By providing the watermark detector with a block selector that evaluates the same texture criterion as was employed in the watermark embedder, the detector attempts detection of the watermark only in those blocks having been determined to have the predetermined degree of variation of the selected characteristic, or greater. By attempting detection only in such blocks, the number of detection computations is decreased and the watermark signal to data stream noise ratio is increased, thereby facilitating detection of even weak watermarks.