



(43) International Publication Date
4 November 2004 (04.11.2004)

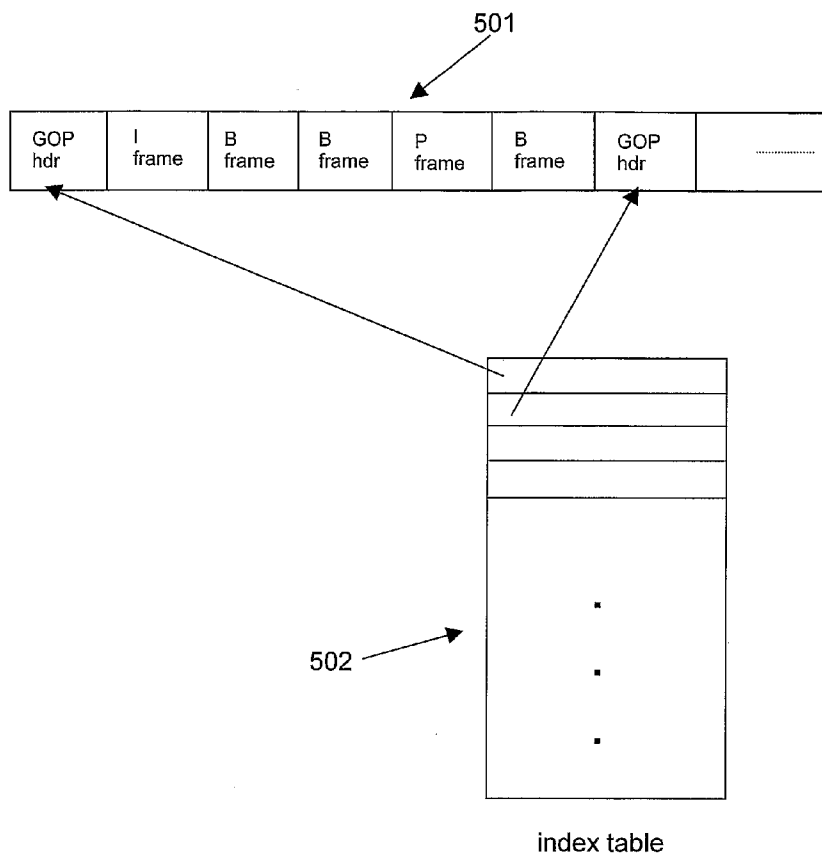
PCT

(10) International Publication Number
WO 2004/095426 A2

- | | | |
|--|--|---|
| (51) International Patent Classification⁷: | G11B | [FI/US]; 4916 Alan Avenue, San Jose, CA 95124 (US). |
| (21) International Application Number: | PCT/US2004/010913 | VANNIER, Eric [FR/US]; 2000 Walnut Avenue #K202, Fremont, CA 94538 (US). |
| (22) International Filing Date: | 8 April 2004 (08.04.2004) | (74) Agents: WONG, Kirk et al.; Hickman Palermo Truong & Becker LLP, 1600 Willow Street, San Jose, CA 95125 (US). |
| (25) Filing Language: | English | (81) Designated States (<i>unless otherwise indicated, for every kind of national protection available</i>): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, 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, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW. |
| (26) Publication Language: | English | |
| (30) Priority Data: | 10/420,371 21 April 2003 (21.04.2003) | US |
| (71) Applicant (<i>for all designated States except US</i>): TIVO INC. [US/US]; P.O. Box 2160, 2160 Gold Street, Alviso, CA 95002-2160 (US). | | |
| (72) Inventors; and | | |
| (75) Inventors/Applicants (<i>for US only</i>): OTALA, Tapani | | (84) Designated States (<i>unless otherwise indicated, for every kind of regional protection available</i>): ARIPO (BW, GH, |

[Continued on next page]

- (54) Title:** METHOD AND APPARATUS FOR CREATING AN EXPANDED FUNCTIONALITY DIGITAL VIDEO DISC



(57) Abstract: A method and apparatus for creating an expanded functionality digital video disc (DVD) creates an enhanced DVD with index tables for the program streams on the DVD. Index tables point to key locations in an MPEG program stream with each entry in the index table set to point to a group of pictures (GOP) header in the MPEG stream. The invention can select GOP headers at predefined intervals, semi-random intervals, or at key locations. The invention creates an index table either during storage of a program stream on a hard disk, during a scan of program material already stored on a local hard disk, or while program material is being read out of the hard disk and written to a DVD. The invention adds a new directory to the DVD structure and writes the index table(s) for the stream(s) into the directory.



GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report*

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.