## (19) World Intellectual Property Organization International Bureau





(43) International Publication Date 17 November 2005 (17.11.2005)

PCT

# (10) International Publication Number WO 2005/109179 A3

(51) International Patent Classification 7: G06F 17/30, H04N 5/445

(21) International Application Number:

PCT/US2005/015643

(22) International Filing Date: 5 May 2005 (05.05.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/568,881 6 May 2004 (06.05.2004) US 10/963,306 12 October 2004 (12.10.2004) US

- (71) Applicant (for all designated States except US): MACRO-VISION CORPORATION [US/US]; 2830 De La Cruz Boulevard, Santa Clara, CA 95050 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BLAND, William [GB/GB]; 21 Guild Court, Redcliff Backs, Bristol BS1 6HX (GB). MOORE, James, Edward [GB/GB]; 3 Orchard Road, Colchester, Essex CO1 1SG (GB).
- (74) Agent: SALTER, James, H.; Macrovision Corporation, Patent Department, 2830 De La Cruz Boulevard, Santa Clara, CA 95050 (US).

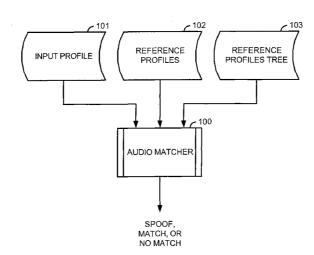
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, 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, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, 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, IS, IT, LT, 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

- 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: 9 March 2006

[Continued on next page]

(54) Title: USING REFERENCE FILES ASSOCIATED WITH NODES OF A TREE



(57) Abstract: An input profile (101) is generated from an input audio file using a measurable attribute that was used to generate reference profiles (102) from reference audio files. The input profile (101) is then subjected to a process that was also used to generate a reference profiles tree (103), which is structured as a sparse binary tree, which is used by the audio matcher (100) to facilitate and expedite the matching process form the reference profiles (102). The input profile (101) is then compared with this subset of the reference profiles (102), representing potential matches, to determine that either it matches one of the reference profiles (102), or that it is a spoof, or that it does not match any of the reference profiles (102).



### 

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.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/15643

A. CLASSIFICATION OF SUBJECT MATTER				
IPC(7)	IPC(7) : G06F 17/30; H04N 5/445			
US CL : 707/3, 104.1; 725/46, 109, 91, 119				
According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED				
Minimum documentation searched (classification system followed by classification symbols) U.S.: 707/3, 104.1; 725/46, 109, 91, 119				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.	
Х	X Pub. No.: US 2004/0030691 A1 (WOO) 12 Febuary 2004 (12.02.2004), abstract, sections 0005-0008) Y		1	
			2-24	
Y Pub. No.: US 2003/0028889 A1 (MCCOSKEY et al.) 6 Febuary 2003 (06.02.2003) abstract,		2-24		
section 0065, 0087, 0121).  Y  Pub. No.: US 2003/0093794 A1 (THOMAS et al.) 15 May 2003 (15.05.2003), abstract, sections 0006, 0009, 00065, 0087 and 0121)		2-24		
Further	documents are listed in the continuation of Box C.	See patent family annex.		
Special categories of cited documents:		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the		
"A" document defining the general state of the art which is not considered to be of particular relevance		principle or theory underlying the invent	tion	
"E" earlier app	lication or patent published on or after the international filing date	"X" document of particular relevance; the cl considered novel or cannot be considered when the document is taken alone		
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art		
"O" document referring to an oral disclosure, use, exhibition or other means		•	9	
priority date claimed		"&" document member of the same patent fa	· · · · · · · · · · · · · · · · · · ·	
Date of the actual completion of the international search		Date of mailing of the international search report  1 3 JAN 2006		
08 December 2005 (08.12.2005)  Name and mailing address of the ISA/US		Authorized officer		
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450		JEAN CORRIELUS		
Alexandria, Virginia 22313-1450		Telephone No. 571 272-4032		