

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 September 2001 (13.09.2001)

PCT

(10) International Publication Number
WO 01/67206 A3

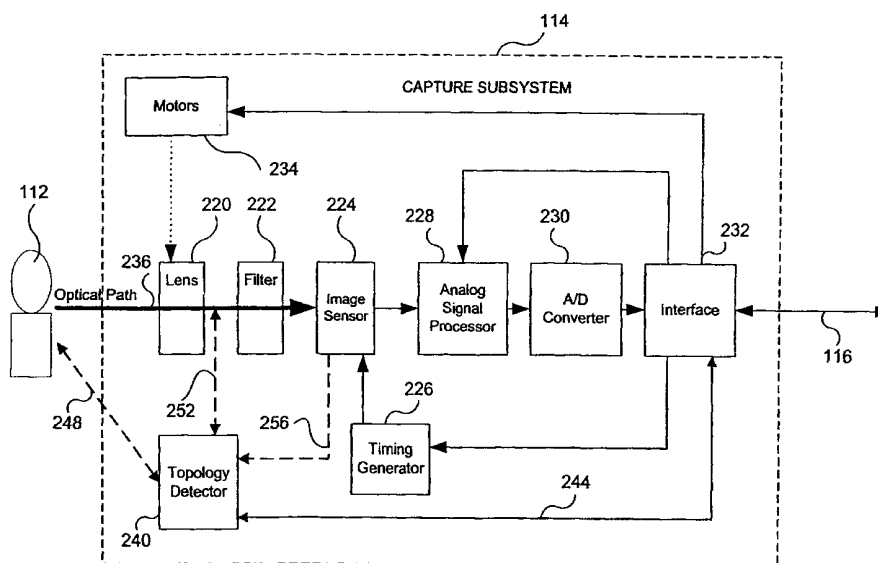
- (51) International Patent Classification⁷: G06K 9/00
- (21) International Application Number: PCT/US01/06203
- (22) International Filing Date: 27 February 2001 (27.02.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/187,136 6 March 2000 (06.03.2000) US
09/659,725 11 September 2000 (11.09.2000) US
- (71) Applicant: SONY ELECTRONICS INC. [US/US]; 1 Sony Drive, Park Ridge, NJ 07656 (US).
- (72) Inventors: EDWARDS, Eric, D.; 151 Alice B. Toklas, # 511, San Francisco, CA 94109 (US). GOLDSTEIN, Steven, G.; 13428 Maxella Avenue, #254, Marina Del Rey, CA 90292 (US). LONGENDYKE, David, G.; 24 Meadow Lane, Vernon, NJ 07462 (US).
- (74) Agents: KOERNER, Gregory, J. et al.; Simon & Koerner LLP, 10052 Pasadena Avenue, Suite B, Cupertino, CA 95014 (US).
- (81) Designated States (national): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, 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, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

(88) Date of publication of the international search report:
7 March 2002

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR UTILIZING A TOPOLOGY DETECTOR TO CAPTURE VISUAL INFORMATION



(57) Abstract: A system and method for utilizing a topology detector (240) to capture visual information comprises a topology detector (240) that propagates a detection pulse towards a target object (112) using a transmitter module (512), and then senses wave segments of the detection pulse with a sensor array (516) as the wave segments are reflected back toward the topology detector (240). The topology detector (240) may then generate contour values that correspond to localized areas of the target object (112). A detection manager (416) may then access the contour values to responsively generate and store topology values that may be mapped to respective pixel values of a set of captured image data (418) that represents the target object (112).



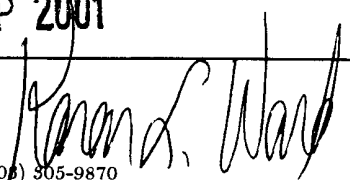
WO 01/67206 A3



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/US01/06203

| A. CLASSIFICATION OF SUBJECT MATTER | | |
|---|---|--|
| IPC(7) : G06K 9/00 US CL : 382/154 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. : 382/154 | | |
| 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) IBM | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| Y | US 6,011,627 A (MULLIGAN et al.) 04 January 2000, Figs. 1,2 | 1-43 |
| Y | US 4,844,617 A (KELDERMAN et al.) 04 July 1989, Abstract, Fig 10 | 1-43 |
| Y | US 5,033,856 A (NOSE et al.) 23 July 1991, Figs 5,6 | 1-43 |
| <input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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 principle or theory underlying the invention |
| "A" | document defining the general state of the art which is not considered to be of particular relevance | "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone |
| "E" | earlier document published on or after the international filing date | "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 |
| "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) | "&" document member of the same patent family |
| "O" | document referring to an oral disclosure, use, exhibition or other means | |
| "P" | document published prior to the international filing date but later than the priority date claimed | |
| Date of the actual completion of the international search 08 APRIL 2001 | | Date of mailing of the international search report 12 SEP 2001 |
| Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230 | | Authorized officer SAMIR AHMED  Telephone No. (703) 305-9870 |