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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
21 March 2002 (21.03.2002)

PCT

(10) International Publication Number
WO 02/23382 A1

(51) International Patent Classification[7]: G06F 17/00

(21) International Application Number: PCT/US01/42123

(22) International Filing Date:
13 September 2001 (13.09.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/232,578 13 September 2000 (13.09.2000) US
09/952,546 12 September 2001 (12.09.2001) US

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, 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, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, 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, 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*

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.

WO 02/23382 A1

(54) Title: IMPROVED STRUCTURE IDENTIFICATION USING SCATTERING SIGNATURES

(57) Abstract: A method of pruning a reference library of signatures and corresponding known structure parameter vector, each signature comprising a reference signal vector, comprising: for a given reference signal vector, interpolating a parameter vector assuming that the given reference signal vector and its corresponding parameter vector were deleted from the reference library; and deleting the given reference signal vector and the corresponding parameter vector if an interpolating error between the corresponding parameter vector and the interpolated parameter vector is less than a threshold value. Also a method of accessing an indexed reference library of signatures and corresponding known structure parameter vectors, each signature comprising a reference signal vector with the library additionally comprising a plurality of reference signal index vectors, comprising: calculating an index vector for an unknown signal; determining error between the index vector for the unknown signal and a reference signal index vector of the library; and identifying as a match candidate for the unknown signal a reference signal vector corresponding to the reference signal index vector if the error is below a predetermined threshold.