(51) International Patent Classification⁷: **G06F 17/50**

(21) International Application Number: PCT/US00/31839

(22) International Filing Date:
17 November 2000 (17.11.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/442,699	18 November 1999 (18.11.1999)	US
60/166,307	18 November 1999 (18.11.1999)	US
60/166,308	18 November 1999 (18.11.1999)	US

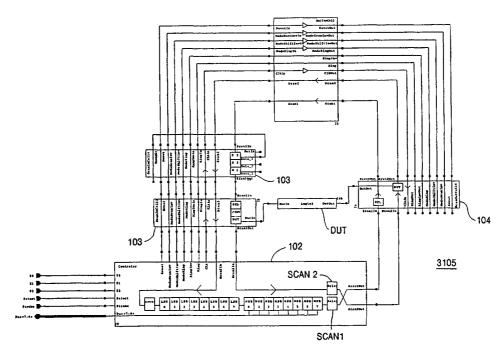(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US	09/442,699 (CIP)
Filed on	18 November 1999 (18.11.1999)

(71) Applicant (for all designated States except US): **PDF SO-LUTIONS, INC.** [US/US]; Suite 700, 333 West San Carlos Street, San Jose, CA 95110 (US).

(72) Inventors; and
(75) Inventors/Applicants (for US only): **STINE, Brian, E.** [US/US]; 560 Vista Club Circle #105, Santa Clara, CA 95054 (US). **HESS, Christopher** [US/US]; 320 South Overlook Drive, San Ramon, CA 94583 (US). **WEILAND, Larg, H.** [US/US]; 7277 Sedgefield Avenue, San Ramon, CA 94583 (US). **CIPLICKAS, Dennis, J.** [US/US]; 2441 Schubert Avenue, San Jose, CA 95124 (US).

(74) Agents: **KOFFS, Steven, E.** et al.; Duane, Morris & Heckscher LLP, One Liberty Place, Philadelphia, PA 19103-7396 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, 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, 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

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR PRODUCT YIELD PREDICTION USING A LOGIC CHARACTERIZATION VEHICLE

(57) Abstract: A characterization vehicle includes at least one combinatorial logic circuit element, and a control circuit (102) that controls the combinatorial logic circuit element. The control circuit includes an input mechanism (103) for inputting a test pattern of signals into the combinatorial logic circuit element. An output mechanism (104) stores an output pattern that is output by the combinatorial logic circuit element based on the test pattern.

WO 01/37322 A3

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:

24 January 2002

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/US00/31839

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 17/50

US CL :716/1, 4, 11; 700/121

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. : 716/1, 4, 11; 700/121

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)

IEL Online

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,790,479 [CONN] 04 August 1998 (04.08.1998), columns 4-12	1-11
A	US 5,773,315 [JARVIS] 30 June 1998 (30.06.1998), columns 5-19	11
A	US 5,486,786 [LEE] 23 January 1996 (23.01.1996), columns 4-12	1-11
A	US 3,751,647 [MAEDER] 07 August 1973 (07.08.1973), columns 4-13	11
A	KHARE et al., "Extraction of Defect Characteristics for Yield Estimation Using the Double Bridge Test Structure," 1991 VLSITSA, pages 428-432.	11

[X] 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 principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance		
"E"	earlier document published on or after the international filing date	"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
"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		
"P"	document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 MAY 2001	08 JUN 2001
Name and mailing address of the ISA/US	Authorized officer
Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	MATTHEW SMITH
Facsimile No. (703) 305-3230	Telephone No. (703) 308-1323

Form PCT/ISA/210 (second sheet) (July 1998)★

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KHARE et al., "Yield-Oriented Computer-Aided Defect Diagnosis," IEEE Trans. on Semiconductor Manufacturing, Vol. 8, No. 02 May 1995 (02.05.1995), pages 195-206.	11