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

(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 3 April 2008 (03.04.2008)

(10) International Publication Number WO 2008/039706 A3

- (51) International Patent Classification: G06F 17/50 (2006.01)
- (21) International Application Number:

PCT/US2007/079223

(22) International Filing Date:

21 September 2007 (21.09.2007)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

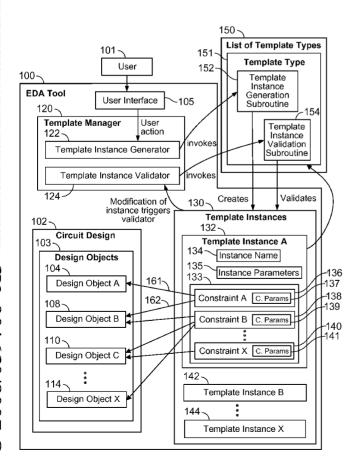
11/527,199

25 September 2006 (25.09.2006)

- (71) Applicant (for all designated States except US): CA-DENCE DESIGN SYSTEMS, INC. [US/US]; 2655 Seely Avenue, Bldg. 5, San Jose, California 95135 (US).
- (71) Applicant and
- (72) Inventor: ARSINTESCU, George B. [RO/US]; 2671 Rebeiro Avenue, Santa Clara, CA 95051 (US).
- Agents: DURANT, Stephen C. et al.; Novak Druce & Quigg LLP, 1000 Louisiana Street, 53rd Floor, Houston, Texas 77002 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, LV, MC, MT, 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).

[Continued on next page]

(54) Title: GENERALIZED CONSTRAINT COLLECTION MANAGEMENT METHOD



(57) Abstract: Techniques are provided to allow users of Electronic Design Automation (EDA) tools to define constraint template types for efficiently associating constraints with design objects to specify design intent. Processes for creating and validating the constraints are provided by user-defined plug-ins, thereby allowing users to annotate circuit designs with constraints for proprietary layout and fabrication processes without exposing the constraints to tool vendors or competitors. The constraints are re-created from the template types whenever the circuit design is loaded into the EDA tool, so that the constraints are based upon the latest version of the template type. The constraints are also re-created when validation fails. Constraint groups are reusable in different designs, technology nodes, and processes because they automatically expand to provide the specific constraints to achieve a goal. The specific constraints in a template type can be modified as technology changes, and the modification will automatically be applied to the design objects.

WO 2008/039706 A3



Published:

(88) Date of publication of the international search report:

22 May 200

- 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

INTERNATIONAL SEARCH REPORT

International application No PCT/US2007/079223

A. CLASSIFICATION OF SUBJECT MATTER INV. G06F17/50					
According to	o International Patent Classification (IPC) or to both national classification	ation and IPC			
	SEARCHED				
G06F	ocumentation searched (classification system followed by classification	on symbols)			
Documentat	tion searched other than minimum documentation to the extent that s	uch documents are included in the fields se	arched		
Electronic d	ata base consulted during the international search (name of data base	se and, where practical, search terms used)		
EPO-In	ternal, WPI Data				
C. DOCUME	ENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.		
V	INVANCED THE PROPERTY OF THE P		1.00		
X	UNKNOWN: "What's New in Board Station 2005"[Online] 2006, XP007904262		1–32		
	Retrieved from the Internet:				
	URL:http://www.mentor.com/product				
	rdstation/upload/bs2005_wnandc_fi [retrieved on 2008-03-06]	nai.put>			
	pages 29-31				
A	US 2004/205573 A1 (CARLSON BRENT	A FIICT ET	1-32		
^	AL) 14 October 2004 (2004-10-14)	A LOSJ EI	1-32		
	abstract				
	·				
Further documents are listed in the continuation of Box C. X See patent family annex.					
* Special c	ategories of cited documents :	*T* later document published after the inter	rnational filing date		
	ent defining the general state of the art which is not lered to be of particular relevance	or priority date and not in conflict with cited to understand the principle or the invention			
"E" earlier o	document but published on or after the international late	"X" document of particular relevance; the cl			
	ent which may throw doubts on priority claim(s) or is cited to establish the publication date of another	cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone			
citation or other special reason (as specified) reason (as specified) cannot be considered to involve an inventive step when the					
other means ments, such combination being obvious to a person skilled					
	ant published prior to the international filling date but nan 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					
7 March 2008		01/04/2008			
Name and mailing address of the ISA/		Authorized officer			
	European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk				
Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016		Anticoli, Claud			

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2007/079223

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004205573 A1	14-10-2004	AU 2003225697 A1 CA 2479310 A1 EP 1493100 A1 JP 2005521159 T WO 03081457 A1	08-10-2003 02-10-2003 05-01-2005 14-07-2005 02-10-2003