United States District Court,
D. Delaware.

SYNOPSYS, INC,
Plaintiff.
v.
MAGMA DESIGN AUTOMATION,
Defendant.
Magma Design Automation,
Counter Claimant.
v.
Synopsys, Inc,
Counter Defendant.

C.A. No. 05-701(GMS)

Dec. 20, 2006.

Karen Jacobs Louden, Leslie A. Polizoti, Morris, Nichols, Arsht & Tunnell, Wilmington, DE, Maria Granovsky, Quinn Emanuel Urquhart Oliver & Hedges, LLP, New York, NY, for Plaintiff.

William J. Marsden, Jr., Fish & Richardson, P.C., Wilmington, DE, for Defendant.

ORDER CONSTRUING THE TERMS OF U.S. PATENT NOS. 6,192,508***;*** 6,519,745***; and*** 6,857,116

GREGORY M. SLEET**, District Judge.**

After having considered the submissions of the parties and hearing oral argument on the matter, IT IS HEREBY ORDERED, ADJUDGED, and DECREED that, as used in the asserted claims of U.S. Patent Nos. 6,192,508 (the "'508 patent"); 6,519,745 (the "'745 patent); and 6,857,116 (the "'116 patent"),

A. The '508 Patent

1. The term "bins" is construed to mean "more than one bin." FN1

FN1. The court agrees with Magma's assertion that the plural term "bins" cannot encompass a single "bin."

2. The term "bin" is construed to mean "a region." FN2

FN2. "Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." Vitronics Corp.

v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). Here, the patentees acted as their own lexicographer in defining the term "bin."

3. The term "in an attempt to improve congestion by taking advantage of the logic modifications" is construed to have its plain and ordinary meaning. FN3

FN3. During the *Markman* hearing, the parties agreed that this term should have its plain and ordinary meaning. See Transcript of hearing, dated November 29, 2006 ("Tr."), at 38:2-19; Tr. at 66:14-67:3; Tr. at 71:1-7.

4. The term "means for calculating congestion of the initial placement" is a means-plus-function term. The disclosed function is "calculating congestion of the initial placement." The corresponding structure is "a computer executing an algorithm, which calculates the total number of pins in the bin divided by the total routable area in the bin," and equivalents.FN4

FN4. Federal Circuit precedent "restricts computer-implemented means-plus-function terms to the algorithm disclosed in the specification." Harris Corp. v. Ericsson Inc., 417 F.3d 1241, 1253 (Fed.Cir.2005) (discussing the court's analysis in WMS Gaming Inc. v. Int'l Game Tech., 184 F.3d 1339, 1348-49 (Fed.Cir.1999)). In other words, "[a] computer-implemented means-plus-function term is limited to the corresponding structure disclosed in the specification and equivalents thereof, and the corresponding structure is the algorithm." Harris, 417 F.3d at 1253. Here, Synopsys advances one other corresponding structure for this claim term: "interconnection models for interconnects between bins or within bins." (D.I. 140 Ex. B, at 7.) During the *Markman* hearing, Synopsys argued that interconnection models were a definite structure and posited that "a class of algorithms can[ ] constitute a corresponding structure." Tr. at 41:24-25. Although a class of algorithms may constitute a corresponding structure, as Synopsys argues, Synopsys cannot escape the Federal Circuit's requirement that the algorithm (or class of algorithms in Synopsys' argument) must be disclosed in the specification. The '508 patent specification, however, does not disclose such an algorithm. In other words, the court reads the specification of the '508 patent to disclose a function, which a number of algorithms can accomplish, or a model that employs a number of algorithms. Therefore, to adopt Synopsys' additional structure for the recited function would result in an overly broad construction of the claim term by the court.

5. The term "means for performing an initial placement of integrated circuit elements within bins on the design layout" is a means-plus-function term. The disclosed function is "performing an initial placement of integrated circuit elements within bins on the design layout." The corresponding structure is "an electronic design automation placement tool," and equivalents.FN5

FN5. Synopsys advances two other structures as corresponding to the function of "performing an initial placement of integrated circuit elements within bins on the design layout": (1) a computer executing an algorithm for placing cells in one or more regions using a placement tool that partitions cells into one or more regions at each stage of the placement; and (2) a computer executing an algorithm for placing cells in accordance with a placement algorithm that is limited by the topology of the circuit. As to the first structure that Synopsys advances, the specification of the '508 patent does not set forth any specific algorithm for performing the recited function. For the same reasons articulated in note 4, and following Federal Circuit

precedent, the court concludes that "a computer executing an algorithm for placing cells in one or more regions using a placement tool that partitions cells into one or more regions at each stage of the placement" is not adequate structure for the disclosed function. Likewise, the second structure that Synopsys advances is not adequate structure for the disclosed function. The portion of the specification that Synopsys cites for support, Column 4, lines 23-29, directly follows the sentence "Particular logic modifications used to relieve congestion will be described in greater detail." This sentence signals to the court that the portion of the specification Synopsys cites discloses "logic modifications used to relieve congestion," rather than "performing an initial placement of integrated circuit elements within bins on the design layout." Further, the specification statement "[p]lacement algorithms are limited in how they can place cells by the topology of the circuit," on which Synopsys relies, does not disclose an algorithm for performing the recited function.

6. The term "reducing constraints on a subsequent placement step" is construed to have its plain and ordinary meaning.FN6

FN6. "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed.Cir.2005) (citing Brown v. 3M, 265 F.3d 1349, 1352 (Fed.Cir.2001)).

7. The term "selected bins" is construed to mean "more than one selected region." FN7

FN7. Magma's construction invites the court to import a limitation from the preferred embodiment into the claims, which is contrary to Federal Circuit precedent. *See* Comarck Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed.Cir.1998) (" '[w]hile ... claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims.' ")

8. The term "to allow congestion of the placement to be improved" is construed to have its plain and ordinary meaning.FN8

FN8. During the *Markman* hearing, the parties agreed that this term should have its plain and ordinary meaning. See Tr. at 66:14-67:3; Tr. at 71:1-7.

B. The '745 Patent

1. The term "congestion score" is construed to mean "A ratio computed from an estimated amount of routing space available in the bucket and estimated consumption of routing resources." FN9

FN9. Synopsys' construction invites the court to import a limitation from the preferred embodiment into the claims. *See* note 7.

C. The '116 Patent

1. The term "generating said physical design" is construed to have its plain and ordinary meaning.FN10

FN10. The court concludes that the preamble of claim 1 is not a limitation to the disputed claim term, because it does not "limit[ ] the invention" by "reciting essential structure or steps." Catalina Mktg. Int'l v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed.Cir.2005). Additionally, the preamble is not " 'necessary to give life, meaning, and vitality' to the claim." *Id*. (quoting Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed.Cir.1999)).

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