

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FRED A. GARCIA
and KRISHNAN SRINIVASAN

Appeal No. 96-0587
Application 07/927,543¹

ON BRIEF

Before HAIRSTON, KRASS, and BARRETT, Administrative Patent Judges.
BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the

¹ Application for patent filed July 31, 1992, entitled "Concurrent Design Tradeoff Analysis System And Method."

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final rejection of claims 1, 6, 7, 9, 11, 12, 15, 19, 20, 22, 24-28, 30, 32, 33, 36, and 42-45. Claims 2-5, 8, 10, 13, 14, 16-18, 21, 23, 29, 31, 34, 35, and 37-41 have been objected to as being dependent upon a rejected base claim, but are indicated to be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. We affirm-in-part.

The disclosed invention is directed to a concurrent tradeoff analysis system and method.

Claim 1 is reproduced below.

1. A computer implemented method for tradeoff analysis, comprising steps of:

ascertaining a set of constraints;

defining a set of variables for specifying a solution;

defining a set of characteristics for specifying the merit of said solution;

computing values for said sets of variables and said sets of characteristics representing a current solution state;

comparing said computed values of said variables and said characteristics with said constraints;

generating at least one alternative to said current solution state in response to at least one of said variables and characteristics being inconsistent with said constraints;

evaluating said current solution state and alternatives; and

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choosing a satisficing solution to satisfy all of said constraints in response to said evaluating step.

The examiner relies on the following reference:

Sriram, D., ALL-RISE: A Case Study in Constraint-Based Design, Artificial Intelligence in Engineering, Vol. 2, No. 4 (1987), pages 186-203.

The rejection of claims 1-7 and 9-24 under 35 U.S.C. § 101 as being directed to nonstatutory subject matter as a mathematical algorithm has been withdrawn (Examiner's Answer, page 8).

Claims 1, 6, 7, 9, 11, 12, 15, 19, 20, 22, 24-28, 30, 32, 33, 36, and 42-45 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sriram.

The examiner's statement of the rejection is contained in the Final Rejection (Paper No. 6) and the Examiner's Answer (Paper No. 12). Appellant's position is set forth in the Brief (Paper No. 11).

OPINION

Appellants state that the rejected claims do not stand or fall together (Brief, page 6). However, appellants only separately argue claims 1, 12, 19, 20, 24, 27, and 42 (Brief, pages 13-14). Accordingly, unargued claims will be presumed to stand or fall together with the argued claims on which they depend. See 37 CFR § 1.192(c)(5) (1994) ("it will be presumed

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that the rejected claims stand or fall together unless a statement is included that the rejected claims do not stand or fall together, and in the appropriate part or parts of the argument under subparagraph (c)(6) appellant presents reasons as to why appellant considers the rejected claims to be separately patentable" (emphasis added)).

We address only the limitations argued in appellants' brief. Cf. In re Baxter Travenol Labs., 952 F.2d 388, 391, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991) ("It is not the function of this court to examine the claims in greater detail than argued by an appellant, looking for nonobvious distinctions over the prior art."); In re Wiseman, 596 F.2d 1019, 1022, 201 USPQ 658, 661 (CCPA 1979) (arguments must first be presented to the Board before they can be argued on appeal).

"Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention." RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

Appellants argue that Sriram does not disclose the step of "choosing a satisficing solution to satisfy all of said constraints" as recited in claim 1 or "selecting a satisficing solution to satisfy all said constraints" as recited in claim 27.

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"Satisficing" is defined as an artificial intelligence term meaning "the process of searching for a solution that is satisfactory, though not necessarily optimal." Academic Press Dictionary of Science and Technology (1992) (copy provided by appellants). Appellants argue that Sriram merely discloses that several feasible alternatives are extracted from the solution tree. An alternate solution is argued to not be a satisficing solution because (Brief, pages 13-14):

The Examiner alleges that alternate is not optimal and falls within the definition of satisficing. A satisficing solution includes a solution that is satisfactory. Satisficing implies a criteria or rank of solution, yet is not necessarily optimal. Alternate could be any solution. . . . Clearly alternatives do not anticipate satisficing. Sriram does not disclose satisficing.

"The examiner contends that a feasible alternative is a satisficing solution, as feasible can be considered as at least satisfactory; a feasible alternative is not unsatisfactory" (Examiner's Answer, page 8).

Claim 1 recites "evaluating said current solution state and alternatives; and choosing a satisficing solution to satisfy all of said constraints in response to said evaluating step." The solution tree in Sriram (e.g., figure 9) consists of "a number of feasible solutions (structural configurations) to the design problem" (page 187, sec. 1.3). A feasible solution (also called a feasible alternative in Sriram) is one that satisfies all of

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the constraints, because if a constraint is violated "the subsystem or component is termed unsatisfactory" (page 186, item 1.c, right col.). A feasible solution is a satisfactory solution and, therefore, must also be a satisficing solution, as broadly claimed. Appellants' argument that "[s]atisfactory implies a criteria or rank of solution" (Brief, page 13) is not persuasive. "Satisfactory" is defined as "adequate." Webster's New Collegiate Dictionary (1977). Neither "satisfactory" nor "satisficing" imply a criteria or rank of solution. If claim 1 was meant to include a ranking, it could have been expressly recited as in claim 12. Accordingly, we sustain the rejection of claim 1 and the rejection of claims 6, 7, 9, 11, and 25, which depend on claim 1 and which have not been separately argued.

Claim 27 recites "ranking said solution states and said alternatives in response to said evaluation, and selecting a satisficing solution to satisfy all said constraints." Claim 27 does not recite that "selecting a satisficing solution" is selecting the solution having the highest rank. Dependent claim 12 similarly recites "ranking said additional current solution states and alternatives in response to said figure of merit," but does not tie the satisficing solution to the ranking. Nevertheless, Sriram must disclose ranking for it to be an anticipation. The examiner refers to section "4.1.2 Control

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flow" for the limitations of computing a figure of merit and ranking the current solution states (Examiner's Answer, pages 5-6). Section 4.1.2 discusses how the SYNTHESIZER "recursively generates the solution tree from the information encoded in the '-components' and '-alt' slots of the nodes or schemas representing the SKH" (page 194, sec. 4.1.2) and how "[a]t every level in the solution tree, synthesis constraints are used either to retain or to eliminate alternatives" (page 194, sec. 4.1.2). However, we find nothing in section 4.1.2 that discusses ranking. All alternative solutions which satisfy the constraints are generated in Sriram and there is no attempt that we can see to rank the alternatives. Accordingly, we reverse the rejection of claims 12 and 27. We also reverse the rejection of claims 15, 19, 20, 22, 24, and 26, which depend on claim 12, and the rejection of claims 28, 30, 32, 33, 36, and 42-45 which depend directly or indirectly from claim 27.

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CONCLUSION

The rejection of claims 1, 6, 7, 9, 11, and 25 is sustained.

The rejection of claims 12, 15, 19, 20, 22, 24, 26-28, 30, 32, 33, 36, and 42-45 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
ERROL A. KRASS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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