

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LAURA A. WEBER, FRITZ A. BOEHM,
JEAN ANNE BOOTH, JEFFREY S. LEONARD,
SHAWN D. STRAWBRIDGE, and DOUGLAS N. GOOD

Appeal No. 2004-0573
Application No. 09/406,017

ON BRIEF

Before HAIRSTON, RUGGIERO, and DIXON, **Administrative Patent Judges**.
DIXON, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-25,
which are all of the claims pending in this application.

We AFFIRM-IN-PART.

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Appellants' invention relates to a method and apparatus for a simulation monitor that detects and reports a status event to a database. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

1. A monitor that detects a design verification event and reports a status event to a database, comprising:

a monitor declaration;

zero or more signal declarations wherein an individual signal declaration describes a signal having a signal name;

zero or more bus declarations wherein said bus declaration defines a bus that further comprises a set of signals that represents a single value determined by packing single bit values into a multibit variable; and

one or more logic expressions that the monitor uses to evaluate whether the design verification event has occurred so that the monitor can return a status event.

The prior art of record relied upon by the examiner in rejecting the appealed claims is as follows:

Giramma	5,706,476	Jan. 6, 1998
Rostoker et al. (Rostoker)	5,867,399	Feb. 2, 1999

Rajan, S., "Essential VHDL: RTL Synthesis Done Right," Chapters 2 and 8, pp 13-23, 141-165 (Copyright 1997)

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Claims 1, 2, 4-7, 9-12, 14, 16, 17, 19-22, 24, and 25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Rostoker in view of Rajan. Claims 3, 8, 13, 18, and 23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Rostoker and Rajan in view of Giramma.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellants regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 11, mailed Aug. 26, 2003) for the examiner's reasoning in support of the rejections, and to appellants' brief (Paper No. 10, filed Jun. 8, 2003) and reply brief (Paper No. 12, filed Oct. 27, 2003) for appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by appellants and the examiner. As a consequence of our review, we make the determinations which follow.

At the outset, we note that appellants have elected to specifically address claims 1-5 and have the remainder of the claims stand or fall with their corresponding claim. (Brief at page 3.) Therefore, we will address claims 1-5 as the representative claims.

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness. **See In re Rijckaert**, 9 F.3d 1531,

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1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A *prima facie* case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. **See In re Lintner**, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is *prima facie* obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. **See In re Fine**, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Rejections based on § 103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. See **In re Warner**, 379 F.2d 1011, 1017, 154 USPQ 173, 177 (CCPA 1967), **cert. denied**, 389 U.S. 1057 (1968). Our reviewing court has repeatedly cautioned against employing hindsight by using the appellants' disclosure as a blueprint to reconstruct the claimed invention from the isolated teachings of the prior art. **See, e.g., Grain Processing**

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Corp. v. American Maize-Prods. Co., 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988).

When determining obviousness, "the [E]xaminer can satisfy the burden of showing obviousness of the combination 'only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in art would lead that individual to combine the relevant teachings of the references.'" **In re Lee**, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), citing **In re Fritch**, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" **In re Dembiczak**, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). "Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact." **Dembiczak**, 175 F.3d at 999, 50 USPQ2d at 1617, citing **McElmurry v. Arkansas Power & Light Co.**, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993) .

Further, as pointed out by our reviewing court, we must first determine the scope of the claim. "[T]he name of the game is the claim." **In re Hiniker Co.**, 150 F.3d 1362,1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998). Therefore, we look to the limitations set forth in independent claim 1.

With respect to independent claim 1, appellants argue that the examiner has “failed to consider the claimed invention as a whole and has failed to consider the references as a whole.” (Brief at page 10.) Appellants further argue that the invention in its broadest form, is a simulation monitor that detects a design verification event that occurs during a simulation. (Brief at page 10.) We disagree with appellants’ conclusions regarding the invention as a whole and the broadest form of the claimed invention. Here, we would agree with the appellants, if the claims were as narrowly drawn as appellants argue, but we disagree with appellants as to the broadest reasonable interpretation of the claims. For example, we do not find the word “simulation” anywhere in independent claim 1. Nor do we find that the monitor is in addition to a simulation program explicitly running and therefore is a separate and distinct entity therefrom. Therefore, we disagree with appellants’ interpretation of the claimed invention as a whole.

From our review of the claimed invention and the simulation system of Rostoker, we find that the examiner’s position regarding the state table as a monitor is reasonable in view of the breadth of the claimed invention. Furthermore, the examiner goes to lengths to find and combine both the signal and bus declarations whereas we find that the limitation “zero or more” completely deletes these limitations from the claim when the “zero” is the broadest interpretation.

Here, it really amounts to a scope of claim issue rather than an issue of closeness of the applied prior art to the invention which appellants desired to set forth in the claims. We find that appellants' claim language is entitled to a rather broad interpretation so that the applied prior art to Rostoker alone meets the claimed invention.

With this said, we do not find that appellants' arguments are commensurate in scope with appellants' claim language and therefore, these arguments are not persuasive.

We address appellants' specific arguments as follows. Appellants argue that the specification describes verification events or specified states and that neither Rostoker nor Rajan teach a simulation monitor that detects a design verification event using logic expressions within the meaning and usage of the phrases as in the instant specification. (Brief at page 10-11.) We do not find specific definitions of these phrases at the indicated portions of appellants' specification. Appellants' specification merely provides examples of functional events and general discussion thereof. Therefore, appellants have not specifically defined these terms or phrases so as to limit the examiner's interpretation of the design verification events as appellants desire.

Appellants argue that neither Rostoker nor Rajan teach updating a database when a specified design verification event identified in a logic expression is detected.

(Brief at page 11.) We disagree with appellants and agree with the examiner that Rostoker teaches the updating of databases 2906 and 2914. Moreover, we find that the state table of Rostoker would have also been a database which temporarily stores the results and states of the simulation of logic events that have been selected by the user for viewing by the user. Therefore, this argument is not persuasive.

Appellants argue that watching a simulation in real time might be construed as “monitoring,” but it is not the function, intent or meaning of the term “monitor” as the term is used in the present disclosure. (Brief at pages 13-14.) Appellants have not identified any specific portion of the instant specification where the term “monitor” has been given a specific definition. Therefore, this argument is not persuasive. At pages 14-20 of the brief, appellants argue that Rostoker and Rajan do not teach the specific claimed limitations and disputes the examiner interpretation. We disagree with appellants. At page 16, appellants argue that the examiner contends that the state table is both a monitor and a database. We find no problem with the examiner’s finding since there must be programming and logic which would obtain the discrete values and output them to the state table. Furthermore, there must be programming and logic to format and present the data to the user in the state table format and to at least temporarily store that data. Therefore, we do not find the examiner’s position unreasonable.

Appellants argue that nothing in the portions of Rostoker cited by the examiner describe a “monitor declaration” as disclosed in the instant disclosure. (Brief at page 17.) While we agree that those sections of the text cited by the examiner do not clearly disclose a “declaration,” we find that Figure 29 cited by the examiner and its associated description at columns 43 (and Figures 30-32 and column 44 et seq.) disclose the use of C++ programming which would generally suggest the use of such declarations for variables and portions of object oriented programming. Therefore, we find that Rostoker fairly suggests the use of a monitor declaration as broadly recited in the language of independent claim 1.

Appellants argue that Rostoker does not teach “one or more logic expressions that the monitor uses to evaluate whether the design verification event has occurred so that the monitor can return a status event” as recited in independent claim 1. Appellants dispute that the analysis of the logic is not monitoring a simulation, but appellants do not identify any specific definition in the specification of the limitation or line of reasoning beyond that Rostoker does not teach a “simulation monitor” which we have discussed above and not found persuasive. Therefore, this argument is not persuasive.

With respect to appellants’ arguments that Rostoker and Rajan do not teach signal declarations and bus declarations (brief at pages 18-20), we find that the

inclusion of “zero” in each limitation thereby negates the limitation. Therefore, this argument is not persuasive.

Appellants conclude that the examiner has not established a *prima facie* case of obviousness. (Brief at page 22.) We disagree with appellants and find that Rostoker alone teaches all of the limitations of the broadly recited claim limitations, and we will sustain the rejection of independent claim 1 and independent claims 6, 11, 16, and 21 which appellants have elected to group therewith.

With respect to dependent claim 2, appellants argue that the databases in Figure 8 are not described and that it is merely assumed that they would store design events detected by a monitor during a simulation. (Brief at page 23.) Appellants further argue that element 2914 is accessed by element 2401 and that there is no simulation monitor tool. Again, this argument is based upon appellants’ interpretation of [simulation] monitor which we disagree with above. Therefore, this argument is not persuasive. Appellant argues that it is clear that Rostoker does not teach a “database containing a history of design events detected by a monitor running alongside a simulation.” Again, we do not find this argument commensurate in scope with the language of dependent claim 2. Therefore, this argument is not persuasive, and we will sustain the rejection of dependent claim 2 and dependent claims 7, 12, 17, and 22 which appellants have elected to group therewith.

With respect to dependent claim 3, the examiner adds the teachings of Giramma to teach the use of N-NARY logic. Appellants argue that Giramma does not teach the use of N-Nary logic, 1-of-N signal or an N-NARY signal. (Brief at pages 25-26.) Appellants have identified that N-NARY logic has been defined and discussed in the specification and in various other patents, some of which are incorporated by reference in the present specification to define this logic. Appellants argue that Giramma teaches binary logic rather than N-NARY logic as recited in dependent claim 1. We agree with appellants that Giramma does not teach or suggest N-NARY logic as defined by appellants. Therefore, the examiner has not established a *prima facie* case of obviousness with respect to dependent claim 3, and we will not sustain the rejection of claims 3, 8, 13, 18, and 23.

With respect to dependent claim 4, the examiner relies upon the teachings of Rostoker at column 44 to teach a parser for the program. Appellants argue that Rostoker does not teach a parser that translates the monitor code into code that uses a standard computer language. While we are unclear whether appellants intend for the “parser” to perform some additional function beyond a standard parsing function, we do find that Rostoker would have employed a parsing function as evidenced in Figure 10 and parser element 1004 as described in columns 24-25. Therefore, we find that the simulation system of Rostoker teaches the use of a parser. Therefore, we will sustain the rejection of dependent claims 4, 9, 14, 19, and 24.

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With respect to dependent claim 5¹, appellants admit that Figure 16 teaches the use of plural computers in the operation of the simulator, but argue that since Rostoker does not teach a simulation monitor, Rostoker cannot teach that these computers execute the monitor code. (Brief at pages 29-30.) We disagree with appellants as discussed above with respect to monitor. Therefore, if the computers execute the simulation which monitors its own operation, we find that Rostoker teaches the invention recited in dependent claims 5, 10, 15, 20 and 25 and we will sustain the rejection thereof.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 2, 4-7, 9-12, 14-17, 19-22, 24, and 25 under 35 U.S.C. § 103 is affirmed, and the decision of the examiner to reject claims 3, 8, 13, 18, and 23 under 35 U.S.C. § 103 is reversed.

¹ We note that "the code" in line 2 lacks proper antecedence in claim 1. We leave it to the examiner to address this issue upon return of the application to his jurisdiction.

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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
JOSEPH F. RUGGIERO)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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JOSEPH L. DIXON)	
Administrative Patent Judge)	

JLD/vsh

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BOOTH & WRIGHT LLP
P O BOX 50010
AUSTIN, TX 78763-0010