

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TYLER JAMES JOHNSON

Appeal 2007-2940
Application 10/453,103
Technology Center 2800

Decided: January 04, 2008

Before JOSEPH F. RUGGIERO, ANITA PELLMAN GROSS,
and JOHN A. JEFFERY, *Administrative Patent Judges*.

GROSS, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Johnson (Appellant) appeals under 35 U.S.C. § 134 from the Examiner's Final Rejection of claims 1 through 25, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

According to Appellant, the invention relates to a method of optimizing post-silicon test coverage for a system under test. *See generally*

Spec., para. [0009]. Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A method of optimizing post-silicon test coverage for a system under test ("SUT"), the method comprising:

defining coverage data comprising Hardware Description Language ("HDL") events;

configuring the SUT using configuration data collected from an observability debug bus associated with the SUT;

testing the SUT using a system exerciser connected to the SUT; and

comparing the results of the testing with the coverage data to identify underutilized areas of functionality of the SUT.

The prior art references of record relied upon by the Examiner in rejecting the appealed claims are:

Noy	US 2001/0010091 A1	Jul. 26, 2001
Hauck	US 6,594,816 B1	Jul. 15, 2003
Nejedlo	US 2004/0204912 A1	Oct. 14, 2004

Claims 1 through 23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Noy in view of Nejedlo.

Claims 24 and 25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Noy in view of Nejedlo and Hauck.

We refer to the Examiner's Answer (mailed July 17, 2006) and to Appellant's Brief (filed April 20, 2006) and Reply Brief (filed September 18, 2006) for the respective arguments.

SUMMARY OF DECISION

As a consequence of our review, we will reverse the obviousness rejections of claims 1 through 25.

OPINION

Independent claim 1 includes a step of "configuring the SUT using configuration data collected from an observability debug bus associated with the SUT." Independent claim 10 recites a "means for" accomplishing the configuring step recited in claim 1. Independent claim 18 includes "a configuration data structure comprising configuration data collected from an observability bus associated with the SUT, the configuration data operable to configure the SUT with respect to testing." Thus, all three independent claims include a limitation pertaining to configuring the SUT using configuration data obtained from an observability bus.

The Examiner (Ans. 4) asserts that Noy discloses a debug bus as the coverage feedback path labeled "5" in Figure 4. Further, the Examiner asserts (Ans. 4) that Nejedlo's diagnostic information bits and test configurable options in Table 4 satisfy the claimed step of configuring the device being tested using configuration data collected from an observability debug bus. More specifically, the Examiner (Ans. 4) points to Nejedlo's description of bit 8 being "shadowed to an observability pin that can be used for IRQ generation." The Examiner concludes (Ans. 4) that Noy and Nejedlo "collectively teach all the claimed elements." Further, the Examiner asserts (Ans. 4-5) that Nejedlo's disclosure of needing a debug bus associated with the system under test in paragraph [0003] provides a motivation for modifying Noy.

Appellant contends (Br. 10-11) that Noy improves test coverage by finding holes in coverage, modifying the input processes for those areas, and repeating the test, but does not disclose configuring the system under test using configuration data collected from an observability debug bus. Further, Appellant contends (Reply Br. 3-5) that Noy's coverage feedback information in Figure 4 is used to create new tests, not to configure the system or device under test (SUT or DUT). In addition, Appellant contends (Br. 11-12 and Reply Br. 5-10) that Nejedlo relates to testing the operation of data bus interconnects, not to configuring and testing a device or system under test. Appellant contends (Br. 13-14) that Nejedlo's bit 8

may be provided on an observability debug bus only to convey to the outside world the error status of the interconnect being tested. There is no teaching or suggestion whatsoever of how the information relating to bit 8 may be utilized to configure a bus interconnect being tested, let alone a DUT or SUT.

Thus, Appellant contends (Br. 14) that the combination of Noy and Nejedlo fails to provide all of the claimed elements. The issue before us is whether the combined disclosures of Noy and Nejedlo teach or suggest configuring the SUT using configuration data collected from an observability debug bus associated with the SUT.

We agree with Appellant that Noy fails to disclose configuring the system under test. After each run of the test, Noy modifies the input processes for the holes in coverage, and repeats the test. Noy does not configure the device or system under test. Noy's coverage feedback provides data to modify the test, not to configure the system being tested. In addition, we agree with Appellant that Nejedlo discloses testing data bus interconnects, not configuring a device or system under test. Further,

although Nejedlo mentions observability on a debug bus in the note for bit 8 in Table 4, Nejedlo does not disclose that any information relating to bit 8 is used to configure what is being tested. Thus, as neither Noy nor Nejedlo discloses configuring the SUT using configuration data collected from an observability debug bus associated with the SUT, neither does the combination. Accordingly, we cannot sustain the obviousness rejection of claims 1 through 23 over Noy in view of Nejedlo.

The Examiner adds Hauck to the primary combination to reject claims 24 and 25. However, as Hauck fails to cure the deficiency described *supra* of Noy and Nejedlo, we cannot sustain the obviousness rejection of claims 24 and 25.

ORDER

The decision of the Examiner rejecting claims 1 through 25 under 35 U.S.C. § 103 is reversed.

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REVERSED

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