

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CADENCE DESIGN SYSTEMS, INC.,
Petitioner

v.

SEMICONDUCTOR DESIGN TECHNOLOGIES, LLC,
Patent Owner

Case IPR2024-00024
U.S. Patent No. 7,971,167

**PATENT OWNER'S SUR-REPLY IN SUPPORT OF
PATENT OWNER'S PRELIMINARY RESPONSE**

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I. Petitioner failed to establish that Shin was publicly accessible.

Petitioner (“CDS”) argues that it does **not** need to show that the websites on which Shin was allegedly posted were meaningfully indexed and had search functionality because the CECS research group and the professors were prominent. Reply, 1-3. Even if true, which Patent Owner (“SDT”) does not concede, that alleged prominence would only satisfy the first part of the two-part test for public accessibility of Shin (finding the website). *Samsung Elecs. Co., Ltd. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1369 (Fed. Cir. 2019) (“...evidence that [1] a person of ordinary skill could have reasonably found the website and then [2] found the reference on that website.”). But SDT’s arguments focused on CDS’s failure to satisfy the second part: whether a POSA could have located Shin on the websites. POPR, 22-27. CDS has provided no rebuttal other than that the alleged prominence is enough. That is wrong.

CDS’s argument that “Courts frequently find public accessibility based on the prominence of the authors or publication forum” misstates the law.¹ Reply, 1-2 (citing *M&K Holdings, Inc. v. Samsung Elecs. Co., Ltd.*, 985 F.3d 1376 (Fed. Cir. 2021) and *Voter Verified, Inc. v. Premier Election Sols., Inc.* 698 F.3d 1374 (Fed. Cir. 2012)). Both *M&K* and *Voter Verified* demonstrate that such prominence is relevant to the first part of the test (finding the website); but the second part (finding the

¹ CDS does not allege Shin itself was sufficiently prominent for public accessibility.

reference on the website) must also be satisfied. *M&K* explained that because JCT-VC was prominent, “the dispositive question is whether interested users of the JCT-VC website could have located [the relevant references] through reasonable diligence.” 985 F.3d at 1381. In *Voter Verified*, “there was ‘uncontested evidence’ that ‘a person of ordinary skill interested in the relevant subject matter would have been independently aware of the website’ *and* that ‘such an interested researcher would have found the reference using that website’s own search functions and applying reasonable diligence.’” *Infobridge*, 929 F.3d at 1369 (cleaned up; emphasis in original) (explaining why facts in *Voter Verified* satisfied the two-part test).

At best, the alleged prominence would tend to show that a POSA could have found the relevant websites. That is not enough. CDS has not shown that the websites were meaningfully indexed. POPR, 22-23. CDS does not even allege that the websites had **any** built-in search functionality or defend the “ctrl-f” argument that it presented with the Petition. *See* POPR, 23-24, 26-27; EX1010, ¶¶11, 16.

That a website is meaningfully indexed and has sufficient search functionality are important factors. POPR, 20-21 (quoting *Blue Calypso*). Absent those showings, CDS must establish that a POSA could have located Shin another way. It failed to. CDS’s argument that Shin is listed first in the 2003 section of the CECS website misses the point—the website was not meaningfully indexed, POPR, 22-23, and it had other sections by the critical date (2007), *see* EX1011, 5 (2002-2004). Thus, a

POSA would have needed to know exactly (i) where to look and (ii) what to look for, which is insufficient. *Infobridge*, 929 F.3d at 1372 (“[A] work is not publicly accessible if the only people who know how to find it are the ones who created it.”).

Finally, SDT did not argue *Acceleration Bay* “categorically exclude[d] all technical reports (‘TR’) as prior art.” *See* Reply, 1. Rather, because the facts in *Acceleration Bay* are remarkably similar to the facts here, the Board should find that CDS has not shown that Shin was publicly accessible. *See* POPR, 17-18, 21-22.

II. SDT did not advance an implicit construction of “RTL.”

STD’s positions do not require any express or implied construction of “RTL.” Harada, Shin, and Gutberlet fail to disclose the claimed analyzer and correspondence table, which act on or reference an “RTL description.” CDS relies on activities as performed prior to or independent of generating an RTL description.

In Shin, CDS relies on an interface for generating a Super Finite State Machine, which occurs several steps before generating RTL. POPR, 36; EX1006, ¶26, FIG. 2. In Gutberlet, CDS relies on loop handling early in the design process, *i.e.*, prior to generating RTL (to avoid generating RTL, assessing latency), and going back to modify the source code. POPR, 33-36; EX1005, 2:17-18, 6:2-4, 6:11-14, 33:10-34:2, FIG. 3. These relied-upon activities do not involve RTL.

CDS relies on Harada’s simulation model, which Harada distinguishes from “HDL (Hardware Design Language),” the closest disclosure to RTL:

FIG. 2 ... shows an example of the configuration and the operation of **the simulation model generation unit** (see the unit with numeral 11 in FIG. 1) **that generates a simulation model from a behavior level description** ... Note that the simulation model generation unit 11 in FIG. 1 may **also** have a configuration composed of ... **the HDL (Hardware Description Language) generation function**.

EX1004, ¶99 (emphasis added). Harada does not explain HDL generation further or state how or why the HDL could even be used in the context of the simulation system. As CDS's expert states, "**HDL code was typically written at the register-transfer level ('RTL')**, meaning it described the transfer of signals between hardware registers, synchronized to the IC's clock signal." EX1003, ¶4; *see also id.*, ¶16 (interchangeably referencing RTL and HDL). Thus, Harada distinguishes the simulation model from HDL, which is the closest teaching to RTL.

Harada's simulation model is not RTL; it works at the state-machine level—a higher-level of abstraction than RTL. For example, FIG. 7 shows a simulation model expressed as a switch statement that selectively executes states ST1-ST4. EX1004, ¶106. Harada's discussion of running the simulation model in ¶¶107-111 focuses on state transitions and labeling conditional branches. This is different than running a simulation on RTL, as explained by CDS's expert: "[a] designer ... applies stimulus to the design and observes the behavior of the design by looking at simulator output in the form of simulation data or waveforms." EX1003, ¶16 .

CDS alleges Reg_A, Reg_B, Reg_C, and Reg_o1 show that “Harada’s simulation model describes hardware, including the data flow between registers...” Reply, 3. But these are variable names used by Harada’s simulation model; they do not define hardware as would be understood by an RTL simulator. Even at the behavioral level, Harada refers to an output register: “the input terminals are defined in the first to third lines, and the **output register is defined in the fourth line**” when discussing the behavioral source code in FIG. 4. EX1004, ¶100. Harada teaches the code is written in C, not an HDL language. *Id.* Later, Harada states “[i]n the 16th line, **A+B+C is set in the register o1.**” *Id.* But neither party has alleged that the behavioral description qualifies as RTL (e.g., EX1003, ¶¶5-6), even though Harada’s example in FIG. 4 purports to define the output register and describe the data flow, *i.e.*, set A+B+C to the output register. CDS also shows RTL code excerpted from SDT’s infringement contentions. Reply, 5 (citing EX1017). This RTL references actual hardware blocks and can be analyzed as described by CDS’s expert: “[a] designer loads the HDL design into a simulator, applies stimulus to the design and observes the behavior of the design by looking at simulator output in the form of simulation data or waveforms.” EX1003, ¶16 (citing EX1023). CDS’s attempt to muddle Harada’s simulation model (a state-machine level description) and industry-standard RTL (a hardware-level description) should be rejected.

Respectfully submitted,
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing **PATENT OWNER'S
SUR-REPLY IN SUPPORT OF PATENT OWNER'S PRELIMINARY
RESPONSE** was served electronically via e-mail on March 14, 2024, in its
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