

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DISH NETWORK CORP., DISH NETWORK LLC, and
DISH NETWORK SERVICE LLC,
Petitioner,

v.

ENTROPIC COMMUNICATIONS, LLC,
Patent Owner.

IPR2023-00391
Patent 7,130,576 C1

Before LYNNE H. BROWNE, PATRICK R. SCANLON, and
JON M. JURGOVAN, *Administrative Patent Judges*.

JURGOVAN, *Administrative Patent Judge*.

DECISION
Denying Request for Rehearing of Decision Denying Institution of
Inter Partes Review
37 C.F.R. 42.71(d)

I. INTRODUCTION

DISH Network Corp., DISH Network LLC, and Dish Network Service LLC (collectively “Petitioner”) filed a Petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 8–23 and 34–42 of U.S. Patent 7,130,576 C1 (Ex. 1001, “the ’576 patent”). Entropic Communications, LLC (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”). Patent Owner disclaimed claims 8–13 of the ’576 patent. Prelim. Resp. 66–67. After consideration of the Petition and Preliminary Response, we entered an Institution Decision (Paper 10, “Inst. Dec.”) denying *inter partes* review of the ’576 patent. Thereafter, Petitioner filed a Request for Rehearing (Paper 11, “Req. Reh’g”) of the Institution Decision.

The Board’s decision on whether to institute a trial is final and nonappealable. 37 C.F.R. § 42.71(c). However, a party is permitted to file a single request for rehearing, and the Board will review the decision for abuse of discretion. 37 C.F.R. § 42.71 (c) and (d). “The burden of showing a decision should be modified lies with the party challenging the decision.” 37 C.F.R. § 42.71(d). “The request must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed.” *Id.* An abuse of discretion may arise if the decision is based on an erroneous interpretation of law, if a factual finding is not supported by substantial evidence, or if an unreasonable judgment is made in weighing relevant factors. *Star Fruits S.N.C. v. U.S.*, 393 F.3d 1277, 1281 (Fed. Cir. 2005); *Arnold P’ship v. Dudas*, 362 F.3d 1338, 1340 (Fed. Cir. 2004); *In re Gartside*, 203 F.3d 1305, 1315–16 (Fed. Cir. 2000).

We determine that Petitioner’s assertions do not show that we misapprehended or overlooked any matters, or otherwise abused our discretion, and we deny Petitioner’s Request for Rehearing for the following reasons.

II. ANALYSIS

Petitioner argues that, in the Institution Decision, we wrongly concluded that there was insufficient motivation to combine Williams and Pugel in the sole challenge ground. Req. Reh’g 1, Inst. Dec. 24–27. Specifically, Petitioner asserts the following: (A) “the Board fixated on the problem addressed by each prior art reference rather than considering their teachings as a whole”; (B) “although obviousness is to be determined at the time the claimed invention was made, the Board focused here on an earlier point in time—when the references were filed”; (C) “the Board ignored Petitioners’ un rebutted evidence of specific technologies that were known and available by the time of the invention to modify Williams to use digital, rather than analog, signal processing”; and (D) Petitioner’s un rebutted evidence was sufficient to establish motivation to combine the prior art and a reasonable likelihood to prevail in demonstrating unpatentability. Req. Reh’g 1–2. We consider Petitioner’s arguments sequentially below.

A. Board’s Alleged Fixation on Problems Discussed in the Prior Art References

Petitioner contends that “[t]he Board erroneously accepted [Patent Owner’s] argument that ‘Williams and Pugel are directed to solving different problems, so one of ordinary skill in the art would not have been led to combine them.’” Req. Reh’g 6. Patent Owner argued that Williams addressed the problem of being constrained to use a single cable to deliver

content to a multi-dwelling unit (MDU), whereas Pugel addressed how to digitize and decode data received from an outdoor unit (ODU). In the Institution Decision, we stated that “[b]ased on the problems addressed, one of ordinary skill in the art would not have been led to combine the references.” Inst. Dec. 26–27. In other words, the problems discussed in the prior art references are different and do not provide a reason for one of ordinary skill in the art to combine the prior art references.

We also disagree with Petitioner’s characterization of our Institution Decision as “fixated” on the problems addressed by the prior art references rather than their teachings as a whole. There were several other considerations that we discussed in the Institution Decision. Inst. Dec. 24–27. Those considerations include that moving the point of digitization earlier in Williams’s system according to Pugel’s teaching, as Petitioner proposed, is not merely a matter of moving Pugel’s analog-to-digital converter (ADC) but would require additional circuitry that the Petition did not sufficiently account for (Inst. Dec. 24–25). We also noted that the Petition did not identify adequately digital equivalents for Williams’s analog components, and “whether they were available at the time of the ’576 patent” (Inst. Dec. 25). We further noted that Petitioner did not sufficiently address the complexity or costs associated with additional digital-to-analog converters (DACs) or a digital combiner in its proposed combination (Inst. Dec. 25–26); that moving Pugel’s ADC and associated circuitry from the indoor to outdoor portion would require circuitry appropriately rated and protected for outdoor use (Inst. Dec. 26); and whether the digitization technology required to implement the proposed combination existed when Williams and Pugel were filed, when sufficiently capable samplers or ADCs

for extracting the wide range of frequencies contained in a satellite broadband signal were, according to Petitioner's evidence, available only three months before the '576 patent was filed (Inst. Dec. 27).

Also contradicting Petitioner's assertion that we "fixated" on the problems of the prior art references is that we explicitly mentioned in our Institution Decision the evidence that Petitioner contends that we ignored. *Compare* Inst. Dec. 18–20 *with* Req. Reh'g 5–6. Furthermore, we noted the lack of evidence on several points important to the obviousness analysis. Inst. Dec. 24–27. Petitioner's assertion that we "fixated" on the problems of the prior art references to the exclusion of other evidence is not persuasive. Req. Reh'g 1, 6–8.

B. Board's Alleged Erroneous Assessment of Obviousness from When the Prior Art Was Filed Rather than When the Invention Was Made

Petitioner notes that the '576 patent's earliest priority date is November 7, 2001. Req. Reh'g 8. Petitioner asserts that its expert, Dr. Schonfeld, "explained that, by November 2001, digitization technology had progressed to the point where it had become practical to digitize broadband analog TV signals," and that Patent Owner does not dispute this point. *Id.* at 8 (citing Ex. 1002 ¶ 117). Petitioner contends that "the Board rejected Petitioners' evidence because Petitioners made 'no showing that this [digitization] technology existed when Williams and Pugel were filed.'" *Id.* at 9 (emphasis omitted) (citing Inst. Dec. 27). Petitioner contends that the "Board erred by focusing on obviousness when the prior art patents were filed, rather than the time of the claimed invention." Req. Reh'g 9 (emphasis omitted) (citing pre-AIA 35 U.S.C. § 103(a)).

As we explained in the Institution Decision, Dr. Schonfeld described a design trend where digital processing in later stages of electronic systems moved to the earliest possible stages as the samplers or ADCs required for digital signal processing improved. Inst. Dec. 27 (citing Ex. 1002 ¶ 117); *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007) (design trends are considered in obviousness analysis). According to Dr. Schonfeld, the digitization technology that could accommodate broadband signals existed by November 2001. *Id.* But Petitioner did not show sufficiently that one of ordinary skill in the art would have recognized that this technology could or should be applied to the proposed combination of Williams and Pugel. *Id.* The digitization technology to accommodate broadband signals existed only three months before the ’576 patent was filed in February 2002. Petitioner identified insufficient evidence to support that Williams or Pugel contemplated such technology, which was our point in stating in the Institution Decision that “[t]here is, however, no showing that this technology existed when Williams and Pugel were filed.” *Id.* This statement was not related to when obviousness is determined, but was instead directed to the scope and content of the prior art references, Williams and Pugel. *See* Inst. Dec. 9; *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966) (obviousness analysis under *Graham* includes consideration of the scope and content of the prior art).

For the foregoing reasons, Petitioner’s assertions are unpersuasive.

C. The Board’s Alleged Ignoring Petitioners’ Evidence Regarding the Known Digital Equivalents of Williams’s Analog Components

Petitioner asserts that the Board improperly found that Petitioner did not adequately show digital equivalents to analog components for

performing the functions of tuning, frequency translation, and signal combining when Petitioner’s un rebutted evidence allegedly showed these devices were in the prior art. Req. Reh’g 11 (citing Inst. Dec. 25).

Specifically, Petitioner contends that the ’576 patent describes digital filters as well known, and that Pugel and Lovinggood¹ disclosed digital filters for channel selection. Req. Reh’g 11–12 (citing Pet. 12; Ex. 1001, 5:12–30; Ex. 1023, 5:3–25; Ex. 1003 ¶¶ 6, 18; Ex. 1002 ¶¶ 75 (Lovinggood), 109 (Pugel); Prelim. Resp. 27). Petitioner contends both Pugel and Lovinggood disclosed numerically-controlled oscillators (NCOs) for frequency translation. *Id.* at 12 (citing Pet. 7–8, 13; Ex. 1002 ¶ 75; Ex. 1004 ¶ 22). Petitioner also contends that both Pugel and Lovinggood disclosed digital adders. *Id.* (citing Pet. 8; Ex. 1023, 9:58–67; Ex. 1004 ¶ 26; Ex. 1002 ¶ 75). In addition, Petitioner asserts that digital counterparts of Williams’s analog switches 53, tuners 54, and variable frequency upconverter 66 could be implemented using software in a general-purpose processor, which is inexpensive and allows for future modification. *Id.* at 13 (citing Ex. 1002 ¶¶ 120–122, 130; Pet. 28). Petitioner contends that it identified digital

¹ Lovinggood is not part of Petitioner’s combination, but may be considered in the obviousness analysis as background knowledge of the person of ordinary skill in the art. *See* Pet. 5–8; *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (knowledge of person of ordinary skill in the art considered in obviousness analysis). This assumes, however, that Patent Owner had adequate notice that Petitioner was relying on Lovinggood for this purpose. *Anacor Pharms., Inc. v. Iancu*, 889 F.3d 1372, 1379 (Fed. Cir. 2018) (under the Administrative Procedure Act, a patent owner is entitled to notice and a fair opportunity to address the grounds of rejection). Lovinggood is mentioned in the Petition as “state of the art” (Pet. 5–8) but is not mentioned again in the Petition discussing the combination of Williams and Pugel (Pet. 24–75).

equivalents to Williams's analog components, and that our finding to the contrary was clearly erroneous. Req. Reh'g 13.

Petitioner did not show sufficiently that Pugel's or Lovinggood's digital devices, alleged to be equivalent to Williams's analog devices, should or could be used in the combination of Williams and Pugel in the manner claimed. Williams states that the antenna 14 is "disposed on, for example, the roof of an MDU [multiple dwelling unit] or any other location capable of receiving a signal transmitted by a satellite or other source." Ex. 1003, 5:59–62. However, Williams shows that its transmodulator 20 is separate from the antenna 14 and low noise block (LNB) 16 of its system. *Id.* at Fig. 1. Pugel states that its analog processing section 110 at the front-end of its receiver system 100 receives input signals from the outdoor portion (satellite dish and associated circuitry), implying that Pugel's receiver system 100 is located indoors. Ex. 1004 ¶ 17. Claim 14 of the '576 patent, however, requires that the digitizing of satellite broadband signals and selecting and extracting of transport signals from the digitized signals and combining them in a composite signal occurs outdoors in the ODU. Ex. 1001, 2:14–24. Petitioner did not show that the prior art suggests that these digital devices should or could be used outdoors in an ODU.

Petitioner's arguments do not persuade us of error.

D. Allegation that Board's Reasons Do Not Rebut Petitioner's Evidence

Petitioner contends that the Board suggested that a person of ordinary skill in the art would not move Pugel's ADC to an outdoor system because the circuitry would have to be "appropriately rated and protected for outdoor use." Req. Reh'g 14 (citing Inst. Dec. 26). Petitioner contends that the

Board did not cite evidence that moving circuitry from indoors to outdoors would have been beyond the abilities of a person of ordinary skill in the art, and that Williams says nothing about any of its circuitry being rated for outdoor use. Req. Reh'g 14.

As explained, Williams shows that its transmodulator 20 is separate from its dish antenna 14 and low noise block (LNB) 16, i.e., the outdoor portion of its system. *See* Ex. 1003, Fig. 2. Likewise, as explained, Pugel implies that its circuitry is not part of the outdoor portion of its system. Ex. 1004 ¶ 17. Lovinggood, which is not used in Petitioner's proposed combination, similarly shows its repeater 10 separate from antennas 8 and 12 and the tower on which they are mounted. Ex. 1023, 2:58–65, Fig. 1. Thus, Patent Owner identified a difference between the invention claimed in the '576 patent and Petitioner's proposed combination, namely, that the claims require at least the selecting of transponder signals in the satellite broadband signals responsive to transponder request signals, and the combining of selected transponder signals into a composite signal, to be performed in the ODU, whereas Petitioner's proposed combination does not mention this feature. Prelim. Resp. 46–47; *Graham*, 383 U.S. at 17–18 (obviousness analysis includes consideration of any differences between the claimed subject matter and the prior art). Petitioner did not explain sufficiently why a person of ordinary skill in the art would have considered it obvious to move the circuitry of its proposed combination to incorporate it in an outdoor ODU.

Petitioner further contends that the Board's suggestion that Petitioner should have addressed the added costs or complexity from Pugel's analog preprocessor, additional ADCs, or added digital combiner at most suggests

there may have been tradeoffs in making the proposed combination, and that tradeoffs do not necessarily negate obviousness. Req. Reh’g 14 (citing Inst. Dec. 24–26; *Allied Erecting and Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (“A given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.”)). Petitioner contends that neither Patent Owner nor the Board cited any evidence indicating that these added costs would have offset the cost savings from eliminating high-cost tuning and processing arrangement in Williams’s system. Req. Reh’g 15 (citing Ex. 1004 ¶ 52; Ex. 1002 ¶ 110).

Petitioner did not sufficiently show, however, that after consideration of the tradeoffs, one of ordinary skill in the art would have pursued the proposed combination considering the additional cost and complexity that would be required. The burden of making this showing lied with Petitioner. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3)); *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016).

Petitioner contends that it relied, as motivation to combine, on the proposition that digital equivalents were generally more efficient, reliable, and flexible than their analog counterparts. Req. Reh’g 15 (citing Pet. 28; Ex. 1002 ¶¶ 120–122). This assumes that the digital equivalents existed and were recognized in the prior art as suitable substitutes for use in the proposed combination of Williams and Pugel, which, for the reasons explained, has not been sufficiently shown in this case.

For the foregoing reasons, Petitioner has not carried its burden to show that the Board abused its discretion in denying institution of *inter partes* review in this case.

III. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petitioner's Request for Rehearing of our Decision Denying Institution of Inter Partes Review is *denied*.

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