ADDENDUM

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CONFIDENTIAL MATERIAL OMITTED

Material has been omitted from this Addendum consistent with the protective order entered in the United States Patent and Trademark Office below and the Director's filing of a sealed version of an order. Pages Appx234 and Appx236 omit information reflecting hourly billing rates of VLSI's counsel. Pages Appx209-39 reflect the Director's redaction of a confidential-information header, which does not itself contain confidential information.

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Paper No. 14
Entered: June 8, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,
Petitioner,

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2022-00366
Patent 7,725,759 B2

Before THOMAS L. GIANNETTI, BRIAN J. MCNAMARA, and JASON W. MELVIN, *Administrative Patent Judges*.

MELVIN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

Granting Motion for Joinder
35 U.S.C. § 315(c); 37 C.F.R. § 42.122

I. INTRODUCTION

Intel Corporation ("Petitioner" or "Intel") filed a Petition (Paper 3, "Pet.") requesting institution of *inter partes* review of claims 1, 14, 17–18, 21–22, and 24 ("the challenged claims") of U.S. Patent No. 7,752,759 B2 (Ex. 1001, "the '759 patent"). Petitioner also filed a Motion for Joinder with *OpenSky Indus., LLC v. VLSI Tech. LLC*, IPR2021-01064 ("OpenSky IPR"). Paper 4 ("Mot."). VLSI Technology LLC ("Patent Owner") filed a Preliminary Response. Paper 13 ("Prelim. Resp."). Patent Owner also filed an Opposition to the Motion for Joinder. Paper 8 ("Opp."). Petitioner filed a Reply to Patent Owner's Opposition. Paper 10 ("Reply").

An *inter partes* review may not be instituted unless "the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). For the reasons set forth below, we conclude that Petitioner has shown a reasonable likelihood it will prevail in establishing the unpatentability of at least one challenged claim, and we institute *inter partes* review.

We also have authority to consider Petitioner's joinder motion under 35 U.S.C. § 315(c), which provides that "the Director, in his or her discretion, may join as a party to that inter partes review any person who properly files a petition under section 311 that the Director . . . determines warrants the institution of an inter partes review under section 314."

For the reasons that follow, we (1) grant the Petition and institute *inter partes* review of the '759 patent; and (2) grant Petitioner's Motion for Joinder.

A. Related Matters

The parties both identify the following matters related to the '759 patent: *VLSI Technology LLC v. Intel Corporation*, No. 1:19-cv-00426 (D. Del.); *VLSI Technology LLC v. Intel Corporation*, No. 6:19-cv-00254 (W.D. Tex.) consolidated with other cases as 1:19-cv-00977 (W.D. Tex.) and later deconsolidated as 6:21-cv-00057, Dkt. 1 (W.D. Tex. Apr. 11, 2019) (trial concluded with jury verdict); *Intel Corp. v. VLSI Tech. LLC*, IPR2020-00106 (PTAB May 5, 2020) (institution denied), *cert. denied*, 142 S. Ct. 1363 (2022) (No. 21-888); *Intel Corp. v. VLSI Tech. LLC*, IPR2020-00498 (PTAB Aug. 19, 2020) (institution denied), *cert. denied*, 142 S. Ct. 1363 (2022) (No. 21-888); *OpenSky Indus., LLC v. VLSI Tech. LLC*, IPR2021-01064 (PTAB) ("OpenSky IPR") (trial instituted). Pet. 1; Paper 6. Patent Owner also identifies *VLSI Tech. LLC v. Intel Corp.*, No. 6:21-cv-00299 (W.D. Tex.) as a matter related to the '759 patent. Paper 6.

B. Asserted Grounds

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	References/Basis
1, 14, 17	103	Shaffer,[1] Lint[2]
18, 21–22, 24	103	Shaffer, Lint, Kiriake[3]
1, 14, 17	103	Chen,[4] Terrell[5]
18, 21–22, 24	103	Chen, Terrell, Kiriake

[1] US 6,298,448 B1, issued Oct. 2, 2001 (Ex. 1005).
[2] US 7,360,103 B2, issued Apr. 15, 2008 (Ex. 1006).
[3] US 2003/0159080 A1, published Aug. 21, 2003 (Ex. 1028).
[4] US 5,838,995, issued Nov. 17, 1998 (Ex. 1003).
[5] US 2004/0098631 A1, published May 20, 2004 (Ex. 1004).

Pet. 3–5. Petitioner relies also on the Declarations of Dr. Bruce Jacob and Dr. Sylvia Hall-Ellis. Exs. 1002, 1040, 1046, 1049, 1050.

C. REAL PARTIES IN INTEREST

Petitioner identifies only itself as the real party in interest. Pet. 1. Patent Owner identifies VLSI Technology LLC and CF VLSI Holdings LLC as real parties in interest. Paper 6.

II. DISCUSSION

In deciding whether to join a party to an *inter partes* review, § 315(c) requires "two different decisions," first "whether the joinder applicant's petition for IPR 'warrants' institution under § 314," and then whether to "exercise . . . discretion to decide whether to 'join as a party' the joinder applicant." *See Facebook, Inc. v. Windy City Innov., LLC*, 973 F.3d 1321, 1332 (Fed. Cir. 2020). "The statute makes clear that the joinder decision is made *after* a determination that a petition warrants institution, thereby affecting the manner in which an IPR will proceed." *Id.* (citing *Thryv v. Click-to-Call Techs., LP*, 140 S. Ct. 1367, 1377 (2020)).

A. WHETHER THE PETITION WARRANTS INSTITUTION

The Petition in this proceeding asserts substantially the same grounds of unpatentability as those upon which we instituted review in the OpenSky IPR. *Compare* Pet. 4–5, 23–78 (showing that both this Petition and Intel's original petition challenge claims 1, 14, 17–18, 21–22, and 24), *with* OpenSky IPR 5, 7, 22–60 (showing that the OpenSky IPR challenges claims 1, 14, 17–18, 21–22, and 24). Indeed, Petitioner contends "that both petitions present substantively the same patentability challenges." Mot. 1. We agree

that the Petition here asserts challenges and evidence nearly identical to those asserted in the OpenSky IPR.

Having already considered the merits of those challenges and evidence in the OpenSky IPR and having determined that the threshold for institution of *inter partes* review has been met, we determine that the Petition here also presents a reasonable likelihood of prevailing on the challenges of at least one claim of the '759 patent. *See Apple Inc. v. Uniloc 2017 LLC*, IPR2020-00854, Paper 9 (Oct. 28, 2020) (precedential).

We conclude that the merits of the Petition warrant institution.

B. DISCRETIONARY DENIAL

Notwithstanding the merits of the Petition, Patent Owner argues that we should exercise our discretion to deny institution under 35 U.S.C. § 314(a) and, accordingly, also deny joinder. Prelim. Resp. 9–25; Opp. 5–15. Patent Owner's argument relies on the *Fintiv* and *General Plastic* factors. Opp. 5–10 (citing *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*"); *Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 16 (PTAB Sept. 6, 2017) (precedential as to § II.B.4.i) ("*General Plastic*")). Patent Owner also relies on 35 U.S.C. § 325(d), and specifically, on the Federal Circuit's application of § 325(d) in *In re Vivint, Inc.*, 14 F.4th 1342 (Fed. Cir. 2021). Prelim. Resp. 29–32. Before determining whether to join Intel as a party to the OpenSky IPR, even though the Petition is a "me-too petition,"

we first determine whether the record warrants the exercise of our discretion to deny the Petition under § 314(a) or § 325(d).[6]

1. District-court litigation (Fintiv)

Patent Owner argues that we should deny institution under *Fintiv*. Prelim. Resp. 9–18. The argument is based on a prior litigation in which a jury determined that Intel infringed the '759 patent ("the Intel litigation"). Ex. 1027 (Mar. 2, 2021, verdict).

Patent Owner addresses each of the six *Fintiv* factors for evaluating the effect of parallel litigation involving the challenged claims on discretionary denial. *See* Prelim. Resp. 9–18; *Fintiv*, Paper 11 at 5–6. Petitioner submits that the factors have limited applicability here because the unpatentability issues raised before the Board were not determined by the verdict in the Intel litigation. Reply 3.

Fintiv factor 1 asks if there is a possibility of a stay in the parallel litigation. Because the Intel litigation is complete, there is no possibility of a stay. *See* Prelim. Resp. 10–11. Similarly, Intel was the defendant in the district court litigation, which has a known outcome and investment. *Id.* at 10–13, 15 (discussing *Fintiv* factors 1, 2, 3, and 5). On the other hand, the unpatentability grounds here were not presented to the jury. *See id.* at 13–15; Pet. 5–6; Ex. 1027, 5 (showing the jury's rejection of the argument that the asserted claims of the '759 patent were "invalid for anticipation by the

[6] Many of Patent Owner's arguments in the Preliminary Response do not distinguish between the issues of whether the Petition warrants institution and whether, if so, we should grant joinder. We therefore address those arguments here, and, below, separately address arguments directed solely at the joinder decision.

Yonah Processor alone"). There would be no overlap, therefore, between this proceeding and the issues that were tried in the Intel litigation. *See* Pet. 5–6; Mot. 12; Prelim. Resp. 13–15 (discussing *Fintiv* factor 4).

Here, the Intel litigation did not resolve issues presented by this proceeding, so there is no chance of an inconsistent outcome. Indeed, "redoing the work of another tribunal" (*Fintiv*, Paper 11 at 14) would only arise when that tribunal has resolved a dispute at issue before the Board. Patent Owner has not argued that resolving a dispute in this proceeding would conflict with any aspect of the Intel litigation. Thus, we do not agree with Patent Owner that, because the litigation parties and the District Court invested "enormous effort," instituting review here would mean redoing the work of another tribunal. Opp. 9–10.

Patent Owner presents policy arguments in support of its position. *See* Prelim. Resp. 15–18 (discussing *Fintiv* factor 6). Patent Owner argues that instituting review here would lead to harassment of patent owners who prevail at trial, and that such an outcome fundamentally conflicts with Board precedent and policy. Opp. 9–10; Prelim. Resp. 10, 15–18. On the record before us, we do not agree that prevailing on infringement grounds in an earlier litigation insulates Patent Owner from further patentability challenges that were not resolved in the litigation.

Considering all of the *Fintiv* factors, we are persuaded that we should not exercise our discretion to deny institution in light of the Intel litigation.

2. Prior petitions (General Plastic)

On March 1, 2019, Intel was served with a complaint alleging infringement of the '759 patent. Ex. 2056. In IPR2020-00106 and IPR2020-00498 (the "Intel IPRs"), Intel challenged the '759 patent by filing petitions

for *inter partes* review with the Board, but the Board denied institution in both cases, by which point Intel was barred under § 315(b)[7] from filing any further petitions against the '759 patent. *Intel Corp. v. VLSI Technology LLC*, IPR2020-00106, Paper 17 (PTAB May 5, 2020); *Intel Corp. v. VLSI Technology LLC*, IPR2020-00498, Paper 16 (PTAB Aug. 19, 2020). Importantly, however, the Board denied institution applying *Fintiv*, based on parallel district-court litigation, not on the merits of the petition. *See* IPR2020-00106, Paper 17 at 4–13; IPR2020-00498, Paper 16 at 4–10; Opp. 1 (acknowledging that the Board rejected Intel's prior petitions challenging the '759 patent under *Fintiv*, "in view of a then-upcoming district court trial").

Following a jury verdict against Intel on March 2, 2021, OpenSky filed its petition challenging the '759 patent on June 7, 2021. IPR2021-01064, Paper 2. The Board granted that petition and instituted the OpenSky IPR on December 23, 2021. IPR2021-01064, Paper 17. Intel filed this Petition and its Motion for Joinder on December 27, 2021—one business day after the Board instituted the OpenSky IPR.

Patent Owner argues that we should exercise discretion to deny institution because the Petition presents the same challenges as prior petitions (IPR2020-00106 and IPR2020-00498) for which the Board denied review. Prelim. Resp. 18–25; Opp. 5–8. In that regard, Patent Owner relies on the framework from *General Plastic*, Paper 19 at 16.

[7] Section 315(b) of 35 U.S.C. establishes a one-year time limit for a party to file a petition for *inter partes* review of a patent after service on that party of a complaint charging infringement of the patent. This one-year time limitation does not apply to a request for joinder. *See* 35 U.S.C. § 315(b).

Factor 1: whether the same petitioner previously filed a petition directed to the same claims of the same patent;
Factor 2: whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it; and
Factor 3: whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition

Patent Owner argues that *Apple Inc. v. Uniloc 2017 LLC*, IPR2020-00854, Paper 9, supports denial when considering the third petition filed by a party. Prelim. Resp. 19–20. In *Uniloc*, the Board had denied Apple's first petition "because the evidence and arguments presented failed to meet substantively the reasonable likelihood threshold required for institution." *Id.*; *Uniloc*, Paper 9 at 6. Here, Petitioner's first two petitions were denied in light of a potential overlap with district-court litigation. IPR2020-00106, Paper 17 at 4–13; IPR2020-00498, Paper 16 at 4–10. The Board did not consider the substantive merits. *Id.* Thus, this case presents a situation notably different from *Uniloc*. The same is true of *General Plastic*, where the petitions that were denied followed a first wave of petitions by the same petitioner that were denied on the merits. *General Plastic*, Paper 9 at 2–3.

Although Petitioner has directed this Petition to the same claims and relies on the same art as in its first two petitions, that the Board did not substantively address the merits of the prior Intel petitions, in our view, weighs against discretionary denial here. The district-court trial that led to the denial of its initial petitions is over and did not resolve the challenges presented here. Allowing Petitioner the opportunity to pursue a decision on the merits from the Board at this time—by joining OpenSky's substantially identical petition—best balances the desires to improve patent quality and

patent-system efficiency against the potential for abuse of the review process by repeated attacks on patents. *See General Plastic*, Paper 19 at 16–17.

Patent Owner argues that we should follow *HTC Corp. v. Ancora Techs., Inc.*, IPR2021-00570, Paper 17 at 9–10 (PTAB June 10, 2021), in applying *Uniloc* to a joinder petition. Prelim. Resp. 20; Opp. 5–6. In *HTC*, the petitioner's prior CBM petition was denied without reaching its substantive merits. *HTC*, Paper 17 at 8–9. Significantly, however, in *HTC*, the Board relied on that petitioner's failure to explain a four-year delay after that denial before filing an IPR petition. *Id.* at 9. Thus, the decision in *HTC* turned largely on the petitioner's delay. *Id.* As discussed below, we determine that Intel adequately explains the time elapsed before filing the present Petition. Thus, the reasoning in *HTC* does not weigh in favor of denial here.

In *HTC*, the Board additionally noted that the petitioner benefited from other petitioners' filings during that delay. *Id.* at 9–10. Patent Owner argues that because Petitioner reviewed both Patent Owner's preliminary responses and also the Board's institution decisions from the first petition and OpenSky's IPR, *General Plastic* factor 3 strongly supports discretionary denial. Prelim. Resp. 22; Opp. 6–7. With respect to factor 3, "we are concerned here by the shifts in the prior art asserted and the related arguments in follow-on petitions." *General Plastic*, Paper 19 at 17 (finding that the petitioner had found new prior art as a result of two searches conducted after the Board issued its Decisions Denying Institution); *HTC*, Paper 17 at 10 (finding that the petitioner should have known of prior art cited for the first time in its follow-on petition at the time of filing its first petition).

Although we agree with Patent Owner that the opportunity for "roadmapping" existed due to the time gap in filing the OpenSky petition, we do not agree that roadmapping affects our decision here.[8] The OpenSky IPR presents challenges that are nearly identical to Intel's initial petition, and Intel's current petition follows them in step. To the extent that the timing of OpenSky's petition allowed access to Intel's initial petition and Patent Owner's preliminary response, it did not affect our decision to institute. And Intel's Petition makes no changes from the instituted OpenSky petition. Thus, the roadmapping concerns addressed in *General Plastic* and *HTC* are not present here.

In addition, we view substantive consideration of the merits of a petition as an important factor in maintaining the balance between improving patent quality and the potential for abuse. To determine otherwise would prioritize insulating patent owners from potential abuse without also addressing the public benefit to improving patent quality.

We conclude that factors 1–3 weigh against discretionary denial.

Factor 4: the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition; and
Factor 5: whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent

As noted in *General Plastic*, the Board considers factors 4 and 5 "to assess and weigh whether a petitioner should have or could have raised the

[8] "Roadmapping" refers to the practice of taking advantage of an opponent's prior filings to obtain a "roadmap" of the opponent's case. While excessive roadmapping is undesirable, public disclosures of a party's litigation positions are unavoidable whenever a lawsuit or a petition is filed.

new challenges earlier." *General Plastic*, Paper 19 at 18. Applied to the present facts, however, those factors have limited relevance. The OpenSky IPR, to which Petitioner Intel seeks joinder, raises the same prior art asserted in Intel's initial petition.[9] Thus, there are no "new challenges" at issue here.

Although the Petition raises no new challenges, this proceeding arises substantially after Intel's initial IPR petition. Unlike the delay that the Board found important in *HTC*, however, the timing here is not due to Petitioner's delay. *See HTC*, IPR2021-00570, Paper 17 at 9. Because Intel was time-barred under § 315(b), Intel did not have an opportunity to file an IPR petition after its initial petition was denied. Indeed, that opportunity did not arise for Intel until we instituted review in the OpenSky IPR. Petitioner argues that it was reasonable for it to file its Petition and Motion for Joinder after the Board instituted the OpenSky IPR because Petitioner was otherwise time barred. Mot. 8–9. That justification is consistent with the statute, which expressly provides an exception to the time bar for a request for joinder. 35 U.S.C. § 315(b).

Because the delay between Intel's initial petition and the present one resulted from our earlier refusal to consider the merits of Intel's challenge, along with the pendency of the district-court trial, we do not weigh that delay against Intel. We determine that Intel has adequately explained the time between its initial petition and the present joinder request.

Patent Owner argues that because Intel had the opportunity to present invalidity to a jury, but chose not to present its IPR defenses, it would receive an unfair benefit from participating in this proceeding. Prelim.

[9] As we determined when instituting the OpenSky IPR, the timing for OpenSky's petition was reasonable. IPR2021-01064, Paper 17 at 13.

Resp. 20–21; Opp. 7–8. We are not persuaded that Intel's decision weighs in favor of exercising our discretion to deny institution. We acknowledge that Intel had the opportunity to present its invalidity contentions to the jury at trial and chose not to present the grounds raised before the Board, instead raising a separate invalidity argument (*see* Ex. 1027, 5); however, we will not second-guess Intel's trial strategy. Rather, we focus on the fact that Petitioner's first petition was denied under § 314(a), and the Intel litigation did not resolve issues presented by this proceeding. Accordingly, there is no possibility of duplicative efforts or conflicting decisions, which was the concern when the Board denied Petitioner's earlier petitions. *See* IPR2020-00106, Paper 17; IPR2020-00498, Paper 16.

Patent Owner also argues that Petitioner could have sought to avoid redundancies and obtain institution of review by stipulating not to raise the grounds asserted here at trial. Prelim. Resp. 21; Opp. 7–8. The Board's decision denying institution of Intel's first petition (IPR2020-00106) occurred before the Board decided either *Sotera Wireless, Inc. v. Masimo Corporation*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A) or *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC*, Case IPR2019-01393, Paper 24 (PTAB June 16, 2020) (informative). Similarly, the Board's decision denying institution of Intel's second petition (IPR2020-00498) occurred before the Board decided *Sotera Wireless*, IPR2020-01019, Paper 12, and the record was complete in Intel's second petition before the Board decided *Sand Revolution II*, Case IPR2019-01393, Paper 24. Thus, Patent Owner uses the benefit of hindsight in arguing that Petitioner should have stipulated not to raise these grounds at trial.

While that option was available to Petitioner, the significance of doing so was not clear until the precedential and informative decisions on the issue.

Because Petitioner has adequately explained the time gap between its petitions and is not broadening the challenge or causing delay by seeking to join the OpenSky IPR, we conclude that factors 4 and 5 weigh against discretionary denial.

Factor 6: the finite resources of the Board; and Factor 7: the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review

We are not persuaded that instituting this Petition will significantly affect the resources of the Board or our ability to issue a final determination within the one-year statutory timeline. We instituted the OpenSky IPR because we found the challenges reasonably likely to be successful, and we will continue expending resources to decide the merits of the OpenSky IPR regardless of joinder.

Patent Owner argues that "[l]ike in *Uniloc*, joinder in this circumstance would allow Petitioner [Intel] to continue a proceeding even after settlement with the primary petitioner." Opp. 8 (alterations in original) (quoting *HTC*, IPR2021-00570, Paper 17 at 13); *accord* Prelim. Resp. 27. That statement is true for all joinder authorized by § 315(c). We are not persuaded to weigh it in favor of exercising our discretion to deny joinder here. Noting that OpenSky, who has not been accused of infringement, lacks standing to appeal a decision in this IPR, Patent Owner opposes joining Intel, who is accused of infringement and has standing to appeal, because "allowing joinder would even make what is non-appealable appealable." Prelim. Resp. 25; *accord* Opp. 14. We do not consider Intel's right to appeal

our final decision to be a factor in assessing whether to grant Intel's motion for joinder.

In addition, we are not persuaded that joining Petitioner would add significant issues or evidence burdening the Board. First, Patent Owner argues that joinder would implicate issues of estoppel and identification of real parties in interest ("RPI"). Opp. 13–14. To the extent that Patent Owner wishes to raise estoppel and RPI issues, the burden will be borne by Petitioner and Patent Owner primarily. The Board is experienced in handling such issues in a timely manner, so we are not persuaded that this weighs in favor of exercising our discretion to deny joinder.

Second, Patent Owner contends that the Petitioner has already added evidence to this case. Prelim. Resp. 25; Opp. 13–14. Patent Owner points to the addition of two two-page declarations prepared for this matter by Dr. Jacob and Dr. Hall-Ellis "demonstrat[ing] that the experts were available to prepare and submit testimony prepared for the current matter." Prelim. Resp. 33 n.3 (citing Exs. 1049, 1050). These declarations are presented by Petitioner to show Petitioner's ability to produce both of its declarants for cross-examination. Accordingly, these short declarations allay any concerns we had previously expressed about hearsay in denying institution in IPR2021-01056, and do not meaningfully change the substantive evidence in this case. Thus, we are not convinced that joining Petitioner will significantly alter the evidentiary record here.

In addition, Petitioner argues that joinder would assist the Board in resolving the IPR, while also stipulating that it would participate only "as an understudy." Mot. 10 n.2, 15. We acknowledge that joining Intel may require some minor adjustments to accommodate an additional party, but

Intel's understudy role will not meaningfully increase the burden on the Board. Accordingly, we conclude that factors 6 and 7 weigh against discretionary denial.

Summary

Having considered all the *General Plastic* factors, based on the present record, we determine not to exercise our discretion to deny institution under § 314(a).

3. Consistent exercise of discretion (Vivint)

Patent Owner argues that we should deny institution under 35 U.S.C § 325(d) because *Vivint* "confirms that denial under § 325(d) is required here." Prelim. Resp. 30. We do not agree.

In *Vivint*, the Federal Circuit held that "the Patent Office, when applying § 325(d), cannot deny institution of IPR based on abusive filing practices then grant a nearly identical reexamination request that is even more abusive." *In re Vivint, Inc.*, 14 F.4th at 1354. The Federal Circuit found it important in *Vivint* that, when the Board denied Alarm.com's IPR petition, the Board considered Alarm.com's earlier petitions and reasoned that "allowing similar, serial challenges to the same patent, by the same petitioner, risks harassment of patent owners and frustration of Congress's intent in enacting the [AIA]." *Id.* at 1353 (quoting IPR2016-01091, Paper 11 at 12). Particularly, in *Vivint*, the same petitioner filed three petitions challenging the same patent, of which the Board denied two on the merits and the third for "undesirable, incremental petitioning," "us[ing] prior Board decisions as a roadmap to correct past deficiencies." *Id.* at 1346 (quoting IPR2016-01091, Paper 11 at 12).

The facts here do not invoke *Vivint*. The Intel IPRs were not denied on the merits or for abusive filing practices, but rather were denied to avoid overlap with a parallel district-court litigation. *See* IPR2020-00106, Paper 17 at 4–13; IPR2020-00498, Paper 16 at 4–10. We instituted the OpenSky IPR after reasoning that the petition there presented challenges reasonably likely to be successful and that applying our framework for evaluating requests for discretionary denial did not counsel against institution for that case. Although this Petitioner has before sought review of the '759 patent, this Petitioner seeks to join the existing OpenSky IPR because the Board has not substantively addressed the merits of the challenge. In addition, this Petitioner has not benefitted from prior Board decisions identifying deficiencies. In denying Intel's initial petitions, we did not find that there were potentially abusive filing practices by the same challenger, as was at issue in *Vivint*.

Patent Owner has not identified how instituting review would be inconsistent with any prior decision on this patent. As explained above, because the invalidity issues for the '759 patent presented at trial were different from those considered in the prior application of *Fintiv*, we reach a different conclusion under that doctrine here, based on different facts. Thus, instituting review would not amount to an abusive filing practice under *Vivint*.

C. WHETHER TO GRANT JOINDER

Patent Owner argues that, even if the Petition warrants institution, we should deny Intel's motion for joinder. Opp. 10–15. As Patent Owner notes, "the decision to grant joinder is discretionary." *Id.* at 10–11 (quoting *LG Elecs., Inc. v. ATI Techs. ULC*, IPR2015-01620, Paper 10 at 5 (PTAB

Feb. 2, 2016)). Patent Owner's Opposition to joinder raises many of the same arguments raised in the Preliminary Response and discussed above. *See* Opp. 2–10. We have addressed those arguments above in concluding that the Petition warrants institution.

According to Patent Owner, neither Intel's "rush" in filing its joinder request, nor its reliance on grounds unchanged from its initial IPR petition favors joinder. *Id.* at 11–13. We do not agree. Petitioner's timeliness in filing the Petition and requesting joinder minimized the potential disruption to an existing proceeding if joinder is granted. Although not determinative *per se*, those aspects of Petitioner's approach support granting joinder.

Patent Owner argues also that joinder here would disrupt the schedule and add new issues. *Id.* at 13–14. But Patent Owner does not explain how joining Intel will disrupt the schedule. As for new issues, Patent Owner asserts that joining Intel will "raise anew the question of Intel's relationship with OpenSky." *Id.* at 14. Other than speculation, Patent Owner does not point to anything, in the record or otherwise, indicating that such a relationship exists.

Finally, Patent Owner argues that we may allow joinder of otherwise time-barred parties "only in limited circumstances." Opp. 15 (quoting *Proppant*, IPR2018-00914, Paper 38 at 19). *Proppant*, however, expressed that narrow view of joinder only in the context of considering the impact of a time bar "on the first two questions" considered (same-party and new-issue joinder). *Proppant*, IPR2018-00914, Paper 38 at 3, 16; *accord id.* at 19 (tying limited exercise of joinder discretion to instances "when an otherwise time-barred petitioner requests same party and/or issue joinder"). We do not

consider *Proppant* as limiting our discretion here, where neither same-party joinder nor new issues are involved.

Petitioner has properly filed a petition under 34 U.S.C § 311, and we are not persuaded that "[j]oining Intel 'would obviate the careful statutory balance' and 'effectively circumvent the time limitation in § 315(b),'" because the statute provides for an exception to the time bar for joinder. Opp. 4 (quoting *Proppant*, IPR2018-00914, Paper 38 at 18).

III. CONCLUSION

For the reasons discussed above and in our decision instituting the OpenSky IPR, we conclude that Petitioner has shown a reasonable likelihood of prevailing with respect to at least one claim. We have also evaluated all of the parties' submissions and determine that the record supports institution. We conclude that instituting review in this proceeding is in the interest of efficient administration of the Office and the integrity of the patent system. *See* 35 U.S.C. § 316(b). Accordingly, we institute *inter partes* review of all challenged claims under all grounds set forth in the Petition.

Our determination at this stage of the proceeding is based on the evidentiary record currently before us. This decision to institute trial is not a final decision as to patentability of any claim for which *inter partes* review has been instituted. Our final decision will be based on the full record developed during trial.

Upon considering the parties' arguments and the evidence presented, we are persuaded that it is appropriate under these circumstances to join Petitioner to the OpenSky IPR. Joinder to the OpenSky IPR will result in the just, speedy, and inexpensive resolution of Petitioner's challenge. *See* 37 C.F.R. § 42.1(b). Accordingly, for the reasons discussed above, we grant

Petitioner's Motion for Joinder and join Petitioner as a party to the OpenSky IPR.

IV. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review of the '759 patent is instituted on the claims and grounds set forth in the Petition;

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this decision;

FURTHER ORDERED that Petitioner's Motion for Joinder with IPR2021-01064 is granted, and Petitioner is hereby joined as a petitioner in IPR2021-01064;

FURTHER ORDERED that there are no changes to the grounds on which trial in IPR2021-01064 was instituted, and no other grounds are added in IPR2021-01064;

FURTHER ORDERED that the Scheduling Order entered in IPR2021-01064 (Paper 18), including any schedule changes agreed by the parties in that proceeding pursuant to the Scheduling Order, shall govern the trial schedule in Case IPR2021-01064;

FURTHER ORDERED that Petitioner's role in IPR2021-01064 shall be limited as stated by Petitioner in the Motion for Joinder (Paper 4 at 10 n.2, 15) unless and until OpenSky is terminated from that proceeding;

FURTHER ORDERED that the case caption in IPR2021-01064 shall be changed to reflect joinder of Intel Corporation as petitioner in accordance with the attached example;

FURTHER ORDERED that a copy of this Decision be entered into the record of IPR2021-01064; and

FURTHER ORDERED that this proceeding is terminated under 37 C.F.R. § 42.72 and 37 C.F.R. § 42.122, and all further filings shall be made in IPR2021-01064.

IPR2022-00366
Patent 7,725,759 B2

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Paper No. 14
Entered: June 8, 2022

[Sample Case Caption]

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OPENSKY INDUSTRIES, LLC,
INTEL CORPORATION,
Petitioners,

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064*
Patent 7,725,759 B2

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* Intel Corporation, which filed a petition in IPR2022-00366, has been joined as a party to this proceeding.

Director_PTABDecision_Review@uspto.gov
571-272-7822

Paper No. 102
Date: October 4, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE OFFICE OF THE UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

OPENSKY INDUSTRIES, LLC,
INTEL CORPORATION,
Petitioners,

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064[1]
Patent 7,725,759 B2

Before KATHERINE K. VIDAL, *Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office*.

DECISION
Determining Abuse of Process, Issuing Sanctions, and Remanding to Patent Trial and Appeal Board Panel for Further Proceedings

[1] Intel Corporation ("Intel"), which filed a petition in IPR2022-00366, has been joined as a party to this proceeding.

I. INTRODUCTION

On December 23, 2021, the Patent Trial and Appeal Board ("PTAB" or "Board") issued a Decision granting institution of an *inter partes* review ("IPR") of claims 1, 14, 17, 18, 21, 22, and 24 ("challenged claims") of U.S. Patent No. 7,725,759 B2 ("the '759 patent"), based on a Petition filed by OpenSky Industries, LLC ("OpenSky"). Paper 17 ("Institution Decision"). VLSI Technology LLC ("VLSI" or "Patent Owner") subsequently filed a rehearing request and a request for Precedential Opinion Panel ("POP") review. *See* Paper 20 ("Req. Reh'g"); Ex. 3002. I initiated Director review of the Board's Institution Decision on June 7, 2022. Paper 41. Concurrent with my Order, the POP dismissed the rehearing and POP review requests. Paper 42. On June 8, 2022, the Board joined Intel as a Petitioner in this case. Paper 43.

I explained that Director review would address questions of first impression as to what actions the Director, and by delegation the Board, should consider when addressing allegations of abuse of process or conduct that otherwise thwarts the goals of the United States Patent and Trademark Office ("USPTO" or "Office") and/or the America Invents Act ("AIA"). Paper 47, 7. Due to the importance of the issues to the Office in fulfilling its mission, I ordered the parties to respond to interrogatories and to exchange information ("Mandated Discovery") to assist me in evaluating these issues of first impression. *Id.* at 8–11; *see also* Paper 51.

For the reasons below, I determine that OpenSky has engaged in discovery misconduct by failing to comply with my Order for interrogatories and Mandated Discovery. *See* Paper 47, 8–11. Failure to comply with an order is sanctionable. 37 C.F.R. § 42.12(a)(1). Accordingly, when

analyzing whether OpenSky's conduct amounted to an abuse of process, I apply a negative inference and hold facts to have been established adverse to OpenSky. *See* 37 C.F.R. § 42.12(b)(1) (providing that sanctions may include "[a]n order holding facts to have been established in the proceeding"); Paper 47, 10 ("Any attempt to withhold evidence based on a narrow interpretation of the requests will be reviewed in conjunction with any other subject conduct and may, alone or in combination with other conduct, be sanctionable."); Paper 52, 4 ("As highlighted in the Scheduling Order, failure to comply with my Order may be sanctionable. . . . For example, and without limitation, sanctions may include '[a]n order holding facts to have been established in the proceeding.'").

Based on the evidence of record and the facts held to have been established, I determine that OpenSky, through its counsel, abused the IPR process by filing this IPR in an attempt to extract payment from VLSI and joined Petitioner Intel, and expressed a willingness to abuse the process in order to extract the payment. OpenSky's behavior in this proceeding is entirely distinguishable from conventional settlement negotiations that take place in an adversarial proceeding. I also find that OpenSky engaged in abuse of process and unethical conduct by offering to undermine and/or not vigorously pursue this matter in exchange for a monetary payment. *See Woods Servs., Inc. v. Disability Advocs., Inc.*, 342 F. Supp. 3d 592, 606 (E.D. Pa. 2018) ("The essence of an abuse of process claim is that proceedings are used for a purpose not intended by the law."). Each aspect of OpenSky's conduct—discovery misconduct, violation of an express order, abuse of the IPR process, and unethical conduct—taken alone, constitutes sanctionable conduct. 37 C.F.R. § 42.12(a)(6). Taken together,

the behavior warrants sanctions to the fullest extent of my power. Not only are such sanctions proportional to the conduct here, but they are necessary to deter such conduct by OpenSky or others in the future. *See* 37 C.F.R. § 42.11(d)(4).

Given OpenSky's conduct, from this day forward OpenSky and their counsel are precluded from actively participating in the underlying proceeding. The conduct of the individual attorneys in this case might also rise to the level of an ethical violation under the rules of their respective bars. OpenSky is precluded from filing further papers into the record or presenting further argument or evidence in the underlying proceeding or on Director review unless expressly instructed to do so by me or the Board. *See* 37 C.F.R. §§ 42.12(b)(2–4) (providing that sanctions include "[a]n order expunging or precluding a party from filing a paper"; "[a]n order precluding a party from presenting or contesting a particular issue"; and "[a]n order precluding a party from requesting, obtaining, or opposing discovery").

Moreover, I order OpenSky to show cause as to why it should not be ordered to pay compensatory damages to VLSI, including attorney fees, to compensate VLSI for its time and effort in this proceeding. I further order OpenSky to address the appropriate time period for which any fees should be assessed. *See* 37 C.F.R. § 42.12(b)(6) (providing that sanctions include "[a]n order providing for compensatory expenses, including attorney fees"). As set forth below, I order briefing from OpenSky and VLSI on this issue.

Lastly, as to the underlying proceeding, for the reasons articulated below, I am remanding for the Board to determine, within two weeks of the date of this Order, whether OpenSky's Petition, based only on the record before the Board prior to institution, presents a compelling, meritorious

challenge. I recognize that the record in this proceeding has progressed through oral hearing. Nevertheless, as discussed in more detail below, the Board is to confine its compelling-merits analysis to the record that existed prior to institution, consistent with the June 21, 2022, Director's Memorandum ("Memorandum") and my additional direction below.[2] If the Board finds that OpenSky's Petition presented compelling merits, the underlying proceeding to determine whether the '759 patent should be canceled will, in the interest of the public, continue. If the Board finds the Petition does not rise to this standard, the Board will dismiss the IPR. As explained in more detail below, requiring the Board to assess whether the Petition presents a compelling-merits case based on the record before the Board prior to institution balances the interests of patent owners, including practicing entities and small to medium-sized enterprises, in reliable patent rights, with the public interest in canceling invalid patents, clearing the path for future innovation, and removing the tax on society caused by the litigation and licensing of invalid patents.

II. BACKGROUND

The dispute over the challenged patent has a long and complex history, starting with VLSI's complaint against Intel for infringing the '759 patent, filed in the Waco Division of the United States District Court for the Western District of Texas on April 22, 2019.

[2] Available at www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

A. Intel's Prior Petitions and Litigation

After being sued by VLSI, Intel filed two petitions for IPR, challenging claims of the '759 patent. IPR2020-00106, Paper 3; IPR2020-00498, Paper 4. Considering the factors set forth in the Board's precedential decision in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) ("the *Fintiv* factors"), the Board exercised discretion to deny institution of both proceedings. IPR2020-00106, Paper 17, 13; IPR2020-00498, Paper 16, 10. In particular, the Board highlighted "the advanced stage of the Western District of Texas litigation, a currently scheduled trial date approximately seven months before the would-be deadline for a final written decision, and the overlap between the issues." IPR2020-00106, Paper 17, 13; *see* IPR2020-00498, Paper 16, 6, 10. The Board did not address the merits of the Petition, other than determining "that the merits of the Petition[s] do not outweigh the other *Fintiv* factors." IPR2020-00106, Paper 17, 13. Notably, the Board issued these decisions prior to the issuance of the Memorandum, which clarifies that "the PTAB considers the merits of a petitioner's challenge when determining whether to institute a post-grant proceeding in view of parallel district court litigation" and that "compelling, meritorious challenges will be allowed to proceed at the PTAB even where district court litigation is proceeding in parallel." Memorandum at 4–5.

Intel requested POP review of the Board's decisions, which was denied. IPR2020-00106, Papers 19 and 20; IPR2020-00498, Papers 19 and 20. The trial in the Western District of Texas began on February 22, 2021, months after the date that was presented to the Board for the discretionary denial analysis. *See* Ex. 2025; *cf.* Memorandum at 8 ("A court's scheduled

trial date [] is not by itself a good indicator of whether the district court trial will occur before the statutory deadline for a final written decision."). The trial resulted in a jury verdict finding that Intel neither literally nor willfully infringed the '759 patent, but did infringe claims 14, 17, 18, and 24 under the doctrine of equivalents. Ex. 1027, 2–4. The jury also found that Intel had not proven by clear and convincing evidence that claims 14, 17, 18, and 24 were invalid as anticipated. *Id.* at 5. The invalidity basis presented to the jury during the trial did not overlap with the grounds for unpatentability in Intel's Petitions. Institution Decision 8. The jury awarded VLSI $675 million in damages for infringing the '759 patent.[3] *Id.* at 6. Intel appealed to the Federal Circuit, and that appeal is currently pending as *VLSI Technology LLC v. Intel Corporation*, No. 22-1906 (Fed. Cir. June 15, 2022). The appeal will not resolve the patentability issues pending before the Board.

B. OpenSky's Petition

On June 7, 2021, OpenSky filed the Petition for IPR in this proceeding, challenging claims 1, 14, 17, 18, 21, 22, and 24 of the '759 patent. Paper 2 ("Pet."). OpenSky also filed a Petition for IPR, challenging claims 1–3, 5, 6, 9–11, and 13 of U.S. Patent No. 7,523,373 B2 ("the '373 patent"). IPR2021-01056, Paper 2. OpenSky copied extensively from Intel's two earlier petitions. Ex. 2024 (redline comparison of portions of the Petition in this IPR with portions of Intel's petitions in IPR2020-

[3] Concurrently, the jury found that Intel had also infringed U.S. Patent No. 7,523,373 B2 ("the '373 patent"), owned by VLSI, and awarded VLSI $1.5 billion in damages. Ex. 1027, 6. The '373 patent is the subject of IPR2021-01229.

00106 and IPR2020-00498). OpenSky further refiled Intel's supporting declarations of Dr. Bruce Jacob, without his knowledge. *See* Exs. 1002, 2097, 1046.[4]

In its Petition, OpenSky argued that the Board should not exercise discretion to deny institution under 35 U.S.C. §§ 314(a) or 325(d). Pet. 7–10. In addressing the *Fintiv* factors, OpenSky argued:

> the Board needs to institute review to maintain the integrity of the patent system, because a jury found that this patent is worth at least $675 million ($675,000,000), yet no judge or jury (or PTAB proceeding) has ever double-checked the validity of the '759 patent. The *Fintiv* analysis is designed to determine whether the integrity of the system would be furthered by instituting review. *Apple v. Fintiv*, IPR2020-00019, Paper 11, p. 6 ("the Board takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review."). The integrity of the entire patent system is threatened whenever a patent owner constructs a set of proceedings in which no one ever checks the validity of a patent found to be worth over six hundred million dollars. The denial of invalidity review cannot be proper; OpenSky urges the Board to find that this factor weighs strongly in favor of institution.

Id. at 9–10.

VLSI filed a Patent Owner Preliminary Response on September 24, 2021, explaining that this was the third IPR Petition filed against the '759 patent. Paper 9, 1 (noting discretionary denial of Intel's petitions in IPR2020-00106 and IPR2020-00498). VLSI argued that this Petition should

[4] OpenSky also filed identical copies of declarations of Intel's other expert, Dr. Hall-Ellis, without change. Paper 17, 5. Dr. Hall-Ellis is a librarian who proffered testimony regarding the prior art status of certain references relied on in Intel's previous petitions. *See* Ex. 1040.

be denied, alleging that "[s]hortly after the widely-reported Verdict" finding that Intel infringed the '759 and '373 patents, "OpenSky formed in Nevada on April 23, 2021. OpenSky's only apparent business activity is the filing of two IPR petitions against VLSI." *Id.* at 5 (citation omitted). VLSI also noted that "OpenSky fashioned this Petition by copying and then stitching together portions of the rejected Intel Petitions. Rather than provide its own expert testimony, OpenSky just refiled Intel's declarations without even changing the cover pages."[5] *Id.* at 1–2, 6. Moreover, VLSI noted that "[j]ust one week after OpenSky filed its petitions, yet another new entity was created, to file yet another petition against the '373 patent using a similar approach." *Id.* at 1–2 (identifying IPR2021-01229, filed by Patent Quality Assurance, LLC).

In this proceeding, the Board reviewed the evidence and arguments in the Petition, Patent Owner Preliminary Response, Preliminary Reply, and Preliminary Sur-reply, and instituted the requested IPR on December 23, 2021. Institution Decision 30. Specifically, the Board found that the *Fintiv* factors did not weigh in favor of discretionary denial, in large part because the district court jury trial did not resolve the unpatentability issues presented in this proceeding. *Id.* at 8–9. Because the Board did not reach the merits of the prior Intel petitions, the Board disagreed with VLSI's arguments that institution should be denied because the Petition presents the

[5] Such practice has become known as "copycat" petition practice and, to date, has not been held to be improper any more than copying claims to invoke interference proceedings, which have likewise not been found to be improper.

same challenges as the prior Intel petitions.[6] *Id.* at 10, 12 (relying on factors set forth in *General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (Sept. 6, 2017) (precedential) ("the *General Plastic*" factors)). *See Code200, UAB v. Bright Data Ltd.*, IPR2022-00861, Paper 18, 5 (PTAB Aug. 23, 2022) (precedential) ("Where the first-filed petition under factor 1 was discretionarily denied or otherwise was not evaluated on the merits, factors 1–3 only weigh in favor of discretionary denial when there are 'road-mapping' concerns under factor 3 or other concerns under factor 2. . . . '[R]oad-mapping' concerns are minimized when, as in this case, a petitioner files a later petition that raises unpatentability challenges substantially overlapping with those in the previously-filed petition and the later petition is not refined based on lessons learned from later developments.").

The Board then, for the first time, discussed the merits of the Petition. Institution Decision 15–29. The Board instituted the underlying proceeding, concluding that the "Petitioner has shown a reasonable likelihood it will prevail with respect to unpatentability of claim 1 over Shaffer and Lint—Petitioner's showing justifies institution." *Id.* at 21. The Board likewise concluded that because the "Petitioner has shown a reasonable likelihood it will prevail with respect to unpatentability of claim 1 over Chen and Terrell—Petitioner's showing justifies institution." *Id.* at 29.

On January 6, 2022, VLSI sought to challenge the institution decision, filing requests for rehearing and for POP review. In the rehearing request,

[6] In IPR2021-01056, however, the Board denied institution of an IPR due to the unavailability of another expert declarant on which OpenSky relied in its contentions in that case. IPR2021-01056, Paper 18, 10.

VLSI argued that "[t]he Board should not permit entities formed after the verdict and facing no infringement threat to treat these proceedings as leverage to extract ransom payments in exchange for withdrawing abusive attacks." Req. Reh'g 1, 3–4, 6–8. VLSI argued that such a proceeding advances no valid public interest and "fail[s] to weigh the overarching interests of fairness to the parties and the integrity of the patent system." *Id.* at 1, 9–10. VLSI also criticized the Board's reliance on two expert declarations, which VLSI contended constitute inadmissible hearsay. *Id.* at 11–15.

C. Intel's Motion for Joinder

Within a month of the Board instituting IPR in this proceeding, Intel timely filed its own Petition for IPR with a Motion for Joinder to this proceeding. IPR2022-00366, Papers 3 and 4. The Board joined Intel to this proceeding on June 8, 2022, determining that Intel's Petition warranted institution and declining to discretionarily deny institution under 35 U.S.C. §§ 314(a) and 325(d). Paper 43, 19–20. In considering discretionary denial, the Board determined that:

> [a]lthough Petitioner has directed this Petition to the same claims and relies on the same art as in its first two petitions, that the Board did not substantively address the merits of the prior Intel petitions, in our view, weighs against discretionary denial here. The district-court trial that led to the denial of its initial petitions is over and did not resolve the challenges presented here. Allowing Petitioner the opportunity to pursue a decision on the merits from the Board at this time—by joining OpenSky's substantially identical petition—best balances the desires to improve patent quality and patent-system efficiency against the potential for abuse of the review process by repeated attacks on patents.

Id. at 9–10 (citing *General Plastic*, Paper 19 at 16–17). The Board correctly identified that the statute expressly provides an exception to the 1-year time bar (set forth in 35 U.S.C. § 315(b)) for a request for joinder. *Id.* at 12 (citing 35 U.S.C. § 315(b)) ("The time limitation set forth . . . shall not apply to a request for joinder under subsection (c)"). VLSI requested POP review of the Board's decision to join Intel to the proceeding, and that request was denied. Paper 53. On August 30, 2022, the Board authorized VLSI to file a Motion to Terminate Intel from the proceeding, setting forth VLSI's arguments on res judicata. Paper 86, 2. The Board authorized Intel to file an opposition to the motion. *Id.* VLSI filed the Motion to Terminate on September 27, 2022. Paper 99. Intel's opposition is pending.

D. Director Review

As noted above, I ordered a *sua sponte* Director review of the Board's institution decision in this proceeding on June 7, 2022, one day before the Board joined Intel as a Petitioner in this case. Paper 41. Concurrent with my Order, the POP dismissed the rehearing and POP review requests. Paper 42. Because I did not yet have all the facts before me, I did not stay the underlying proceeding.

On July 7, 2022, I issued a Scheduling Order for the Director review. Paper 47. The Scheduling Order defined the scope of my review, as I determined that "this proceeding presents issues of first impression" and "involves issues of particular importance to the Office, the United States innovation economy, and the patent community." *Id.* at 7–8. In particular, I identified the following issues as relevant:

> 1. What actions the Director, and by delegation the Board, should take when faced with evidence of an abuse of process or

> conduct that otherwise thwarts, as opposed to advances, the goals of the Office and/or the AIA; and
>
> 2. How the Director, and by delegation the Board, should assess conduct to determine if it constitutes an abuse of process or if it thwarts, as opposed to advances, the goals of the Office and/or the AIA, and what conduct should be considered as such.

Id. I directed the parties to address these questions and to support their answers "in their briefing, including through new arguments and non-declaratory evidence." *Id.* at 8. I also invited amici curiae briefing. *Id.*

To enable me to address those questions in the context of this Review, my Scheduling Order also instructed the parties to answer interrogatories and exchange certain categories of information as Mandated Discovery. *Id.* at 8–11; 35 U.S.C. § 316(a)(5) ("The Director shall prescribe regulations setting forth standards and procedures for discovery of relevant evidence . . . otherwise necessary in the interest of justice"). My interrogatories ordered the parties to address specific questions related to the "issues of particular importance" in this Review. *Id.* at 8–9.

I ordered the Mandated Discovery "to allow all parties to answer the questions" I set forth, and to give each party an opportunity to produce evidence supporting its position. *Id.* at 9–10. The Mandated Discovery included categories of documents relating to the formation and business of OpenSky; documents and communications "relating to the filing, settlement, or potential termination of this proceeding, or experts in this proceeding, not already of record in the proceeding"; and "communications with any named party relating to the filing, settlement, or potential termination of this proceeding." *Id.* My Scheduling Order warned "that sanctions may be considered for any misrepresentation, exaggeration, or over-statement as to

the facts or law made in the parties' briefing" (*id.* at 9), and that "[a]ny attempt to withhold evidence based on a narrow interpretation of the [discovery] requests will be reviewed in conjunction with any other subject conduct and may, alone or in combination with other conduct, be sanctionable." *Id.* at 10.

On July 15, 2022, OpenSky requested an extension of the deadlines in the Scheduling Order. Ex. 3012. On July 21, 2022, I extended the deadlines for the parties to exchange information and accordingly extended the briefing deadlines: as extended, the parties' initial briefs and briefs of amici curiae were due on August 18, 2022,[7] and the parties' responsive briefs were due on September 1, 2022. Paper 51. In the Order granting a two-week extension, I reminded the parties that "as set forth in the Scheduling Order, a party may lodge legitimate, lawful grounds for withholding documents, and shall maintain a privilege log of documents withheld." *Id.*

On July 29, 2022, I issued a further Order addressing the scope of Mandated Discovery. Paper 52. I reminded the parties that "they are required to comply with the full scope of the Scheduling Order, including its

[7] Fourteen amici curiae briefs have been entered into the record of this proceeding, from the following: American Intellectual Property Law Association (Paper 55) ("AIPLA"); Association of Amicus Counsel (Paper 56); Naples Roundtable (Paper 57) ("Naples"); Ramzi Khalil Maalouf (Paper 64) ("Maalouf"); Engine Advocacy et al. (Paper 74) ("Engine"); High Tech Inventors Alliance (Paper 75) ("HTIA"); Robert Armitage (Paper 76); Computer and Communications Industry Association (Paper 77) ("CCIA"); BSA | The Software Alliance (Paper 78) ("BSA"); The Alliance of U.S. Startups et al. (Paper 79) ("USIJ"); Hon. Paul R. Michel (Paper 80); Unified Patents et al. (Paper 81) ("Unified"); Public Interest Patent Law Institute (Paper 82) ("PIPLI"); and Centripetal Networks, Inc. (Paper 83) ("Centripetal").

Mandated Discovery provisions now due to be exchanged by August 4, 2022," and "failure to comply with my Order may be sanctionable." *Id.* at 4. I explained that potential sanctions may include, for example, "[a]n order holding facts to have been established in the proceeding." *Id.* (quoting 37 C.F.R. § 42.12). The parties were further "reminded that legitimate, lawful grounds for withholding documents may be lodged and, if so, the party shall maintain a privilege log of documents withheld. No responsive document may be withheld without being included in such a privilege log." *Id.* (internal citations omitted). Thus, I provided specific notice of potential sanctions to the parties, in addition to the general notice provided by the Office's regulations.

As discussed in detail below, OpenSky did not comply with the Mandated Discovery as ordered. *See* Paper 84, 19–21.[8] It produced a minimal number of documents to the other parties and wholly inadequate answers to my interrogatories, and did not produce a privilege log. *See id.* In contrast, both VLSI and Intel produced responsive documents and detailed privilege logs, as ordered.

III. FAILURE TO COMPLY

As explained above, I initiated Director review to answer questions of first impression related to the IPR process. Paper 47, 7. Before proceeding to those questions, however, I must address OpenSky's deficient responses to the discovery required in my Scheduling Order.

[8] Paper 84 is the nonconfidential version of VLSI's Initial Brief in response to the Director review order; Paper 70 is the confidential version.

A. OpenSky's Objections to Mandated Discovery

The deadline for exchange of documents and communications contemplated by my Mandated Discovery order was August 4, 2022. Paper 51, 4. The deadline for the parties to submit briefs addressing the Director's interrogatories with supporting documentary evidence was August 18, 2022. *Id.* at 4; Paper 47, 8–10. The parties were repeatedly warned that no documents may be withheld without being included in a privilege log, and that any attempt to withhold evidence may be sanctionable. Paper 47, 10; Paper 52, 4.

On August 4, 2022, OpenSky filed a Notice of Objections to my Mandated Discovery. Paper 54. I find their objections have no merit. For example, OpenSky contends that the Order is inconsistent with 35 U.S.C. § 6(c) as modified by *United States v. Arthrex, Inc.*, 141 S. Ct. 1970, 1987 (2021). Paper 54, 2. But OpenSky does not explain this assertion. OpenSky further contends that the Order exceeds the discovery permitted under 35 U.S.C. § 316(a)(5) and 37 C.F.R. § 42.51. *Id.* at 2. OpenSky's argument on this point is not persuasive. 35 U.S.C. § 316(a)(5) provides that discovery may be sought where "necessary in the interest of justice," which is at the heart of the inquiry as to whether OpenSky has abused the IPR process. And 37 C.F.R. § 42.51 is not relevant to Director-ordered discovery, because that rule governs only discovery between the parties. Furthermore, in general, it is within my purview to "determine a proper course of conduct in a proceeding for any situation not specifically covered by [the other regulations]" and to "enter non-final orders," such as the Scheduling Order, "to administer the proceeding." 37 C.F.R. § 42.5(a).

OpenSky also argues that the Scheduling Order is inconsistent with Board procedures governing non-routine discovery. Paper 54, 2–3. For example, OpenSky contends that there is no evidence "tending to show beyond speculation that in fact something useful will be uncovered." *Id.* at 3 (quoting *Garmin Int'l, Inc. v. Cuozzo Speed Techs. LLC*, IPR2012-00001 (PTAB Mar. 5, 2013) (Paper 26) (precedential)). Again, while Board procedures governing party conduct do not formally apply to the Director's inquiry into process abuses, my Scheduling Order makes plain the basis for the ordered discovery here. The Scheduling Order explains that the discovery would permit the parties to answer the questions I identified as germane to my inquiry into the circumstances surrounding OpenSky's formation and conduct—information about which is uniquely in the parties' (and specifically OpenSky's) possession. Paper 47, 7–10; 37 C.F.R. § 42.11(a) ("Parties and individuals involved in the proceeding have a duty of candor and good faith to the Office during the course of a proceeding.").

OpenSky's other arguments similarly lack merit. OpenSky contends that, in its judgment, certain categories of Mandated Discovery are not in dispute. *See, e.g.*, Paper 54, 3–4. That is not OpenSky's judgment to make. It is not appropriate for OpenSky to simply assert that something is undisputed and, on that basis, refuse to comply with my Order by failing to produce or log such materials. OpenSky's argument that the Order is not "easily understandable" is also not persuasive. *Id.* at 4. No other party indicated that they had any issue understanding the Order, nor did they have issues complying. OpenSky's argument that the discovery is overly burdensome (Paper 54, 4–5) fares no better. OpenSky could have sought to file a motion to revise the standing protective order (37 C.F.R.

§ 42.54(a)(1)), or at least have requested a second extension if it could demonstrate an actual burden, but instead chose noncompliance.

OpenSky submits that the Order violates its and its members' constitutional rights. Paper 54, 5–6. OpenSky cites no court case to support this proposition, and instead gestures to the First Amendment right to freedom of association and the Fourteenth Amendment's right to due process of law. OpenSky does not explain how complying with a discovery order results in a constitutional violation. Further, by choosing to file this IPR, OpenSky availed itself of my and the Board's jurisdiction and opened itself to questions regarding its members and purpose, among others.

OpenSky ends its objections with a series of similarly unpersuasive arguments. OpenSky opines that the Order is inconsistent with the purposes of the AIA. Paper 54, 6. OpenSky does not explain why it believes that to be the case, and the argument lacks merit for reasons explained below. Moreover, even if true, the argument does not provide sufficient basis for OpenSky to disregard my Order. OpenSky's argument that the Order is inconsistent with the guidelines for Director review rests on its contention that "the Order does not identify any issue of first impression." *Id.* at 7. OpenSky provides no citation for the claim that Director review is limited to issues of first impression. In any event, my Order indicated that the issues here are ones of first impression. *Id.* Finally, OpenSky contends that the Order would require it to waive privilege objections (*id.* at 7–8), but avoiding such waiver is the point of a privilege log, which OpenSky did not submit.

B. OpenSky's Failure to Comply with Mandatory Discovery

OpenSky failed to comply with the discovery requirements set forth in the Scheduling Order by: (1) refusing to provide confidential documents to the other parties in the proceeding, or instead, a privilege log listing privileged documents withheld for in camera review; and (2) failing to respond in good faith to the interrogatories, including with supporting evidence. Paper 47, 8–10. Each of these failures to comply is independently sanctionable. *Id.* at 10.

1. OpenSky refused to produce confidential documents under seal, or a privilege log of what was not produced

As explained above, the deadline for the exchange of documents and communications was August 4, 2022. On August 11, 2022, VLSI requested in camera review, as to the production made by OpenSky. Paper 62. VLSI asserts that it:

> cannot identify with specificity documents for in camera review in OpenSky's responsive documents, because OpenSky has (i) failed to produce internal documents; (ii) failed to produce any documents it deems either confidential or highly-confidential under the Director's modified direct protective order, Ex. 3011; and (iii) failed to provide any privilege log in this matter, each in violation of the Director's Orders (see Papers 47, 51, and 52).

Id. at 1. VLSI asserts that "OpenSky produced approximately 170 documents, all 'nonconfidential,' largely consisting of public filings and correspondence already available to all parties." *Id.* at 3. VLSI contends that the produced non-public documents include only emails from OpenSky's lead counsel, Andrew Oliver, and "a single internal communication." *Id.* at 3–4. Notably, VLSI asserts that "OpenSky has not logged a single document." *Id.* at 4. VLSI argues that, due to OpenSky's

failure to produce documents, I should—again—order OpenSky to produce "***all*** withheld responsive documents in the seven categories of mandated discovery." *Id.* at 8 (emphasis in original).

On August 18, 2022, OpenSky filed its initial brief in response to the Director review order. Paper 71.[9] In the brief, OpenSky does not dispute VLSI's assertions that OpenSky failed to produce internal or confidential documents and failed to produce a privilege log of withheld evidence. *See id.* In its responsive brief, filed September 1, 2022, OpenSky asserts that it produced "over 240MB of responsive documents to VLSI and Intel, of which more than half were nonconfidential and of which the others bore either confidential or highly confidential designations." Paper 91, 19 (*see* Exs. 1066, 1067)[10]. However, quantity does not substitute for quality. OpenSky's new exhibits merely show the size of the files shared with opposing counsel, not the contents of files. *See* Exs. 1066, 1067. Notably, OpenSky did not file any of the documents as exhibits in this proceeding, despite the existence of the Modified Default Protective Order. And directly contradicting the Scheduling Order's requirements, OpenSky confirms that it "will not be producing, filing, or lodging any privileged documents in this proceeding; accordingly, OpenSky will not be producing a privilege log for purposes of identifying documents for an *in camera* review that will not take place." Paper 91, 20. OpenSky's refusal to comply with the requirements set forth in the Scheduling Order is alone sanctionable conduct. *See* Paper 47, 4.

[9] Paper 71 is the nonconfidential version of OpenSky's Initial Brief in response to the Director review order; Paper 67 is the confidential version.

[10] OpenSky filed a corrected version of its responsive brief as Paper 101.

2. OpenSky's responses to the interrogatories are inadequate and lack evidentiary support

In addition to its express refusal to comply with the Mandated Discovery, OpenSky failed to respond adequately to the interrogatories set forth in the Scheduling Order, which required the parties to respond with citation to supporting documentary evidence. Paper 47, 8. In its initial brief, OpenSky asserts that VLSI "has promoted a false narrative in which it portrayed itself as a victim of 'harassment' or a 'shakedown.'" Paper 71, 2. OpenSky presents its own version of the facts and refers to alleged communications between OpenSky and VLSI that purportedly show VLSI to be the bad actor. *See id.* at 2–6. However, throughout this portion of its brief, OpenSky fails to cite a single source of evidence to support its allegations of harassment, apart from a single citation to Exhibit 2055 (of record as of April 11, 2022), which is addressed below. *Id.* at 5.

In addition to its largely unsupported narrative, OpenSky's initial brief purports to address the interrogatories listed in the Scheduling Order but fails to do so adequately. *Id.* at 8–18. OpenSky refers to three sources of evidence previously of record to support its answers to the interrogatories, Exhibits 1048, 2055, and 2066. *See id.* As a result, many of the interrogatories remain unanswered or unsubstantiated by OpenSky.

For example, interrogatory (a) asked about OpenSky's formation and business. Paper 47, 8. To answer these questions, the Scheduling Order required OpenSky to provide the other parties with communications related to the formation of OpenSky and documents related to OpenSky's business plan. *Id.* at 9. OpenSky responds by stating that "OpenSky has not limited its business purpose" because "[a] Nevada Limited Liability Company is not

required to state a 'business' on formation." Paper 71, 9. This answer is non-responsive. In addition to its effective refusal to answer the interrogatory, OpenSky did not provide any required evidence that would allow me, VLSI, or Intel to consider OpenSky's position. *See* Paper 66, 10–11; Paper 84, 2–3.

Interrogatory (b) asked, "[o]ther than communications already in the record, what communications have taken place between OpenSky and each of the other parties?" Paper 47, 8. To answer this question, the Scheduling Order required OpenSky to provide the other parties with "all documents and communications relating to the filing, settlement, or potential termination of this proceeding, or experts in this proceeding, not already of record." *Id.* at 9. OpenSky admits that "the parties have had numerous communications," but asserts that "[t]he communications related to substance and procedure in this proceeding would be unduly burdensome to log and are not relevant to the topics of the Director's review." Paper 71, 10. OpenSky does not identify evidentiary support for these assertions and does not raise a good faith claim to withhold this evidence. *See id.* For example, OpenSky does not argue that the communications are privileged, or exchange a privilege log of the communications, as required by the Scheduling Order. *Id.* Rather, OpenSky impermissibly determines on its own that no evidence is relevant to topics of the Director review and withholds evidence on that basis. *Id.* Accordingly, OpenSky's answer is evasive and non-responsive to interrogatory (b).

Interrogatory (c) asked, "[c]ould OpenSky be subject to claims of infringement of the '759 patent," and "[d]oes OpenSky have a policy reason for filing the Petition that benefits the public at large beside any reasons

articulated in the already-filed papers?" Paper 47, 8. OpenSky asserts that this question is "irrelevant," and states that "OpenSky has not attempted to perform an infringement analysis." Paper 71, 11. OpenSky also asserts that "it is possible" it could infringe the '759 patent *if* it has a computer product containing an Intel product. *See id.* OpenSky lists a number of potential policy reasons for filing the Petition, none of which are supported by evidence showing OpenSky's intent at the time of filing. *See id.* Accordingly, OpenSky's answer is non-responsive to interrogatory (c).

Interrogatory (d) asked, "[d]oes the evidence in this proceeding demonstrate an abuse of process . . . [and] if so, which evidence and how should that evidence be weighted and addressed?" Paper 47, 8. To answer this question, the Scheduling Order required OpenSky to provide the other parties with "all communications with any named party relating to the filing, settlement, or potential termination of this proceeding." *Id.* at 10. OpenSky asserts that "[t]he evidence demonstrates abuse of process . . . only by VLSI. No evidence demonstrates any such abuse by Intel or OpenSky." Paper 71, 12. OpenSky refers to a single piece of evidence already of record, Exhibit 2055, and offers no other supporting evidence. *See id.* at 13. As to other communications between the parties, OpenSky asserts that "parties' discussions of potential settlement positions are not admissible evidence in this proceeding," according to Rule 408 of the Federal Rules of Evidence. *Id.* at 12–13. OpenSky's argument is misplaced.

First, "Rule 408 does not warrant protecting settlement negotiations from discovery. On its face, the rule applies to the admissibility of evidence at trial, not to whether evidence is discoverable." *Phoenix Sols. Inc. v. Wells Fargo Bank, N.A.*, 254 F.R.D. 568, 584 (N.D. Cal. 2008). Second, Rule 408

does not bar the admission of settlement discussions for all purposes. Rather, it only excludes certain settlement statements offered for the purpose of "prov[ing] or disprov[ing] the validity or amount of a disputed claim or to impeach by a prior inconsistent statement or a contradiction." Fed. R. 408(a). Settlement discussions may be admissible for other purposes. *See, e.g.*, *Zurich Am. Ins. Co. v. Watts Indus., Inc.*, 417 F.3d 682, 689 (7th Cir. 2005) ("The district court has broad discretion to admit [408 settlement] evidence for a purpose other than proving liability."); *BTG Int'l Inc. v. Bioactive Labs.*, No. CV 15-04885, 2016 WL 3519712, at *8 (E.D. Pa. June 28, 2016) ("Rule 408 does not bar the introduction of settlement discussions if offered for 'another purpose,' such as to show a party's knowledge or intent."). Therefore, Rule 408 does not control, and OpenSky failed to respond to interrogatory (d).

Interrogatory (e) asked, "[w]hat is the basis for concluding that there are no other real parties in interest, beyond OpenSky," and "[a]re there additional people or entities that should be considered as potential real parties in interest?" Paper 47, 8–9. To answer this question, the Scheduling Order required OpenSky to provide the other parties with "all documents relating to OpenSky's business plan including its funding, its potential revenue, and the future allocation of any of its profits." *Id.* at 9. OpenSky asserts that "OpenSky acted entirely on its own and with its own funding in bringing its Petition" and that it "did not have the support of any other entity." Paper 71, 17. Again, OpenSky provides no evidence to support its allegation. *See id.* For example, because OpenSky does not provide evidence of its funding, it is not possible to ascertain whether or not OpenSky merely acts as a shell for other entities seeking to challenge the

'759 patent. And as a newly formed entity, seemingly created solely for filing this IPR, OpenSky must have some source of undisclosed funding. Accordingly, OpenSky's answer is evasive and non-responsive to interrogatory (e).

Interrogatory (f) asked, "[d]id OpenSky ever condition any action relating to this proceeding . . . on payment or other consideration by Patent Owner or anyone else?" Paper 47, 9. OpenSky asserts that it "has not conditioned any action relating to this proceeding on payment or other consideration." Paper 71, 17. OpenSky does not cite supporting evidence for this assertion, except to show that, at some point in time, OpenSky paid its expert. *See id.* at 17–18 (citing Ex. 2066, 19:17–24). By contrast, VLSI and Intel provide documentary evidence that contradicts OpenSky's assertion that it did not condition any action on payment or other consideration, as discussed in detail below. Accordingly, OpenSky's answer is misleading and non-responsive to interrogatory (f). *See* 37 C.F.R. § 42.11(a) ("Parties and individuals involved in the proceeding have a duty of candor and good faith to the Office during the course of a proceeding.").

C. Sanctions for OpenSky's Failure to Comply

OpenSky has identified no authority that would allow it to ignore the interrogatories and Mandated Discovery in my Order. Therefore, I determine that OpenSky has failed to comply. I further determine that it is appropriate to sanction OpenSky for its discovery misconduct. *See* 37 C.F.R. § 42.12(b) (non-exhaustive list of sanctions).

The Director[11] has the authority to impose sanctions against a party for misconduct. 35 U.S.C. § 316(a); 37 C.F.R. § 42.12(a); *see Apple Inc. v. Voip-Pal.com, Inc.*, 976 F.3d 1316, 1323 (Fed. Cir. 2020); *see also* AIPLA, 9; BAS, 6–7; Unified, 3–5, 12–17; Naples, 6. Though 37 C.F.R. § 42.12(a) uses the permissive language "may" ("The Board may impose a sanction against a party for misconduct"), the sanctity of practice before the Board is best preserved by imposing sanctions for misconduct as a matter of course absent extenuating circumstances.

Whether sanctions are appropriate is a highly fact-specific question, and the relevant considerations will vary from case to case. Prior sanction contexts have considered:

(1) whether the party has performed conduct warranting sanctions;

(2) whether that conduct has caused harm (to, for example, another party, the proceedings, or the USPTO); and

(3) whether the potential sanctions are proportionate to the harm.

See, e.g., *R.J. Reynolds Vapor Co. v. Fontem Holdings 1 B.V.*, IPR2017-01318, Paper 16 at 5 (PTAB Aug. 6, 2018). The Director may impose sanctions, for example, for "[f]ailure to comply with an applicable rule or order in the proceeding"; "[a]buse of discovery"; "[a]buse of process"; or "[a]ny other improper use of the proceeding, including actions that harass or cause unnecessary delay or an unnecessary increase in the cost of the proceeding." 37 C.F.R. §§ 42.12(a)(1), (5), (6), (7). Sanctions may include, for example, "[a]n order holding facts to have been established in the

[11] The Director of the USPTO, the Deputy Director of the USPTO, the Commissioner for Patents, the Commissioner for Trademarks, and the Administrative Patent Judges constitute the PTAB. 35 U.S.C. § 6(a). Accordingly, the Director may levy sanctions as a member of the Board.

proceeding"; "[a]n order precluding a party from filing a paper"; and "[a]n order providing for compensatory expenses, including attorney fees." *Id.* §§ 42.12(b)(1), (2), (6). Additionally, the Director may issue sanctions not explicitly provided in 37 C.F.R. § 42.12(b). *See Voip-Pal.com*, 976 F.3d at 1323–24. Any sanction must be commensurate with the harm caused. *See R.J. Reynolds*, IPR2017-01318, Paper 16 at 5.

As a result of OpenSky's failure to comply with my ordered Mandated Discovery provisions, I, VLSI, and Intel do not have a complete record to fully examine OpenSky's assertion that it has not committed an abuse of the IPR process, or to evaluate whether its allegation of "harassment" is supported.

OpenSky should not be allowed to profit from its discovery misconduct. Accordingly, I determine that the proper sanction is to hold disputed facts as established against OpenSky. 37 C.F.R. § 42.12(b)(1); Paper 52, 4 (warning parties that "failure to comply with my Order may be sanctionable," and specifically warning that "without limitation, sanctions may include '[a]n order holding facts to have been established in the proceeding" under 37 C.F.R. § 42.12(b)(1)). The Federal Circuit has approved this remedy of adverse inference in the context of district court litigation, stating that "when 'the alleged breach of a discovery obligation is the non-production of evidence, a district court has broad discretion in fashioning an appropriate sanction, including the discretion to . . . proceed with a trial and give an adverse inference instruction.'" *Regeneron Pharms., Inc. v. Merus N.V.*, 864 F.3d 1343, 1363 (Fed. Cir. 2017) (quoting *Residential Funding Corp. v. DeGeorge Fin. Corp.*, 306 F.3d 99, 107 (2d Cir. 2002)).

In view of the record as discussed above, including OpenSky's response to interrogatory (f), I find that OpenSky was not only non-responsive to my interrogatories but that OpenSky was evasive in its responses, and engaged in egregious conduct. I further apply adverse inferences in my decisions on abuse of process below.

IV. ABUSE OF PROCESS

I initiated Director review in this proceeding to examine and address VLSI's allegations of abuse of process by OpenSky. *See* Paper 47. Under existing Office regulations, an abuse of process is sanctionable (i.e., it is "conduct that warrants sanctions"). 37 C.F.R. § 42.12(a)(6). Abuse of process is a fact-based inquiry, and existing regulations do not attempt to specify what acts constitute an abuse of process. Accordingly, I consider OpenSky's conduct to determine whether it demonstrates an abuse of process or conduct that otherwise thwarts, as opposed to advances, the goals of the Office and/or the AIA.

A. Background Principles

Congress created the AIA to support the "important congressional objective" of "giving the Patent Office significant power to revisit and revise earlier patent grants," among other objectives. *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 272 (2016). Congress did not implement a standing requirement for petitioners; any party (other than the patentee) may seek such review. 35 U.S.C. § 311(a). AIA post-grant proceedings, and more specifically, the IPR proceedings at issue here, do not exist in isolation but are part of a larger patent and innovation ecosystem. Congress intended AIA proceedings to be a less-expensive alternative to district court litigation to resolve certain patentability issues. AIA proceedings were not, however,

intended to replace patent litigation, which remains a vital forum for determining patent validity. Nor were they intended to be tools of patent owner harassment. Congress expressed the intent of the AIA in the statute when it directed the Director, when prescribing regulations, to "consider . . . the economy, the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete proceedings." 35 U.S.C. § 316(b). I consider this mandate not just when promulgating regulations, but in administering the AIA through guidance and decision-making. Abuse of AIA proceedings undermines these important objectives, and the Office will not tolerate it.

B. OpenSky's Conduct

Although OpenSky's Petition stressed that granting IPR was necessary to maintain the "integrity of the patent system" (Pet. 8–9), OpenSky's conduct belies that statement. OpenSky's subsequent conduct made clear that OpenSky was using the IPR process to extract payment from either Intel or VLSI without meaningfully pursuing unpatentability grounds. *See* Exs. 2055; 1524–1529. Again, this differs from typical settlement negotiations between adversaries during AIA proceedings, in which parties may offer payment or other consideration in return for settlement of the dispute. Using AIA post-grant proceedings, including the IPR process, for the sole purpose of extracting payment is an abuse of process warranting sanctions.

After OpenSky filed its Petition and before institution, on August 28, 2021, OpenSky and VLSI entered into a "Confidential Discussions Agreement" for settlement negotiations. Paper 84, 3 (citing Ex. 2081–2083). Although OpenSky insists throughout its briefs that VLSI initiated

and pursued settlement negotiations, and not vice versa (*see* Paper 71, 13–16; Paper 91, 4–9 (*see* Exs. 1063, 1065)), I draw an adverse inference and find that OpenSky initiated settlement negotiations. *See Vodusek v. Bayliner Marine Corp.*, 71 F.3d 148, 156 (4th Cir. 1995) ("Even the mere failure, without more, to produce evidence that naturally would have elucidated a fact at issue permits an inference that" the evidence would have exposed facts unfavorable to the non-disclosing party.). Typically, the query about who initiated settlement talks does not raise questions about abuse of the IPR process. *See* Patent Trial and Appeal Board Consolidated Trial Practice Guide ("Consolidated Practice Guide")[12] at 86 ("There are strong public policy reasons to favor settlement between the parties to a proceeding"). However, the adverse inference here that OpenSky initiated settlement negotiations is relevant to the larger question of whether OpenSky's pursuit of the IPR constitutes improper, abusive conduct.

After institution, OpenSky contacted Intel about collaborating in the IPR. *See* Paper 84, 6 (citing Ex. 2095, 2096); Paper 66, 11–12 (citing Ex. 1520). OpenSky's counsel told Intel's counsel that "VLSI has already reached out to OpenSky to discuss resolving the newly instituted IPR," but "[w]hile OpenSky remains open to discussing this matter with VLSI, OpenSky would prefer to discuss the matter directly with Intel." *Id.* (emphasis omitted). Specifically, OpenSky sought monetary payment from Intel in return for success in the IPR. Paper 66, 12 (citing Exs. 1520, 1521). "Intel rejected OpenSky's request and stated that it would not make

[12] Available at www.uspto.gov/TrialPracticeGuideConsolidated.

OpenSky any monetary offer, including to avoid any potential risk of becoming a real-party-in-interest in OpenSky's IPR." *Id.* (citing Ex. 1520).

Following Intel's rejection of OpenSky's offer, OpenSky reengaged with VLSI. *See* Paper 84, 4–5 (citing Ex. 2084–2087). The negotiations were now complicated by the joinder request of Patent Quality Assurance, LLC ("PQA") in IPR2022-00480, by which PQA sought to join this proceeding. *See id.* at 4 (citing Ex. 2090–2093). Intel also filed a Motion for Joinder to this proceeding in IPR2022-00366. Paper 43, 1.

VLSI asserts, and I find, that settlement negotiations between it and OpenSky culminated in a scheme proposed by OpenSky in an email dated February 23, 2022.[13] Paper 84, 4–5 (citing Ex. 2055). Specifically, OpenSky set forth a "construct of a proposed deal" that included the following terms (screen shot of email reproduced here):

- Parties agree to work together to secure dismissal or defeat of the petition.

- OpenSky agrees not to negotiate with Intel or PQA

- VLSI takes full three months to oppose PQA joinder

- VLSI files its patent owner response

- OpenSky refuses to pay expert for time at deposition so expert does not appear for deposition

- The day after VLSI files response, OpenSky and VLSI file motion to dismiss

[13] OpenSky contends that VLSI violated a confidentiality agreement with OpenSky (Ex. 1051) by bringing the email to the Board's attention and making the email public. Paper 71, 14–16. Although VLSI properly brought OpenSky's conduct to the Board's attention, VLSI should have filed the document confidentially with the Board only. *See* Ex. 2055 (filed as public material). My decision in this case should not be viewed as an endorsement of VLSI's behavior or of others potentially violating confidentiality agreements.

Ex. 2055, 1–2. While OpenSky's email did not list monetary amounts, it did make clear: "First payment upon execution of agreement" and "Second payment upon denial of both joinder petitions." *Id.* at 2. Moreover, OpenSky agreed that if PQA's Motion for Joinder to the proceeding was granted, OpenSky would not produce its expert, on whom PQA relied, for deposition, creating "a potentially fatal evidentiary omission that PQA would be unable to remedy." *Id.* at 1. OpenSky provided that, in that situation, "[t]here could be an alternative second payment if joinder is granted but claims are affirmed because of OpenSky's refusal to produce witnesses." *Id.* at 2.

In pressing the urgency of its proposal to VLSI, OpenSky pointed out that any deal would "not benefit [VLSI] unless it ultimately leads to dismissal of the petition, or affirmance of the claims." *Id.* OpenSky also noted that "there is substantial value to VLSI in settling with OpenSky before the Board takes up" either Intel's or PQA's "joinder petition[s]." *Id.* VLSI reported this scheme to the Board, and there were no further negotiations between OpenSky and VLSI. Ex. 2094. Initiating a legal proceeding to deliberately sabotage for money, including offering to violate the duties of candor and good faith owed to the Board, amounts to an abuse of process. *See Woods Servs.*, 342 F. Supp. 3d at 605–606; *see also BTG Int'l Inc. v. Bioactive*, 2016 WL 3519712 at *12 ("BTG has accordingly alleged sufficient facts to demonstrate that Defendants were using the IPR petition for an improper purpose—specifically, "as a threat and a club to extort and coerce millions of dollars . . . from BTG").

After engaging in an abuse of process with regard to its conduct with VLSI that did not prove fruitful to OpenSky, OpenSky continued its

discussions with Intel. Indeed, after Intel was joined to this proceeding (IPR2022-00366, Paper 43), it became clear that OpenSky had no interest in meaningfully pursuing the unpatentability grounds in its Petition.[14] Ex. 1524. For example, OpenSky proposed that it might rest on "its initial filings and may decide not to depose VLSI's expert or file a reply brief." *Id.* OpenSky allegedly offered Intel the leading role in the case, but only if Intel compensated OpenSky "for its prior work in the IPR" as well as "additional remuneration." *Id.* OpenSky did not notice VLSI's expert for deposition until after Intel proposed going to the Board to seek a more active role. Paper 44. Even then, OpenSky's counsel noticed the deposition for July 7, 2022—a mere four days before its reply brief was due, leaving little time to incorporate VLSI's expert testimony into the brief. Ex. 1525. In addition, OpenSky's counsel indicated they were scheduled to be in trial between June 24–30, 2022, leaving little time to prepare the reply brief (or prepare for the deposition). *Id.*

Given OpenSky's representations, Intel offered to help "with Dr. Conte's deposition and the petitioner's reply," and suggested that OpenSky seek a two-week extension "to give more time to integrate the deposition materials into the petitioner's reply." Ex. 1526. OpenSky's counsel proceeded with Dr. Conte's deposition on July 7, 2022, with the benefit of

[14] To be clear, parties will make choices during the course of an IPR regarding what arguments to make, papers to file, issues to pursue, etc. Those kinds of judgment calls and tactical decisions do not reflect a failure to "meaningfully pursue the merits." As explained further below, OpenSky's conduct here goes beyond ordinary strategic decisions and reflects a failure to essentially take any steps to develop or otherwise pursue an unpatentability case.

Intel's deposition outline. Ex. 1062. However, OpenSky declined to seek an extension to file its reply brief.

On Friday, July 8, 2022—three days before its reply brief was due—OpenSky's counsel initiated discussions with Intel in which OpenSky's counsel maintained that, as a result of the need to respond to the Scheduling Order (Paper 47), OpenSky intended to "refrain from considering or making further invalidity arguments and to file a reply on Monday [July 11, 2022] indicating that OpenSky believes that its original petition establishes invalidity and OpenSky rests on the arguments in that petition," and not file a reply. Ex. 1528.

At the same time, OpenSky "offered to let Intel write the reply on OpenSky's behalf in exchange for remuneration and indemnity against any lawsuit brought by VLSI against OpenSky based on the IPR proceeding." Ex. 1529. Intel declined OpenSky's offer but agreed to provide OpenSky with a fully complete reply brief with supporting expert declaration. *Id.* OpenSky agreed to "file it in full or in part" (*id.*), and did so two days later, as Paper 49 (July 11, 2022).

On August 11, 2022, VLSI requested oral argument. Paper 61. OpenSky did not request oral argument (the deadline passed August 11, 2022; Paper 18, 11) and did not meaningfully participate in the oral hearing.

C. Case-specific Considerations

1. Petitioner's interest in the proceeding

I am mindful that Congress did not itself include a standing requirement for IPRs. 35 U.S.C. § 311(a); *see Cuozzo*, 579 U.S. at 279 ("Parties that initiate [IPRs] need not have a concrete stake in the outcome; indeed, they may lack constitutional standing."); *see also* Engine, 13–14

("Congress created IPR so that any 'person who is not the owner of a patent' may file an IPR petition. . . . It would be improper for the PTO to supplant that choice.") (citations omitted). Instead, Congress left it to the USPTO to prescribe regulations, to "consider . . . the economy, the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete proceedings." 35 U.S.C. § 316(b).

The Office has repeatedly instituted IPRs where the petitioner has not been sued for infringement. *See, e.g.*, *Athena Automation Ltd. v. Husky Injection Molding Systems Ltd.*, IPR2013-00290, Paper 18, 12–13 (PTAB Oct. 25, 2013) (precedential) (declining to deny a petition based on assignor estoppel); *Fresenius Kabi USA, LLC, et al. v. Chugai Seiyaku Kabushiki Kaisha, Inc. et al.*, IPR2021-01336, Paper 27, 48 (PTAB Feb. 23, 2022). In practice, however, there is commonly a high degree of interplay between IPR petitions/trials and Article III patent litigation. *See, e.g.*, *The Patent and Trial Appeal Board: Examining Proposals to Address Predictability, Certainty, and Fairness*, Hearing Before the S. Comm. on Intellectual Prop., 117th Cong. at 1:14:27–1:14:37 (June 22, 2022) (testimony of Tim Wilson, Head of Patents and Intellectual Property Litigation, SAS Institute, Inc.) (stating that IPR petitions are typically filed in response to a patent infringement lawsuit).

Barring evidence to the contrary, there is little need to question the motives of a party sued for infringement. However, where a petitioner has not been sued for infringement, and is a non-practicing entity, legitimate questions may exist regarding whether the petitioner filed the petition for an improper purpose or one that does not advance the goals of the AIA or this Office. For example, an amici identifies a concern with petitioners who file

"petitions, filed for the primary purpose of obtaining a cash settlement" from patent owners in order to settle and terminate the proceeding. *See* Naples, 2. Not only would such a purpose not advance legitimate goals, but the PTAB proceedings under the AIA are not intended to be a tool for patent owner harassment.

To be clear, there is nothing *per se* improper[15] about a petitioner who is not a patent infringement defendant filing an IPR petition. For example, there may be circumstances in which a petitioner has not yet been sued, but believes it may be, or otherwise wants to make sure it has the freedom to operate. Alternatively, there may be circumstances in which a petitioner is planning to enter the field of technology that the patent protects and is trying to clear entry barriers. *See* Engine, 10–11. Or a petitioner may act on behalf of the public without having any research or commercial activities involving the challenged patent. *See Consumer Watchdog v. Wisconsin Alumni Rsch. Found.*, 753 F.3d 1258, 1260 (Fed. Cir. 2014).

Although it is not *per se* improper for a person not charged with infringement to file an IPR petition, the posture of a petitioner, in conjunction with other surrounding circumstances, could raise legitimate questions about whether the petition is reasonably designed to advance the beneficial aims of the AIA or this Office and whether, in addition, the filing amounts to an abuse of process.

So it is here. OpenSky has not been sued for infringing the '759 patent. Pet. 5. When I asked whether OpenSky could be sued for

[15] I address here only what conduct is improper and do not suggest that all conduct that is not improper warrants institution. Such decisions are better suited for guidelines and notice-and-comment rulemaking.

infringement (*see* Paper 47, 8), OpenSky merely indicated that it has not performed an infringement analysis and that it uses products that may incorporate accused Intel products, so it might be sued for infringement in the future. Paper 71, 11. OpenSky has not substantiated this argument, despite my Order providing it an opportunity to do so. Thus, the lack of evidence on this point is directly attributable to OpenSky's failure to follow my Order, and I draw negative inferences from that failure. *See Residential Funding Corp.*, 306 F.3d at 110 (finding that intentional acts that hinder discovery support an inference that the evidence was harmful to the non-producing party). Accordingly, I find the fact established that OpenSky does not have a legitimate belief that it may be sued for patent infringement in the future, and that fear of infringement did not motivate OpenSky to file its Petition.

OpenSky maintains that its interest is in the integrity of the patent system. Paper 71, 11–12. The record (and additional factors discussed below) belies that representation. Indeed, I ordered OpenSky to produce documentation and answer interrogatories related to its business purpose, and it has not done so. In its briefing, for example, OpenSky says that it was "not required to state a 'business' on formation," and therefore, "OpenSky has not limited its 'business.'" *Id.* at 9. Again, the lack of evidence of OpenSky's business is due to OpenSky's discovery misconduct, and therefore, I find the fact established that OpenSky did not file this case for its alleged purpose of testing patent quality or preserving the integrity of the patent system. Indeed, based on the record and adverse inferences, I find that the sole reason OpenSky filed the Petition was for the improper purpose of extracting money from either or both Intel and VLSI.

2. Recent trial verdict awarding significant damages

The mere existence of a trial verdict (whether by jury or from the bench) does not automatically make the filing of a subsequent IPR on the involved patent(s) an abuse of process. Indeed, patents are often asserted, either in demand letters or in litigation, against multiple entities in serial fashion. Both those entities subject to current or future assertions, or potential assertions, and the public have a vested interest in canceling invalid patents.

That said, an entity filing an IPR on the heels of a large jury verdict may, when combined with other facts, raise legitimate questions regarding the motivation behind the Petition. *See* USIJ, 15–16 (discussing petitions filed after infringement verdicts).

Such is the case here. As the parties and amici are well aware, a jury in the Western District of Texas rendered a verdict of more than $2 billion against Intel for infringing two VLSI patents, including the '759 patent ($675 million in damages). Ex. 1027. OpenSky filed its Petition shortly after the infringement verdict and, as noted in section IV(C)(1) of this decision above, without any established fear that it would be subject to a subsequent assertion. Together with the significant damages award, this suggests that the purpose of the IPR could be to extract a settlement from VLSI or payment from Intel.

Notably, despite being given the opportunity, OpenSky has not provided adequate evidence that it had another purpose for filing this IPR. As explained previously, OpenSky flouted Mandated Discovery by refusing to turn over documentation of the "purpose" for which OpenSky was formed. Paper 47, 8. Accordingly, per the sanction for OpenSky's

discovery misconduct, I find that it has been established that OpenSky filed its Petition for the purposes of extracting payment from VLSI or Intel.

3. Proximity of petitioner's formation to jury award

Large jury awards attract publicity and attention. When the evidence demonstrates that an IPR petitioner was formed from whole cloth soon after a damages award, and in particular a significant damages award, this suggests that the petitioner could be motivated to extract a financial windfall from the patent owner or the adjudicated infringer, rather than being motivated by any legitimate purpose.

Here, the evidence demonstrates that OpenSky was formed seven weeks after a jury found that Intel infringed the '759 patent, and awarded VLSI $675 million in damages. *Compare* Ex. 1027 (Jury Verdict Form dated March 2, 2021) *with* Ex. 2006 (OpenSky formation date of April 23, 2021). OpenSky refiled Intel's discretionarily denied IPR petitions six weeks after that. This timing, in the absence of contrary evidence from OpenSky, supports the finding that OpenSky was formed in an attempt to capitalize on that verdict. Moreover, and as explained in the previous factor, OpenSky has provided inadequate evidence that it was formed for another purpose, despite my Order giving it an opportunity to do so. As a sanction for that discovery violation, I find that it has been established that OpenSky was formed for the express and sole purpose of extracting payment from VLSI or Intel.

4. Seeking compensation from both parties

It is not unusual for parties to seek to settle their dispute; litigation is both risky and costly. Indeed, both this Office and the Federal Rules of Evidence encourage settlement. *See* Consolidated Practice Guide at 86. A

petitioner's agreement to dismiss a petition or terminate a proceeding in return for a payment from the patent owner may be the result of sound business judgment by both parties.

What is unusual, however, is a petitioner seeking compensation from *both the patent owner and another petitioner* in exchange for advocacy against whichever party does not pay. The problem with this behavior should be immediately apparent. For the purposes of the present analysis, however, such double-dealing suggests that a petition was filed purely to extract rents, in either direction, rather than for legitimate purposes.

The evidence against OpenSky here is both strong and concerning. As explained above, I find that OpenSky initiated early settlement talks with VLSI before institution. The evidence further demonstrates that following institution, OpenSky asked both VLSI and Intel for money in exchange for its cooperation in this IPR. Indeed, OpenSky contacted Intel on the very day that the Board granted institution (Ex. 1518) and communicated with VLSI both before and after the grant (Ex. 2083, 2084). That OpenSky, through its counsel, was willing to offer its advocacy to either side of this adversarial proceeding, depending on who was willing to pay, further suggests that its Petition was purely motivated by a wish to extract a quick settlement from either interested party in this proceeding. I am particularly concerned with OpenSky's counsel's proposal to VLSI (Ex. 2055) to intentionally undermine the proceeding and thereby violate the duty of good faith and candor to the Board. *See* 37 C.F.R. § 41.11. This behavior alone is sanctionable and will not be tolerated.

Moreover, OpenSky's predatory behavior did not end once it became clear that neither VLSI nor Intel was interested in paying OpenSky.

OpenSky also suggested that it lacked the resources to pursue this IPR and intimated that Intel should reimburse OpenSky for the predictable expenses associated with filing its Petition. *See, e.g.*, Ex. 1528 (email from OpenSky's counsel to Intel indicating that "OpenSky has been forced to reallocate its remaining funds to address the director's review," and therefore, "OpenSky has directed me to refrain from considering or making further invalidity arguments" and to "rest[] on the arguments in th[e] petition"); Ex. 1529 (email from OpenSky's counsel to Intel stating that "it is unfortunate that Intel is not willing to reimburse OpenSky for any of the considerable filing fees and legal fees that were incurred in filing this petition . . ."). Taken at face value, OpenSky's comments that it was running out of money indicate that it did not budget for litigating this proceeding throughout its expected life, to a final written decision. In other words, in the absence of contrary evidence due to its discovery misconduct, OpenSky's behavior and complaints about budgeting establish that it did not intend to pursue the patentability merits but instead intended to leverage the IPR's existence only to extract a payout from one side or the other.

5. Failure to meaningfully pursue the merits

The evidence demonstrates that both before and after institution, OpenSky was focused on getting payment from VLSI or Intel as opposed to pursuing the merits of its patentability challenge. *See, e.g.*, Ex. 1518 (OpenSky email to Intel Dec. 23, 2021); Ex. 2084 (OpenSky email to VLSI Dec. 27, 2021).

Instead of vigorously litigating the IPR, as would be expected of a lead petitioner, OpenSky continued to seek payment from Intel. For example, OpenSky "offered to let Intel write the reply on OpenSky's behalf

in exchange for remuneration and indemnity against any lawsuit brought by VLSI against OpenSky based on the IPR proceeding." Ex. 1527. Intel refused. *Id.* OpenSky then lamented Intel's unwillingness "to reimburse OpenSky for any of the considerable filing and legal fees that were incurred in filing this petition" and stated that, nevertheless, it was "still willing to partner with Intel"—its *co-petitioner*, allegedly working toward the same goal—"moving forward." Ex. 1529. Despite Intel's refusal to pay, OpenSky filed a reply brief that Intel drafted and used Intel's deposition outline. Exs. 1527, 1529. Moreover, OpenSky did not request oral argument (the deadline passed August 11, 2022; Paper 18, 11) and did not meaningfully participate in the oral hearing.

This focus on settlement or reimbursement, rather than litigating the merits, further indicates that OpenSky's goal was to extract a payment rather than litigate the validity of VLSI's patent.

6. Filing a copycat petition

As my Scheduling Order notes, filing a "copycat" petition is not inherently improper. Paper 47, at 4 n.3. For example, under the current joinder rules, a time-barred party may file a copycat petition when it is seeking joinder as provided by the AIA. *See* 35 U.S.C. § 315(c); 37 C.F.R. §§ 42.122(b), 42.101(b). There may be circumstances, however, in which the filing of a petition that copies a previously denied petition may suggest an abuse of process.

The present case provides an example. In addition to OpenSky filing what was essentially a copy of Intel's IPR petition, which had previously been denied based on the *Fintiv* factors, OpenSky also filed a copy of Intel's expert declaration, without OpenSky notifying that expert that it was doing

so, let alone confirming that his opinions had not changed. Ex. 2097. OpenSky had also not engaged the expert to testify in the case, negotiated a rate for his services, or inquired as to his interest or availability. *Id.* Submitting a declaration in a proceeding, without securing the ability of the declarant to be challenged, raises serious process concerns. The lack of control over a key witness puts the entire case in jeopardy, which is exactly what happened in OpenSky's other IPR, which was denied because OpenSky could not ensure that Intel's expert, Dr. Singh, would appear for deposition. *See* IPR2021-01056, Paper 18 (Dec. 23, 2021). On these facts, this conduct suggests that OpenSky was attempting to file a petition with the lowest possible cost in an effort to generate leverage against VLSI, but without the intent or expectation of litigating the proceeding through trial.

D. Conclusion

Viewed as a whole, OpenSky's conduct has been an abuse of the IPR process, the patent system, and the Office. The totality of OpenSky's conduct evinces a singular focus on using an AIA proceeding to extort money, from any party willing to pay, and at the expense of the adversarial nature of AIA proceedings. Despite being given the opportunity, OpenSky failed to offer a verifiable, legitimate basis for filing its IPR Petition, which was filed only after a district court awarded large monetary damages keyed to the subject '759 patent. And the Petition it filed was not generated by OpenSky, but was a copy of Intel's earlier petition, filed without engaging Intel's expert or confirming his opinions or willingness to participate. Further, after filing the Petition, OpenSky did not conduct itself in a manner consistent with the AIA's purpose of exploring patentability issues. OpenSky's post-institution activity was dominated by attempts to extract

money from either Intel or VLSI instead of engaging with the patentability merits.

Seeking an AIA trial for the primary purpose of extorting money, while being willing to forego or sabotage the adversarial process, does not comport with the purpose and legitimate goals of the AIA and is an abuse of process. Opportunistic uses of AIA proceedings harm the IPR process, patent owners, the Office, and the public. Naples, 2; USIJ, 4.[16] To safeguard the proper functioning of the patent system, and the confidence therein, it is incumbent on me and the USPTO to protect against that harm.

V. REMEDY FOR ABUSE OF PROCESS

The AIA granted the Office broad authority to prescribe regulations aimed at sanctioning the "abuse of process, or any other improper use of the proceeding." 35 U.S.C. § 316(a)(6). Our existing regulations take full advantage of that authority and provide a broad range of potential sanctions to address such abuse, ranging from awarding "compensatory expenses" to "[j]udgment in the trial." 37 C.F.R. § 42.12(a)(6), (b). These enumerated sanctions are not exclusive. The Federal Circuit has held that § 42.12(b) "allows the Board to issue sanctions not explicitly provided in the regulation." *Voip-Pal.com*, 976 F.3d at 1323. Accordingly, the Office has robust powers to sanction the abuse of process where it occurs and to deter similar abuse. The Director will ensure that the remedy suits the

[16] This situation thus meaningfully differs from others in which a "profit motive" was arguably present but there was not otherwise an allegation or proof that the petitioner had failed to meaningfully pursue the patentability merits. *See, e.g.*, *Coalition for Affordable Drugs VI, LLC v. Celgene Corp.*, Case IPR2015-01092, Paper 18 (Sept. 25, 2015) (denying motions for sanctions for abuse of process).

wrongdoing, both in this specific case and more generally when faced with evidence of an abuse of process or conduct that thwarts, rather than advances, the goals of the Office and the AIA.

Here, in addition to any monetary sanctions I may levy (*see* below), I must decide whether to maintain or dismiss the underlying proceeding.

VLSI contends that the remedy for OpenSky's abuse should be termination of this IPR. Paper 84, 21. VLSI also argues that Intel should not be "allowed to take advantage of OpenSky's misconduct at VLSI's expense." Paper 84, 24. VLSI asserts that Intel was a time-barred party, and that the Board has previously terminated joined time-barred parties when finding that an IPR was improperly instituted. *See id.* at 24–25 (citing *I.M.L. SLU v. WAG Acquisition, LLC*, IPR2016-01658, Paper 46, 3, 5 (PTAB Feb. 27, 2018); *Mylan Pharma Inc. v. Horizon Pharma USA, Inc*., IPR2017-01995, Paper 71, 12–13 (PTAB Mar. 17, 2019); *Intel Corp. v. Alacritech, Inc*., IPR2018-00234, Paper 66, 23 (PTAB June 4, 2019); *Sling TV, LLC v. Realtime Adaptive Streaming, LLC*, IPR2018-01331, Paper 39, 8 (PTAB Jan. 17, 2020).

Intel responds that, in "VLSI's cited cases, the IPRs were terminated because the ***original*** petitioner was ***statutorily barred*** from bringing the petition in the first instance," so the petition was void *ab initio*. Paper 89, 12 (emphasis in original). That reasoning, however, does not apply to the current proceeding. As Intel correctly points out, in other cases, the Board has allowed a joined petitioner to step into an active role after the original petitioner was terminated from the proceeding. *See id.* at 13 (citing *Apple Inc. v. Traxcell Techs., LLC*, IPR2021-01552, Paper 19, 2 (PTAB May 26, 2022); *AT&T Servs., Inc. v. Convergent Media Sols., LLC*, IPR2017-01237,

Paper 11, 26–28 (PTAB May 10, 2017); *Qualcomm Inc. v. Bandspeed, Inc.*, IPR2015-01577, Paper 12 at 2–3, 6, 8 (PTAB Nov. 16, 2015).

Amici recognize that I must "weigh the policy goals of the Office and the AIA" when facing abusive behavior because "the public has a clear interest in discouraging conduct that is abusive or otherwise thwarts Congress's goals in passing the AIA and the Office's goals in overseeing post-grant proceedings." AIPLA, 5–6. Many amici have pointed out that "[o]ur patent system is rooted in the fact that valid claims . . . support innovation, progress, and the public's interests" (Engine, 3), while "[i]nvalid patents unduly restrict innovation, competition, and access to knowledge" (PIPLI, 2). *See* CCIA, 2; HTIA, 7; BSA, 10. Accordingly, "ensuring that invalid patents do not remain in force [is] one of the core missions of the PTAB" (CCIA, 2), and "AIA trials thus broadly aim to 'protect the public's paramount interest in seeing that patent [rights] are kept within their legitimate scope'" (HTIA, 5 (quoting *Cuozzo*, 579 U.S. at 789–80)). *See* Unified, 5–6, Engine, 7–8. On the other hand, other amici highlight that "the patent system incentivizes inventors to publicly disclose innovations that advantage the public by granting an inventor a patent, upon which an 'exclusive enjoyment is guaranteed.'" Centripetal, 14; USIJ, 15; Maalouf, 6. Those amici point out that the legislative history of the AIA shows Congress recognized the importance of reliable patent rights. Maalouf, 6 (citing H.R. Rep. No. 112-98, pt. 1, at 48 (2011)); Centripetal, 13; USIJ, 15.

Going back to first principles, to further the objectives of this Office in promoting and protecting innovation for the greater good of the public, I must advance the goals of securing reliable patent rights and removing patents that do not support innovation. *See* Lamar Smith, *Don't Weaken the*

Leahy-Smith America Invents Act, BLOOMBERG LAW (Mar. 30, 2022), at 3 ("In the committee report on the AIA, we wrote about the importance to inventors of having 'quiet title'—clear ownership that can't be challenged"); H.R. Rep. No. 112-98, pt. 1, at 40 (2011); 2011 U.S.C.C.A.N. 67, 69; S. Rep. No. 110-259, at 20 (2008) (the congressional intent behind the AIA was "to establish a more efficient and streamlined patent system that will improve patent quality and limit unnecessary and counterproductive litigation costs").

I recognize that OpenSky should not benefit from its abusive use of the IPR process. Accordingly, due to OpenSky's abuse of the process, I am temporarily elevating Intel to an active party and am relegating OpenSky to a silent understudy role for the duration of this proceeding. Removing OpenSky's control of the IPR removes its ability to leverage that control for or against a particular party. Therefore, for the duration of this case, OpenSky will be prevented from presenting or contesting any particular issue; requesting, obtaining, or opposing discovery; filing any additional papers; or participating in oral argument, unless specifically authorized to do so, for example, as detailed below in relation to an order to show cause. 37 C.F.R. §§ 42.12(b)(2–4).

On the issue of whether to terminate the proceeding, that sanction could be the appropriate remedy here or in future proceedings reflecting an abuse of process. However, the unique dynamics of this case, coupled with the public interest in evaluating patent challenges with compelling merits, counsels for a different approach here by permitting this IPR to continue only if the panel determines that the unpatentability merits were compelling as of the time of institution and on the record as it existed at that time.

Predicating dismissal on the application of the compelling-merits standard best serves the competing interests here.

I recognize that some may believe that I am allowing Intel to benefit from OpenSky's wrongdoing by not immediately terminating the proceeding.[17] However, there is no evidence that Intel was complicit in OpenSky's abuse. I therefore focus on a principled, replicable approach that is in the best interest of the public and advances the USPTO and AIA goals to "consider . . . the economy, the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete proceedings." 35 U.S.C. § 316(b).

The circumstances of this particular case are unusual and are not likely to reoccur.[18] As discussed above, after being sued by VLSI, Intel filed its original IPR Petitions within the required time. 35 U.S.C. § 311(c)(1). At that time, the Board exercised discretion to deny institution based on the advanced state of a district court litigation that also involved the patent. IPR2020-00106, Paper 17, 13; IPR2020-00498, Paper 16, 6, 10. Consistent with how *Fintiv* was applied at that time, the Board did not address the

[17] Under the USPTO's rules, promulgated on August 14, 2012, and past practices, even though Intel would have been otherwise time barred, it was permitted to file a petition for joinder within one month of the institution decision. 35 U.S.C. § 315(b); 37 C.F.R. §§ 42.122(b), 42.101(b).

[18] Apart from the Memorandum that will require an earlier determination of compelling merits in future cases with similar fact patterns, the Board issued its Decisions several months before *Sotera* was designated precedential. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (issued Dec. 1, 2020, designated precedential Dec. 17, 2020) (applying *Fintiv* and instituting review after the Petitioner filed a broad stipulation to limit grounds in district court, addressing factor 4 in *Fintiv*).

merits of the Petition, except to state "that the merits of the Petition[s] do not outweigh the other *Fintiv* factors." IPR2020-00106, Paper 17, 13. Although I recognize that the "compelling merits" analysis would not normally apply where the *Fintiv* factors are not implicated (as the Board correctly determined here on OpenSky's petition), when determining whether to continue an IPR initially filed for improper purposes, I must consider the public interest, which compels the USPTO to evaluate unpatentability challenges that, at the institution stage, evidence compelling merits.[19]

I remand the decision to the Board to issue an order within two weeks on whether the record before the Board prior to institution indicates that the Petition presents a compelling, meritorious challenge as consistent with the Memorandum. In assessing compelling merits, the Board should apply the guidance set forth in my Memorandum. There, I explained that "[c]ompelling, meritorious challenges are those in which the evidence, if unrebutted at trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence." *Id.* at 4.

To be clear, a compelling-merits challenge is a higher standard than the reasonable likelihood required for the institution of an IPR under 35 U.S.C. § 314(a). A challenge can only "plainly lead to a conclusion that one or more claims are unpatentable" (*id.*) if it is highly likely that the petitioner would prevail with respect to at least one challenged claim. I recognize that all relevant evidence likely will not have been adduced at the point of institution; trial should produce additional evidence that may support a

[19] My decision to conduct a compelling-merits determination here, per the Memorandum, is limited to the facts of this case and should not be treated as an endorsement of retroactive application of that Memorandum to institution decisions made before it issued.

determination in the Final Written Decision that unpatentability has not been adequately proven. Thus, a determination of "compelling" merits should not be taken as a signal to the ultimate conclusion after trial. The Board shall provide its reasoning in determining whether the merits are compelling.

In making its determination, the Board must analyze the evidence and the parties' arguments as they existed at the date of institution. Consistent with the ordinary course of institution, I do not authorize the parties to provide any additional briefing or argument on this issue.

Should the Board find that such a challenge was made prior to institution, the Board shall move forward with the proceeding with Intel as the active party.

Should the Board find that the Petition does not present a compelling, meritorious challenge prior to institution, the Board shall dismiss the Petition (filed by both OpenSky and Intel), subject to the Director, the Board, and the USPTO retaining jurisdiction over the issuance of sanctions.

VI. REQUESTS FOR IN CAMERA REVIEW

VLSI requested that I review in camera documents listed on Intel's privilege log and OpenSky's documents, generally. *See, e.g.*, Papers 62, 63. No other parties requested in camera review. For the reasons explained above, however, the evidence exchanged as Mandated Discovery is sufficient to resolve this Director review without resorting to in camera review. Accordingly, the request for in camera review is denied.

VII. SHOW CAUSE

Finally, for all the reasons discussed above, OpenSky also is ordered to show cause as to why it should not be ordered to pay compensatory expenses, including attorney fees, to VLSI as a further sanction for its abuse

of process. 37 C.F.R. § 42.12(b)(6). Within two weeks of this Decision, OpenSky and VLSI shall each file a 10-page Paper addressing whether an award of attorney fees is appropriate, and if so, how such fees should be determined, e.g., the appropriate time frame for which fees should be assessed.

VIII. ORDER

For the foregoing reasons, it is hereby:

ORDERED that OpenSky is relegated to the silent understudy role in this proceeding and is precluded from presenting or contesting any particular issue; requesting, obtaining, or opposing discovery; or filing any additional papers, unless specifically directed to do so;

FURTHER ORDERED that Intel is elevated to an active party in the role of lead petitioner in this proceeding;

FURTHER ORDERED that the Board panel shall determine and issue an order, within two weeks, addressing whether the petition, based only on the record before the Board prior to institution, presents a compelling, meritorious challenge, and shall take the appropriate action to dismiss or maintain the underlying action as identified above based on its determination; and

FURTHER ORDERED that OpenSky and VLSI shall file a Paper responding to the show cause order for OpenSky, addressing whether compensatory expenses should be ordered as a further sanction for OpenSky's abuse of process. Briefing shall be filed within two weeks of this decision and shall be limited to 10 pages.

IPR2021-01064
Patent 7,725,759 B2

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Paper No. 107
Date: October 14, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OPENSKY INDUSTRIES, LLC,
INTEL CORPORATION,
Petitioners,

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064
Patent 7,725,759 B2

Before THOMAS L. GIANNETTI, BRIAN J. MCNAMARA, and JASON W. MELVIN, *Administrative Patent Judges*.

MELVIN, *Administrative Patent Judge*.

ORDER
Decision on Remand
Assessing Merits at Institution

I. INTRODUCTION

OpenSky Industries, LLC ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting institution of *inter partes* review of claims 1, 14, 17, 18, 21, 22, and 24 ("the challenged claims") of U.S. Patent No. 7,725,759 B2 (Ex. 1001, "the '759 patent"). VLSI Technology LLC ("Patent Owner") opposed. Paper 9 (Preliminary Response, "Prelim. Resp."); Paper 16 (Preliminary Sur-Reply); *see also* Paper 13 (Petitioner's Preliminary Reply). On December 23, 2021, we instituted review. Paper 17 ("Institution Decision", or "Inst."). In addition, Intel Corporation filed a petition requesting *inter partes* review of claims 1, 14, 17, 18, 21, 22, and 24 of the '759 patent. IPR2022-00366, Paper 3. On June 8, 2022, we instituted review in IPR2022-00366 and joined Intel Corporation as a petitioner in this proceeding. Paper 43.

The Director initiated review of our Institution Decision on June 7, 2022. Paper 41. On October 4, 2022, the Director remanded the decision to us, directing us to issue an order by October 18, 2022, "on whether the record before the Board prior to institution indicates that the Petition presents a compelling, meritorious challenge" as consistent with the June 21, 2022, Director's Memorandum ("Memorandum").[1] Paper 102 ("Director Remand"), 49. The Director ordered us to apply the Memorandum's guidance, specifically that "[c]ompelling, meritorious challenges are those in which the evidence, if unrebutted at trial, would plainly lead to a conclusion

[1] *Available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf

that one or more claims are unpatentable by a preponderance of the evidence." *Id.* (quoting Memorandum at 4) (alteration in original).

Having evaluated the record prior to institution, we conclude that the Petition presents a compelling, meritorious challenge.

A. THE '759 PATENT

The '759 patent is titled System and Method of Managing Clock Speed in an Electronic Device. Ex. 1001, code (54). The patent describes a method of monitoring a plurality of master devices coupled to a bus, receiving an input from a master device that is a request to increase the bus clock frequency, and increasing the bus clock frequency in response to the request. *Id.* at code (57).

B. CHALLENGED CLAIMS

Challenged claim 1 is reproduced below:

1. A method, comprising:

monitoring a plurality of master devices coupled to a bus;

receiving a request, from a first master device of the plurality of master devices, to change a clock frequency of a high-speed clock, the request sent from the first master device in response to a predefined change in performance of the first master device, wherein the predefined change in performance is due to loading of the first master device as measured within a predefined time interval; and

in response to receiving the request from the first master device:

providing the clock frequency of the high-speed clock as an output to control a clock frequency of a second master device coupled to the bus; and

providing the clock frequency of the high-speed clock as an output to control a clock frequency of the bus.

Ex. 1001, 7:66–8:15. Claims 14 and 18 are independent and recite limitations similar to claim 1. *Id.* at 8:50–9:4, 9:19–40. The other challenged claims depend from one of the independent claims.

C. Prior Art and Asserted Grounds

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 14, 17	103	Shaffer[2], Lint[3]
18, 21, 22, 24	103	Shaffer, Lint, Kiriake[4]
1, 14, 17	103	Chen[5], Terrell[6]
18, 21, 22, 24	103	Chen, Terrell, Kiriake

Pet. 7. Petitioner relies also on the Declarations of Dr. Bruce Jacob. Exs. 1002, 1046.

II. ANALYSIS

Our Institution Decision addressed Petitioner's contentions and Patent Owner's challenges to those contentions. *See generally* Inst. We need not repeat that analysis here. In the Director's Decision, she noted that "a compelling-merits challenge is a higher standard than the reasonable likelihood required for the institution of an IPR under 35 U.S.C. § 314(a)."

[2] US 6,298,448 B1, issued Oct. 2, 2001 (Ex. 1005).
[3] US 7,360,103 B2, issued Apr. 15, 2008 (Ex. 1006).
[4] US 2003/0159080 A1, published Aug. 21, 2003 (Ex. 1028).
[5] US 5,838,995, issued Nov. 17, 1998 (Ex. 1003).
[6] US 2004/0098631 A1, published May 20, 2004 (Ex. 1004).

Director Remand at 49. And she further clarified that a compelling-merits challenge requires concluding that it is "highly likely that the petitioner would prevail with respect to at least one challenged claim." *Id.*

A. UNPATENTABILITY GROUNDS INCLUDING SHAFFER AND LINT

Petitioner relies on Schaffer for most limitations of claim 1, further relying on Lint to support that a "predefined change in performance is due to loading of the first master device as measured within a predefined time interval." Pet. 22–31. Petitioner first asserts that Shaffer teaches that limitation by disclosing that "the CPU 20 operates at a lower speed when the OS 32 determines that no processing is occurring or has not occurred for a predetermined amount of time." *Id.* at 27 (quoting Ex. 1005, 4:6–8). Petitioner relies on Lint as an alternative to Shaffer's teachings in that regard, submitting that Lint discloses "changing the 'performance state . . . based in part on the data representing the average performance over the previous period of time.'" *Id.* (quoting Ex. 1006, 3:1–7). Petitioner reasons that Shaffer describes a "CPU utilization percentage" and that Lint discloses a way of calculating that percentage that would allow Shaffer's system "to better interface with processor chips featuring hardware coordination of [performance]-states" by saving power, and that doing so would amount to nothing more than using a known technique to improve similar devices in the same way. *Id.* at 27–30 (citing Ex. 1006, 3:2–7, 2:33; Ex. 1002 ¶¶ 208–226).

Patent Owner contested Petitioner's showing as to the claimed master devices. Prelim. Resp. 31–40. In one aspect, Patent Owner challenged whether Shaffer's memory controller and bus controller could be master devices within the challenged claims. *Id.* at 31–37. We did not find it

necessary to determine whether Petitioner's contentions regarding the memory controller and bus controller justified institution. Inst. 20. Based solely on Petitioner's memory-controller and bus-controller contentions, we would not conclude the Petition presented a compelling-merits challenge.

Petitioner, however, also relied on Shaffer's multiple-CPU embodiment as disclosing a plurality of master devices. Pet. 23. Although Patent Owner challenged whether Shaffer adequately discloses multiple CPUs as master devices (Prelim. Resp. 37–39), we did not agree. Inst. 19–20.

Evaluating the parties' multiple-CPU contentions under the compelling-merits standard, we conclude the record at institution meets that standard. In particular, Shaffer states that, "in a multiprocessor system, . . . a single clock module 50 may drive all the processor clocks." Ex. 1005, 6:2–5. That disclosure supports the principle that the CPUs operate on the same bus. While Patent Owner argued that Shaffer's multiple CPUs would not necessarily act as master devices, would not necessarily connect to the same bus, and would not necessarily each request a speed change (Prelim. Resp. 37–39), those arguments did not undermine the Petition's showing, as further explained below. *See* Inst. 19–20.

As to requesting a speed change, Patent Owner did not seek a construction for "master device" that would require any master device be capable of requesting a speed change. *See* Prelim. Resp. 37–39. Thus, Patent Owner's assertion that Shaffer's multiple CPUs are not master devices because they do not request a speed change was not persuasive. As to connecting to the same bus or acting as master devices, the Petition asserted facts supporting that Shaffer's multiple CPUs would share a bus and

therefore act as master devices. Pet. 23 (citing Ex. 1002 ¶¶ 229–233). Although Patent Owner challenged whether Shaffer's disclosures support Petitioner's asserted facts, Patent Owner did not substantively address statements by Petitioner's expert declarant, and instead only challenged the declaration as hearsay or improperly incorporated argument. *See* Prelim. Resp. 39.

We conclude that the expert testimony relied on in the Petition (Ex. 1002 ¶¶ 231–233), if unrebutted at trial, would plainly lead to a conclusion of unpatentability based on Shaffer's multiple CPUs. *See* Memorandum at 4. That testimony supports the aspects of Petitioner's contentions that were challenged by Patent Owner, and we conclude that testimony presents logical, supported assertions, rooted in Shaffer's disclosures. In particular, Dr. Jacob's testimony asserts that Shaffer's multiple CPUs would operate on the shared "system bus," depicted with shared-bus organization, and using a single clock module. Ex. 1002 ¶¶ 231–232 (citing Ex. 1005, 6:2–5, Fig. 1).

Patent Owner further challenged Petitioner's showing as to an "output to control a clock frequency of the bus." Prelim. Resp. 40–49. In Patent Owner's view, Petitioner relied on different buses in Shaffer, thus failing to show an output to the singular claimed bus. *Id.* Patent Owner's argument in this regard was not persuasive, as it relied on narrowly reading Shaffer and attempted to restrict Shaffer's teachings to one disclosed embodiment. Inst. 20–21. Viewing the evidence under the compelling-merits standard, we conclude that it was highly likely Petitioner would prevail regarding the "output to control a clock frequency of the bus," based on Shaffer's plain disclosures.

For a number of limitations, Patent Owner's Preliminary Response did not challenge Petitioner's assertions regarding Shaffer and Lint. Our review of those limitations indicated that they supported institution (*see* Inst. 21), and upon further review of the record before institution, we conclude that Petitioner's arguments and evidence for these limitations, if unrebutted at trial, would plainly lead to a conclusion of unpatentability.

Patent Owner argued that objective indicia of nonobviousness supported a conclusion of no unpatentability for the '759 patent. Prelim. Resp. 69–71. We determined in the Institution Decision that such arguments presented a factual issue for trial. Inst. 21. At least because Patent Owner's assertions in its Preliminary Response did not address a required element of objective indicia—a nexus with the challenged claims—Patent Owner's assertions of objective indicia do not call into question our view of Petitioner's case-in-chief as having presented a compelling, meritorious challenge prior to institution.

B. Unpatentability Grounds Including Chen and Terrell

Petitioner relies on Chen for most limitations of claim 1, submitting that Terrell additionally teaches requesting a clock speed change "in response to a predefined change in performance of the first master device" and that the predefined change "is due to loading of the first master device as measured within a predefined time interval." Pet. 40–49. Petitioner asserts it would have been obvious to use Terrell's teachings with Chen to adjust Chen's clock speed "based on 'how many clock cycles are being used by each processing element'" because "[r]educing clock speed was a well-known technique for reducing power consumption." Pet. 44 (quoting Ex. 1004 ¶ 26; citing Ex. 1002 ¶¶ 126–142, 145).

Patent Owner contested Petitioner's showing as to whether Chen discloses "providing the clock frequency . . . as an output to control a clock frequency of a second master device." Prelim. Resp. 50–56. In particular, Patent Owner challenged whether Chen's clock controller controlled the frequency of both the bus and multiple master devices on the bus. *Id.*

In this regard, Petitioner relies on Chen's statements that "control logic in the bridge chip causes the higher frequency clock in the bridge chip to be activated such that the host bridge, bus and I/O device are all then operating at the higher frequency" (Ex. 1003, 2:8–14), and "[c]lock gate circuit 24 causes the frequency of bus 40 to be dynamically changed (gated) by transmitting the appropriate device unique clock lines 27." *Id.* at 3:20–22. Because Chen's "unique clock lines 27" are specific to each bus device, we reasoned that those lines control the devices' frequencies. Inst. 25–26. Patent Owner's argument contradicted Chen's plain language and therefore we conclude that Petitioner's assertions, if unrebutted at trial, would plainly lead to a conclusion of unpatentability. That is, we determine the record prior to institution shows that it was highly likely Petitioner would prevail because its contentions were supported by the prior art's disclosures even without supporting expert testimony.

Patent Owner also contested Petitioner's assertions that skilled artisans would have combined Chen and Terrell. Prelim. Resp. 56–69. Specifically, Patent Owner argued that Chen and Terrell have competing interests—Chen in running its bus clock as fast as possible, to accommodate high-speed devices, and Terrell in reducing its clock to the minimum possible speed, to save power. *Id.* at 58–59.

In the Institution Decision, we concluded that Petitioner's expert, Dr. Jacob, adequately explained how a skilled artisan would view the two references as compatible and understand the benefit of combining them. Inst. 27 (citing Ex. 1002 ¶ 136). Petitioner's contentions, as supported by Dr. Jacob, if unrebutted at trial, would plainly lead to a conclusion of unpatentability because his testimony logically and fully explains how the combination would integrate the two references' teachings and offer a benefit. Ex. 1002 ¶¶ 136–145.

Patent Owner argued also that skilled artisans had no reason to look beyond Chen because doing so would increase a system's complexity. Prelim. Resp. 60. As noted in the Institution Decision, that argument failed to apply the applicable standard for obviousness and therefore was not persuasive. Inst. 28. At most, a conclusion that increased complexity would dissuade a skilled artisan from making the combination would require evidence that rebutted Petitioner's showing, which evidence was lacking prior to institution. Thus, Patent Owner's arguments did not undermine the strength of Petitioner's case at institution.

For a number of limitations, Patent Owner's Preliminary Response did not challenge Petitioner's assertions regarding Chen and Terrell. Our review of those limitations indicated that they supported institution (*see* Inst. 29), and upon further review of the record before institution, we conclude that Petitioner's arguments and evidence for these limitations, if unrebutted at trial, would plainly lead to a conclusion of unpatentability.

Considering Patent Owner's arguments against institution and supporting evidence, we conclude it was highly likely Petitioner would

prevail with unpatentability of at least one challenged claim over Chen and Terrell.

III. CONCLUSION

We have reviewed the record prior to institution and considered whether the Petition presents a compelling, meritorious challenge. For the reasons discussed above, we conclude the Petition and supporting evidence, if unrebutted at trial, would plainly lead to a conclusion that one or more challenged claims are unpatentable. Balanced against Patent Owner's arguments and evidence against institution, the record prior to institution supports that it was highly likely that Petitioner would prevail with respect to at least one challenged claim.

IV. ORDER

Accordingly, it is

ORDERED that the record before the Board prior to institution in this proceeding indicates that the Petition presents a compelling, meritorious challenge.

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Paper No. 114
Date: November 4, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE OFFICE OF THE UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

OPENSKY INDUSTRIES, LLC,
INTEL CORPORATION,
Petitioners,

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064[1]
Patent 7,725,759 B2

Before KATHERINE K. VIDAL, *Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office*.

ORDER
Denying Request for Reconsideration

[1] Intel Corporation ("Intel"), which filed a petition in IPR2022-00366, has been joined as a party to this proceeding.

I. INTRODUCTION

On October 4, 2022, I issued a Director review decision determining that Petitioner OpenSky Industries, LLC ("OpenSky") abused the *inter partes* review ("IPR") process by filing an IPR in an attempt to extract payment from Patent Owner VLSI Technology LLC ("VLSI") and/or joined Petitioner Intel, and expressing a willingness to abuse the process in order to do so. *OpenSky Industries, LLC v. VLSI Technology LLC*, IPR2021-01064, Paper 102, 3 (PTAB Oct. 4, 2022) ("Decision" or "Dec."). I sanctioned OpenSky by precluding OpenSky from actively participating in the proceeding and temporarily elevated Intel — who properly joined the instituted petition during the one-month post-institution window permitted by 37 C.F.R. § 42.122(b) — to the role of lead petitioner in the proceeding. Dec. 47; *see also Intel Corp. v. VLSI Tech. LLC*, IPR2022-00366, Paper 14 (Institution and Joinder Decision), 17–19 (PTAB June 8, 2022). I also ordered OpenSky to show cause as to why it should not be ordered to pay compensatory expenses, including attorney fees, to VLSI as a further sanction for its abuse of process. Dec. 50–51. Moreover, I remanded the proceeding for the Board to determine whether OpenSky's Petition, based on the record before institution, presented a "compelling, meritorious challenge." *Id.* at 49–50. If so, I explained that the proceeding would continue. *Id.* at 50. If the Board determined that compelling merits did not exist, I explained that the proceeding shall be dismissed. *Id.*

On October 13, 2022, VLSI filed Patent Owner's Request for Reconsideration of and Objections to Director's October 4, 2022 Decision ("Request for Reconsideration" or "Req. Recon."). Paper 106. The next day, the Board issued its decision on compelling merits. Paper 107. On

October 17, 2022, I ordered a *sua sponte* Director review of the Board's compelling merits decision because "I feel duty-bound to conduct an independent Director review of the compelling merits determination based on the unusual and complex nature of this case." Paper 108, 6. I also granted OpenSky's counsel's motion to withdraw from this proceeding. Paper 109, 6.

I have reviewed the Request for Reconsideration and the relevant papers. I deny the Request for Reconsideration for the reasons set forth below.

II. DISCUSSION

VLSI's Request for Reconsideration will be treated as a Request for Rehearing and subject to the same standards set forth in the USPTO's Interim Process for Director Review webpage,[2] which provides, in pertinent part:

> Requests for rehearing [of] a Director review decision should be rare, and for focused purposes. A request for rehearing of a Director review decision is not an opportunity raise new issues, reargue issues, or to disagree with the determinations by the Director. Instead, if the requesting party has provided briefing for Director review, the rehearing request must demonstrate that the Director review decision was based upon a manifest error of law or fact. If the requesting party has not provided briefing for Director review, the rehearing request must specifically identify what matter the Director review decision misapprehended or overlooked. 37 C.F.R. § 42.71(d).
>
> A party dissatisfied with a Director review decision may file a single request for rehearing without prior authorization, and that

[2] *See* https://www.uspto.gov/patents/patent-trial-and-appeal-board/interim-process-director-review.

> party carries the burden of showing the Director review decision should be modified.

In its Request for Reconsideration, VLSI advances a number of arguments as to why it believes the Decision ordering the Board to apply the compelling merits standard in assessing whether to allow the IPR to proceed was improper. None of VLSI's arguments, which I step through below, satisfies VLSI's burden to establish that the Decision was based upon a manifest error of law or fact.

Turning to VLSI's request, ***first***, VLSI argues that "this case was instituted on false premises" and that the sanctions levied "do not [] grant VLSI a remedy for OpenSky's abuse." Req. Recon. 3–5. As to the premises on which this case was instituted, the Board properly applied the test set forth by Congress, finding that "Petitioner has shown a reasonable likelihood of prevailing with respect to at least one claim." Paper 17, 29.

As to VLSI's complaint about the sanctions contained in the Decision, they were issued "to deter such conduct by OpenSky or others in the future." Paper 102, 4 (citing 37 C.F.R. § 42.11(d)(4)). Section 42.11(d)(4) specifically provides: "A sanction imposed under this rule must be limited to what suffices to deter repetition of the conduct or comparable conduct by others similarly situated and should be consistent with § 42.12." Though VLSI may benefit from a potential award of attorney fees, our rules do not compel additional sanctions to benefit VLSI or make it whole. VLSI's dissatisfaction with the sanctions I ordered does not demonstrate a manifest error of law or fact.

At its core, VLSI's argument is that the only appropriate "remedy" here is termination, and I understand that termination is the result that would most benefit VLSI. However, as my Decision explains, "the unique

dynamics of this case, coupled with the public interest in evaluating patent challenges with compelling merits" counseled against immediate termination. Paper 102, 47–49. As I explained, evaluating for "compelling merits" based on the institution-stage record struck the appropriate balance for these competing dynamics. That VLSI would have preferred a different result does not demonstrate error in the equitable remedies I provided in my Decision to directly address OpenSky's abusive conduct.

VLSI also states that my Decision found "that OpenSky 'abused the IPR process by filing this IPR' by improperly 'cop[ying] a previously denied petition.'" Req. Recon. 3. As I made clear in my Decision, the practice of filing a "copycat" petition "has not been held to be improper any more than copying claims to invoke interference proceedings, which have likewise not been found to be improper." Dec. 9 n.5. Indeed, because Intel's original petition here had been denied based on the policy set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential), and that denial was based on an aggressive and ultimately inaccurate trial date, there is nothing inherently wrong with the copycat petition itself. My findings as to misconduct relate to how that copycat petition was used including, importantly, OpenSky recycling an expert declaration without engaging the expert to testify in this case. *See* Dec. 42–43.

VLSI's assertion that I erred because "the sanctions are ***not*** to the fullest extent of the Director's power," Req. Recon. 4, misunderstands the situation. I am not required to employ any particular sanction to address a particular situation. My Decision explains why I deemed the sanctions employed to be appropriate for this particular situation, and, conversely, why I considered other possible sanctions (such as immediate termination)

inappropriate. That VLSI would have made the policy choice to use a different sanction here does not demonstrate error in how I exercised my discretion.

Second, VLSI argues, without support, that it is being treated differently than future patent owners. Req. Recon. 5. VLSI also submits that "this case was . . . instituted based on lies." *Id*. Again, this case was instituted based on the well-reasoned analysis of the Board and its finding that "Petitioner has shown a reasonable likelihood of prevailing with respect to at least one claim." Paper 17, 29. VLSI's argument here lacks merit.

Third, VLSI argues that demoting OpenSky is "no sanction from OpenSky's perspective." Req. Recon. 6. As discussed above, the lens through which I issued sanctions was 37 C.F.R. § 42.11(d)(4). I see no basis in VLSI's arguments to revisit my decision to have OpenSky remain in the case while the USPTO and I assess other sanctions. Further, as discussed in my Decision, "[r]emoving OpenSky's control of the IPR removes its ability to leverage that control for or against a particular party." Dec. 47. This is indeed a sanction, as the record demonstrates OpenSky's desire to profit from that leverage.

Fourth, VLSI lacks merit in its assertion that "ordering that Intel remain a party and now be lead petitioner contradicts both the Director's findings and the statutory bar." Req. Recon. 6 (emphasis omitted). VLSI relies on its own speculation that Intel engaged in misconduct. *Id.* at 7. As discussed in my Decision, "there is no evidence that Intel was complicit in OpenSky's abuse." Dec. 48. Further, as made clear above, Intel was not time-barred from joining the petition and the Board presently has no rules or policies that would remove a joined party after institution based on a post-

hoc analysis of the joinder decision. To the extent VLSI raises policy issues, policy considerations are being considered by the USPTO in parallel, but will not be applied in this decision or retroactively.

Fifth, VLSI argues that the compelling merits test cannot be applied retroactively "to VLSI alone, unlawfully prejudicing VLSI for its reliance on the standards existing at the time of institution." Req. Recon. 8–9. It is unclear how holding the Petition to a higher standard (compelling merits versus reasonable likelihood of prevailing) prejudices VLSI. Contrary to VLSI's argument, applying the reasonable likelihood standard at the time of institution resulted in an instituted trial by the Board. *See* Paper 17, 29–30. Ordering the Board to reconsider the Petition and the original institution decision under the compelling merits standard as a remedy for abuse of process provides VLSI with the possibility of terminating a previously instituted trial, to VLSI's benefit.

***Sixth*,** VLSI's due process argument fares no better. Req. Recon. 11–15. VLSI alleges that due process is lacking because the Decision directs the same Board panel to consider both compelling merits at institution *and* to make a final determination of unpatentability to be issued in a Final Written Decision and "in rapid succession." *Id.* I disagree. It is well established that the same Board panel may properly evaluate both institution — of which the compelling merits analysis is a part — and render a final written decision. The cases on which VLSI relies do not stand for the positions for which VLSI cites them.

VLSI relies on *Ethicon Endo-Surgery, Inc. v. Covidien LP*, 812 F.3d 1023 (Fed. Cir. 2016) and *Withrow v. Larkin*, 421 U.S. 35 (1975) (cited in *Ethicon*). Req. Recon. 13–15. *Ethicon* involved an appeal of an IPR

decision to the Federal Circuit in which Ethicon "challenged the final decision of the Board, arguing that the final decision should be set aside because it was made by the same panel that made the decision to institute inter partes review." *Ethicon*, 812 F.3d at 1028. The Federal Circuit disagreed with Ethicon and concluded that "where, as here, there are no other separate procedural-fairness infirmities alleged, the PTO's assignment of the institution and final decisions to one panel of the Board does not violate the due process under governing Supreme Court precedent." *Id*. at 1029. The Federal Circuit made it clear that, "[i]n fact, '[t]he Supreme Court has never held a system of combined functions to be a violation of due process, and it has upheld several such systems.'" *Id*. (citation omitted).

The Federal Circuit also directly addressed the *Withrow* Supreme Court case on which VLSI relies, distinguishing the case as follows:

> Here, combining the decision to institute with the final decision in a single panel is less problematic than the situation in Withrow. The Board first decides whether a petition demonstrates a likelihood of success on the merits, and, if it does, makes a decision to institute inter partes review. During the merits, the Board decides whether the petition actually succeeds. Both the decision to institute and the final decision are adjudicatory decisions and do not involve combining investigative and/or prosecutorial functions with an adjudicatory function. The inter partes review procedure is directly analogous to a district court determining whether there is "a likelihood of success on the merits" and then later deciding the merits of a case. . . . As *Withrow* also made clear, "pretrial involvements, such as issuing or denying a temporary restraining order or a preliminary injunction" do not "raise any constitutional barrier against the judge's presiding" over the latter trial. *See Withrow*, 421 U.S. at 56.

Ethicon, 812 F.3d at 1030. The Federal Circuit acknowledged that, "as *Withrow* held, adjudicators are afforded a 'presumption of honesty and integrity' and even 'exposure to evidence presented in nonadversary investigative procedures is insufficient to impugn the fairness of [adjudicators] at a later adversary hearing.'" *Id*. (quoting *Withrow*, 421 U.S. at 47, 55).

> As the Court has also made clear, 'opinions held by judges as a result of what they learned in earlier proceedings' are 'not subject to deprecatory characterization as 'bias' or 'prejudice.'" *Id*. (quoting *Liteky v. U.S.*, 510 U.S. 540, 551, 114 S.Ct. 1147 (1994)). . . . To rise to the level of presenting actual bias, the challenger must show that an adjudicator is exposed to unofficial, 'extrajudicial' sources of information. *See Liteky v. U.S.*, 510 U.S. 554, 114 S.Ct. 1147.

Id. at 1030–1031. The Federal Circuit noted that there was no allegation of exposure to extra-judicial information and concluded that "[w]e see no due process concerns in combining the functions of initial decision and final disposition in the same Board panel." *Ethicon*, 812 F.3d at 1030. Instead of supporting VLSI's argument here, *Ethicon* and *Withrow* counsel against the finding VLSI seeks, and confirm that under any reasonable reading of those cases, due process was had.

VLSI's representations about the import of *Williams v. Pennsylvania*, 136 S. Ct. 1899 (2016) are equally afield. VLSI asserts that:

> The fact that the judge "made ***a 'critical' decision" regarding whether the merits of the case meant that it should go forward*** gives rise to an unconstitutionally unacceptable "risk that he 'would be so psychologically wedded' to his previous decision that it would violate the Due Process Clause for him to decide" those merits.

Req. Recon. 12 (quoting 136 S. Ct. at 1906, 1910). VLSI attempts to divorce the "critical decision" test from the facts of the case. *Williams'* holding is limited to cases in which "a judge earlier had a significant, personal involvement as a prosecutor in a critical decision regarding the . . . case." 136 S. Ct. at 1905. The Court explained that "[t]he due process guarantee that 'no man can be a judge in his own case' would have little substance if it did not disqualify a former prosecutor from sitting in judgement of a prosecution in which he or she had made a critical decision." *Id*. at 1906. Contrary to VLSI's representations, nothing in *Williams* suggests anything improper about a judge sitting in judgment of a case in which he or she previously made a critical decision.

Though VLSI seems to admit that *Ethicon* does not support its arguments, it states that *Williams* "calls into question much of *Ethicon*'s reasoning." Paper 106, 13 ("However, *Ethicon* was decided five months before, and so did not have the benefit of, the Supreme Court's decision in *Williams*, which calls into question much of *Ethicon*'s reasoning."). As explained above, it does not.

For the reasons stated above, I deny VLSI's request for reconsideration.

III. ORDER

It is hereby:

ORDERED that the Request for Reconsideration is DENIED.

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Paper No. 121
Date: December 22, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE OFFICE OF THE UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

OPENSKY INDUSTRIES, LLC,
INTEL CORPORATION,
Petitioners,

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064[1]
Patent 7,725,759 B2

Before KATHERINE K. VIDAL, *Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office*.

DECISION
Denying Request for Rehearing, Affirming Decision on Remand,
Dismissing Petitioner OpenSky Industries, LLC,
Ordering Patent Owner to Show Cause, and Lifting Stay

[1] Intel Corporation ("Intel"), which filed a petition in IPR2022-00366, has been joined as a party to this proceeding.

I. INTRODUCTION

On October 4, 2022, I issued a Director review decision (Paper 102, "Decision") determining that Petitioner OpenSky Industries, LLC ("OpenSky") abused the *inter partes* review ("IPR") process by filing an IPR petition in an attempt to extract payment from Patent Owner VLSI Technology LLC ("VLSI") and joined Petitioner Intel Corporation ("Intel"), and by expressing a willingness to abuse the process in order to do so. *OpenSky Indus., LLC v. VLSI Tech. LLC*, IPR2021-01064, Paper 102, 3 (PTAB Oct. 4, 2022). I sanctioned OpenSky by precluding OpenSky from actively participating in the underlying proceeding, and I elevated Intel to the role of lead petitioner, pending further review of the merits of the Petition. *Id.* at 47.

II. DISMISSAL OF OPENSKY UNDER 37 C.F.R. § 41.12(B)(8)

In the Decision, I determined that OpenSky, through its counsel, abused the IPR process by filing this petition in an attempt to extract payment from VLSI and joined Petitioner Intel, and expressed a willingness to abuse the process in order to do so. In addition to abusing the IPR process, I further determined that OpenSky engaged in further sanctionable conduct including discovery misconduct, violation of an express order, and unethical conduct. 37 C.F.R. § 42.12(a)(6).

At the time of my Decision, I did not dismiss OpenSky from the proceeding because the issue before me was one of first impression and I needed additional time to determine the appropriate course of action under such extraordinary circumstances. Now having the benefit of additional time to consider this case, as well as *Patent Quality Assurance, LLC, v. VLSI Tech. LLC*, IPR2021-01229, I conclude that the best course of action is to

dismiss OpenSky from this case to ensure that OpenSky does not benefit from its abuse of the IPR process. Accordingly, I dismiss OpenSky from this proceeding, subject to the Director, Board, and USPTO retaining jurisdiction over the issuance of sanctions. *See* 37 C.F.R. § 42.12(b)(8).

III. SHOW CAUSE FOR FAILURE TO COMPLY WITH 37 C.F.R § 42.11

In its Rehearing Request (Paper 113 ("Rehearing Request" or "Req. Reh'g")), VLSI advances several arguments as to the Board panel's compelling merits determination in its Remand Decision (Paper 107 ("Remand Decision")). Specifically, VLSI argues that the Remand Decision is inconsistent with the Board's Institution Decision (Paper 17 ("Institution Decision")), ignores factual issues identified by the Institution Decision, and relies on inadmissible hearsay. *See generally* Req. Reh'g. I am not persuaded by these arguments for the reasons I detail below, and furthermore I admonish VLSI and its counsel for supporting their arguments with misleading statements of law and fact in contravention of their obligations under 37 C.F.R. § 11.303 (Candor Toward the Tribunal) ("A practitioner shall not knowingly: (1) Make a false statement of fact or law to a tribunal or fail to correct a false statement of material fact or law previously made to the tribunal by the practitioner. . . ."); 37 C.F.R. § 42.11(a), (c). This is not the first time VLSI has made misleading statements of law or fact in an attempt to mislead me or the Board.[2]

[2] From VLSI's initial appearance, VLSI misrepresented the Federal Circuit's case law on secondary indicia of obviousness. *See* Prelim. Resp. 69–70 ("Significant for our purposes, both the Federal Circuit and the Board have relied upon an infringement verdict to find objective indicia of non-

For this reason, VLSI is ordered to show cause as to why it should not be ordered to pay Intel the reasonable attorney fees they incurred responding to VLSI's Rehearing Request. 37 C.F.R. § 42.11(d)(3) ("On its own, the Board may order an attorney, registered practitioner, or party to show cause why conduct specifically described in the order has not violated paragraph (c) of this section and why a specific sanction authorized by the Board should not be imposed."). While I recognize the amount of these fees may not be significant, I want to make clear to the parties and the public that we will hold attorneys and parties accountable for the ethical obligations they owe to the Board.

Within two weeks of this Decision, VLSI and Intel shall each file a 5-page paper addressing whether an award of attorney fees is appropriate as a sanction for VLSI's misleading statements of law and fact. Intel shall also identify its attorney fees incurred in responding to VLSI's Rehearing Request and may submit such evidence as necessary to support that identification. Within one week of the filing of such papers, VLSI and Intel may each file a 3-page paper in response.

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obviousness, such as commercial success."). Further, in Patent Owner's Request for Reconsideration of my October 4, 2022 Decision, Paper 106 at 11–15, in arguing that having the same Board panel decide both compelling merits at institution and the final determination on patentability in the final written decision violated the Due Process Clause, VLSI misrepresented the holdings of the Federal Circuit and Supreme Court cases it cited. *See* Order Denying Request for Reconsideration, Paper 114 at 7–10 ("The cases on which VLSI relies do not stand for the positions for which VLSI cites them.").

IV. COMPELLING MERITS

In the Decision, I also remanded the underlying proceeding to the Board to determine whether OpenSky's IPR Petition, based only on the record before the Board prior to institution, presented a compelling, meritorious challenge. *Id.* at 49. On October 14, 2022, the Board issued a Remand Decision concluding that the Petition presented a compelling, meritorious challenge. *See* Remand Decision. Given the unusual and complex nature of this case, I then ordered Director review of the Board panel's Remand Decision on the issue of compelling merits. Paper 108. With my authorization, VLSI filed a Rehearing Request of the Board panel's Remand Decision (Req. Reh'g) and Intel filed a response (Paper 115 ("Intel's Response" or "Response")).

I have reviewed the record as it stood before institution and have considered VLSI's Rehearing Request and Intel's Response. I discern no error in the Board's Remand Decision and, in particular, find the Petition's evidence and the Board's reasoning as to the ground based on Chen and Terrell to be compelling.[3] *See* Pet. 40–60; Remand Decision 8–11. I also reviewed the Board's Institution Decision, and I agree with the Board's findings and conclusions in both the Institution Decision and the recent Remand Decision as they relate to the grounds based on the combination of Chen and Terrell. For the reasons stated in the Institution Decision (Institution Decision 3–4, 22–29) and the Remand Decision (Remand Decision 8–11), and as further discussed below, I determine the combination

[3] Because I find the merits in the ground based on Chen and Terrell to be compelling, I do not reach any of VLSI's arguments specific to other grounds.

of Chen and Terrell, as presented in the Petition, presents a compelling, meritorious challenge based on the record prior to institution.

VLSI's principal argument is that the Remand Decision is inconsistent with the Institution Decision. Specifically, VLSI contends that the "Panel found that these grounds had a 'reasonable likelihood of success' and were 'adequate,' but found 'reasonable questions' and 'risk[s]' relevant to their strength.'" Req. Reh'g 1–3 (citing Institution Decision, 6, 20–21, 26–27, 29). VLSI argues that the Board's Remand Decision represents a shift in the panel's position without an explanation of its reasoning because the Board "never even suggested that it found their strength noteworthy in any way, or any more than 'adequate.'" *Id.* at 1–2 (citing Institution Decision 6, 20–21, 26–27, 29).

Much of VLSI's argument rests on the Board's finding that Petitioner's evidence was "adequate" to establish a reasonable likelihood of success in proving unpatentability. *See* Req. Reh'g 1–5. VLSI argues that the Board's compelling merits finding evidences an inconsistency rising to the level of an Administrative Procedure Act ("APA") violation, noting that "[t]he [Institution Decision] found Petitioner's grounds merely 'adequate,' not 'compelling.'" *Id.* at 1–3. VLSI's argument lacks merit.

When instituting a trial, the Board is required to determine whether "the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). I commend the Board for not opining on the strength of the merits in its Institution Decision other than to say that the petition met the reasonable likelihood standard required for

institution. VLSI suggests that the Board, by making the assessment it was legally required to make and not opining further, implied that the evidence relied upon in the Institution Decision could not also meet the compelling merits standard — a standard not yet articulated at the time of the Institution Decision. That suggestion requires an unjustified leap that I am unwilling to take.

VLSI mischaracterizes the Institution Decision's statements regarding factual issues appropriate for trial. *See* Req. Reh'g 4–5, 9. For example, VLSI asserts that the Institution Decision found that "Patent Owner has raised ***reasonable*** questions regarding Chen's operation." *Id*. at 4 (quoting Institution Decision 24–26) (emphasis added by VLSI). VLSI's assertions fail to describe the full context of the Board's analysis and omit key language from the cited quote. The Board actually states that "[w]hile Patent Owner has raised reasonable questions regarding Chen's operation, ***at most*** *those questions identify factual issues appropriate for resolution through trial*." Institution Decision 26 (emphasis added). Further, just prior to that statement in the Institution Decision, in contrast to VLSI's characterization, the Board stated that VLSI had failed to fully explain their argument. Institution Decision 26 ("Patent Owner does not explain the distinction or why that would be the case."). In yet another example, VLSI wrongly asserts that the Institution Decision "found the record 'unclear'" (Req. Reh'g 5 (quoting Institution Decision 26)). To the contrary, the Board was making it quite clear that VLSI's argument was implausible: "It is unclear, however, what providing a clock frequency to a device would do besides control its frequency." Institution Decision 25–26.

Similarly, VLSI contends that the Remand Decision ignores arguments regarding the combination of Chen and Terrell that the Institution Decision indicates raise a factual dispute appropriate for trial. Req. Reh'g 9 (citing Institution Decision 28–29 ("At trial, the parties will be able to support their contrary views.")). Again, VLSI's characterization is misleading because the Board clearly states that "[w]e do not agree with Patent Owner that Terrell's approach is incompatible with Chen's," and that "Petitioner has adequately justified the combination." Institution Decision 27.

Next, VLSI argues that the Remand Decision improperly relies on Dr. Jacob's testimony, which VLSI contends is hearsay. Req. Reh'g 5–7 (citing Remand Decision 7, 10). I am not persuaded. Contrary to VLSI's arguments, the Board regularly considers sworn declarations in lieu of live testimony.[4] Moreover, the Remand Decision made it clear that "the record prior to institution shows that it was highly likely Petitioner would prevail because its contentions were supported by the prior art's disclosures ***even without supporting expert testimony***." Remand Decision 9 (emphasis added).

VLSI also argues that the Remand Decision overlooks evidence of objective indicia of nonobviousness when addressing the required "nexus" with the challenged claims. Req. Reh'g 10 (citing Prelim. Resp. 69–71

[4] *See Grunenthal Gmbh v. Antecip Bioventures II LLC*, PGR2018-00062, Paper 32 at 15 (PTAB Oct. 29, 2019) (""Without exception, the Board accepts … sworn witness declarations in lieu of live testimony in administrative patent trials."); *Johns Manville Corp. v. Knauf Insulation, Inc.*, IPR2016-00130, Paper 35 at 19, 22–23 (PTAB May 8, 2017) (finding declarations not hearsay in IPR, where "direct testimony is typically provided via affidavit, with cross-examination taken via deposition").

("Preliminary Response" or "Prelim. Resp.")). VLSI states that the Preliminary Response "literally includes ***pages*** of such argument addressing whether this evidence has a 'nexus' with the claims." *Id.* Though the Board must consider and properly weigh objective indicia of non-obviousness, the Board is not required to elevate form over substance. In VLSI's pages of argument, VLSI misrepresents Federal Circuit case law. VLSI repeats those misrepresentations in its Rehearing Request, stating that: "the Federal Circuit and the Board have . . .[found] ***nexus*** based upon [a] jury verdict of infringement." Prelim. Resp. 69–71; Req. Reh'g 10. None of the Federal Circuit decisions VLSI cites hold as much. *See, e.g.*, *Brown & Williamson Tobacco Corp. v. Phillip Morris, Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000); *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1337 (Fed. Cir. 2016).

VLSI cites to a non-precedential Board decision — *RTI Surgical, Inc. v. LifeNet Health*, IPR2019-00571, Paper 75, 46–47 (PTAB Aug. 4, 2020) — for the same proposition. However, in *RTI Surgical*, although the Board mentions the jury verdict, the Board nowhere says that the verdict itself is evidence of nexus. Instead, the Board principally relies on expert testimony, documentary product information, and claim charts as evidence establishing a nexus to the claimed invention. *Id.*

Of course, the Board can — and should — consider any evidence of commercial success and nexus in its Final Written Decision, based on the complete trial record.

None of VLSI's other arguments in its Rehearing Request fare any better.

For the reasons stated above, I deny VLSI's request for rehearing and affirm the Board's finding of compelling merits.

V. ORDER

For the foregoing reasons, it is hereby:

ORDERED that VLSI's Rehearing Request is DENIED;

FURTHER ORDERED that the Board's finding of compelling merits based on the record before the Board prior to institution is AFFIRMED;

FURTHER ORDERED that OpenSky is dismissed from the proceeding, subject to the Director, Board, and USPTO retaining jurisdiction over OpenSky on the issue of sanctions;

FURTHER ORDERED that the stay in the underlying proceeding is lifted; and

FURTHER ORDERED that within two weeks of this Decision, VLSI and Intel shall each file a 5-page paper addressing whether an award of attorney fees is appropriate. Intel shall also identify its attorney fees incurred in responding to VLSI's Rehearing Request and may submit such evidence as necessary to support that identification.

FURTHER ORDERED that within one week of the filing of such papers, VLSI and Intel may each file a 3-page paper in response.

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Paper 127
Dated: February 3, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE OFFICE OF THE UNDER SECRETARY OF COMMERCE
FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE
UNITED STATES PATENT AND TRADEMARK OFFICE

OPENSKY INDUSTRIES, LLC,
INTEL CORPORATION,
Petitioners,

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064[1]
Patent 7,725,759 B2

Before KATHERINE K. VIDAL, *Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office*.

ORDER
Restoring OpenSky as a Party
Awarding Reasonable Fees as Sanctions Against Petitioner
Authorizing Patent Owner to File Motion for Fees

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[1] Intel Corporation ("Intel"), which filed a petition in IPR2022-00366, has been joined as a party to this proceeding. Paper 43.

I. INTRODUCTION

On October 4, 2022, I issued my decision on Director review of the institution decision in this proceeding. Paper 102 ("Decision" or "Dec."). In my Decision, I determined that Petitioner OpenSky Industries, LLC ("OpenSky") abused the *inter partes* review ("IPR") process in an attempt to extract payment from both Patent Owner VLSI Technology LLC ("VLSI") and Petitioner Intel, who was joined to the proceeding. *Id.* at 3. I also determined that OpenSky engaged in discovery misconduct and unethical conduct, and violated my express orders in the Director review process. *Id.* at 2–4. Due to OpenSky's actions, I ordered "OpenSky to show cause as to why it should not be ordered to pay compensatory damages to VLSI, including attorney fees, to compensate VLSI for its time and effort in this proceeding." *Id.* at 4. I further ordered "OpenSky to address the appropriate time period for which any fees should be assessed." *Id.*

On November 17, 2022, OpenSky and VLSI submitted briefs pursuant to my order to show cause. Paper 116 (OpenSky); Paper 117 (VLSI). The parties submitted reply briefs on December 5, 2022. Paper 119 (VLSI); Paper 120 (OpenSky). For the reasons set forth below, I determine that it is appropriate to award attorney fees to VLSI for the time spent addressing OpenSky's abusive behavior, including the Director review process in its entirety. I do not award attorney fees for responding to the merits of the case, as I have determined that compelling merits were presented in the Petition. *See* Paper 121.

II. RESTORING OPENSKY TO THE PROCEEDING

I previously dismissed OpenSky from this proceeding, subject to the Director, Board, and USPTO retaining authority over the issuance of sanctions. *See* Paper 121, 2–3. In IPR2021-01229, an ongoing proceeding challenging another patent owned by VLSI, I restored dismissed petitioner Patent Quality Assurance, LLC to the proceeding. *See Patent Quality Assurance, LLC v. VLSI Technology LLC*, IPR2021-01229, Paper 108, 4 (PTAB Jan. 27, 2023). Similarly, I vacate the portion of my decision (Paper 121) dismissing OpenSky from this proceeding. This restores OpenSky as a petitioner in this proceeding.

III. SANCTIONS ANALYSIS

OpenSky argues that: (1) it cannot and should not be subject to any attorney fees sanction in this proceeding; (2) the order to show cause does not show any harm to VLSI due to OpenSky's misconduct; and (3) compensatory fees, if any, must be limited to specific time periods during the proceeding. Paper 116, 1, 23–24. I disagree with the first two arguments and address the proper assessment of fees below.

A. OpenSky Is Subject to Attorney Fees in This IPR

OpenSky raises a number of arguments as to why it cannot and should not be subject to an attorney fees sanction. Paper 116, 7–23. First, OpenSky argues that under the "American Rule," each litigant pays their own fees unless otherwise provided by statute. *Id.* at 7–11 (citing *Peter v. NantKwest*, 140 S. Ct. 365, 370 (2019)). OpenSky argues that no statute authorizes attorney fees during an IPR proceeding. *Id.* at 8–9. OpenSky further argues that the relevant statute regulating the conduct of IPRs (35 U.S.C. § 316(a))

"specifically delegates to the Director authority to 'prescribe sanctions for abuse of discovery, abuse of process, or any other improper use of the proceeding,' but does not mention attorneys' fees." *Id.* at 9.

OpenSky incorrectly refers to my order as "fee shifting." *Id.* at 8. The order to show cause is not directed to fee shifting; it is a sanction order. *Cf. Chambers v. NASCO, Inc.*, 501 U.S. 32, 45–46 (1991) (stating that an exception to the American Rule is "when a party has 'acted in bad faith, vexatiously, wantonly, or for oppressive reasons.'") (quoting *Alyeska Pipeline Service Co. v. Wilderness Society*, 421 U.S. 240, 259 (1975)). The fees are commensurate with the harm caused by OpenSky's abuse. *Id.* at 53 ("'[t]he award of attorney's fees for bad faith serves the same purpose as a remedial fine . . .'" (quoting *Hutto v. Finney*, 437 U.S. 678, 691 (1978)). It is not intended to reward VLSI as a prevailing party, as OpenSky seems to imply, but to punish OpenSky for its abusive conduct. *Cf. id.* ("the imposition of sanctions . . . depends not on which party wins the lawsuit, but on how the parties conduct themselves during the litigation.")

By awarding attorney fees, I am acting pursuant to express statutory and regulatory authority. *See* 35 U.S.C § 316(a)(6); 37 C.F.R. § 42.12. 35 U.S.C. § 316 directly empowers the Director to prescribe regulations setting forth sanctions for abuse of discovery, abuse of process, or any other improper use of the proceeding. 35 U.S.C. § 316(a)(6); *see* Paper 119, 1–2. Acting pursuant to that authority, the United States Patent and Trademark Office ("USPTO" or "Office") promulgated Rule 42.12, which expressly authorizes the Patent Trial and Appeal Board ("PTAB" or "Board") to issue sanctions to punish and deter a wide range of misconduct. 37 C.F.R. § 42.12. Those sanctions include, among others, an award of "compensatory

expenses, including attorney fees." 37 C.F.R. § 42.12(b)(6). The Court of Appeals for the Federal Circuit has recognized this regulatory power to award attorney fees as a "means for regulating litigation misconduct." *See Amneal Pharmaceuticals LLC v. Almirall, LLC*, 960 F.3d 1368, 1372 n.* (Fed. Cir. 2020) ("§ 42.12 allows the Board to impose sanctions including 'attorney fees'"). Accordingly, there is both statutory and regulatory authority to apply attorney fees as a sanction in this case. *See also Apple Inc. v. Voip-Pal.com, Inc.*, 976 F.3d 1316, 1323 (Fed. Cir. 2020) (affirming the Board's sanction under § 42.12 and noting that it has the ability to "issue sanctions not explicitly provided in the regulation.").

In its second argument as to why it cannot and should not be subject to an attorney fees sanction, OpenSky argues that it was denied due process required by the Constitution and the Administrative Procedure Act. Paper 116, 12–16. OpenSky argues that it did not receive notice that the Director review would consider abuse of process as a legal issue, and did not receive notice of the factual basis for the abuse of process charge. *Id.* at 12–14. More specifically, OpenSky argues that it was not provided with "standards of what constituted abuse of process and meaningful opportunity to respond to the serious allegation that it had committed an abuse of process during the IPR proceeding." *Id.* at 13. Additionally, OpenSky argues that it "was never apprised that the Director believed . . . that the filing of the IPR Petition would be an abuse of process because of 'bad' motivation, that OpenSky was being accused of extracting payments from multiple parties, or that there was a charge of a lack of willingness to participate in the IPR." *Id.* at 14 (citing Dec. 3, 43–44). Finally, OpenSky argues that because the Director review Scheduling Order precluded new declaratory evidence,

OpenSky was deprived of a fair opportunity to submit evidence in its defense. *See id*. at 15–16 (citing Paper 47, 8, 11).

OpenSky's argument as to lack of notice and opportunity to respond is unavailing. *See* Paper 116, 12–16. My Scheduling Order unambiguously explained that I would be investigating VLSI's claims of abuse of process by OpenSky. *See* Paper 47, 7–8. My interrogatories specifically asked, "[d]oes the evidence in this proceeding demonstrate an abuse of process or conduct that otherwise thwarts, as opposed to advances, the goals of the Office and/or the [America Invents Act] and, if so, which evidence and how should that evidence be weighted and addressed?" *Id*. at 8. OpenSky responded to this interrogatory by citing a single piece of evidence already of record (Ex. 2055), and offered no other supporting evidence. *See* Dec. 23.

Although my Scheduling Order did not permit new declaratory evidence, OpenSky did not request permission to file such evidence or raise an objection to the absence of new declaratory evidence, despite several opportunities to do so. *See* Papers 51 (Two-week extension to exchange Mandated Discovery), 52 (Addressing the scope of Mandated Discovery), 54 (OpenSky's Notice of Objections that did not object to the exclusion of new declaratory evidence). Not only did OpenSky not request permission to file new declaratory evidence, it also failed to produce responsive evidence that was already in its possession. *See* Dec. 21–25 (OpenSky failed to produce numerous communications between itself and VLSI or Intel). Accordingly, OpenSky was provided notice and opportunity to respond to VLSI's allegations of abuse of process, and I made my decision on Director review based on the briefs and evidence presented by the parties. *See Rates Tech., Inc. v. Mediatrix Telecom, Inc.*, 688 F.3d 742, 749 (Fed. Cir. 2012) ("[T]he

opportunity to submit written briefs may be sufficient to provide an opportunity to be heard.").

In its third argument as to why it cannot and should not be subject to an attorney fees sanction, OpenSky argues that the Decision "erred by applying a negative inference across the board without any plausible evidence that the allegedly missing documents had information relevant to the inferences made." Paper 116, 17. Specifically, OpenSky argues that "a negative or adverse inference based on the lack of production requires a showing . . . that the missing documents actually exist." *Id.* at 16 (citing *Klotzbach-Piper v. Nat'l R.R. Passenger Corp.*, No. 18-1702, 2021 WL 4033071, at *7 (D.D.C. Sept. 3, 2021)). OpenSky further argues that the Decision ruled on OpenSky's objection to providing a privilege log without giving OpenSky an opportunity to cure. *Id.* OpenSky argues that the lack of opportunity to cure is contrary to previous USPTO practices. *Id.* at 17–18 (citing *Ventex Co. Ltd. v. Columbia Sportswear No. Am., Inc.*, IPR2017-00651, Paper 98 at 5 (PTAB Nov. 19, 2018)).

OpenSky's arguments against the adverse inferences taken in my Decision fail for several reasons. First, OpenSky filed its objections to the Mandated Discovery on the day it was due, despite having had the opportunity to object previously. *See* Paper 54. Thus, OpenSky's late objection eliminated any period for curing. Second, and more importantly, OpenSky indicated that it did not intend to produce a privilege log *regardless* of any ruling on its objections. *See* Paper 91, 20. Third, at least some of the missing documents existed, as they were produced by VLSI and Intel. *See* Dec. 40–42. Finally, I specifically warned OpenSky that I might draw adverse inferences based on the failure to comply with my order. *See*

Paper 52, 4. Despite that explicit warning, OpenSky chose noncompliance. *See* Dec. 19–25. For at least these reasons, OpenSky's arguments are unavailing.

B. OpenSky's Misconduct Harmed VLSI

OpenSky separately argues that its misconduct did not harm VLSI, and, therefore, attorney fees are not an appropriate sanction. Paper 116, 18–23. First, OpenSky argues that the *Noerr-Pennington* doctrine precludes "awarding attorney's fees to compensate VLSI for defending against OpenSky's compelling, meritorious IPR challenge." *Id.* at 18–20. OpenSky argues that because the Petition itself was not "objectively baseless," there should be no sanctions, despite its "impermissible motive." *Id.* at 20 (citing *BE&K Construction Co. v. National Labor Relations Board*, 536 U.S. 516, 519–20, 522, 524, 536 (2002)). OpenSky then broadly argues that "[m]onetary sanctions cannot be levied against a party who files a meritorious IPR Petition (even if it had a profit motive)." Paper 120, 6–7.

OpenSky's argument for blanket immunity from sanctions for filing a meritorious Petition mischaracterizes the nature of the sanctions and would negate the purpose of imposing sanctions for misconduct before the Board as expressly provided in 35 U.S.C. § 316(a)(6). As an initial matter, OpenSky's argument ignores one of the congressional intents that undergirds the America Invents Act ("AIA") itself—"the integrity of the patent system"—which considers interests broader than just patentability. *See* 35 U.S.C. § 316. Accordingly, OpenSky's litigation misconduct cannot be excused simply because the Petition itself, which was substantively prepared by Intel, was meritorious. Case law further supports imposing sanctions for litigation misconduct, despite a meritorious suit. *See BE&K Construction*,

536 U.S. at 537 ("[N]othing in our holding today should be read to question the validity of common litigation sanctions imposed by courts themselves—such as those authorized under Rule 11 of the Federal Rules of Civil Procedure."); *see also* 37 C.F.R. § 42.11(c) (Board counterpart to Rule 11). More importantly, OpenSky's argument for blanket immunity mischaracterizes the basis for these attorney fee sanctions. I am not sanctioning OpenSky based on whether it filed a meritorious Petition. I am imposing sanctions because of the manner in which OpenSky conducted itself after the Petition was filed, as explained further below.

OpenSky contends that its misconduct—offering to undermine the IPR (what it calls "settlement negotiations") and failing to comply with Mandated Discovery—did not harm VLSI. Paper 116, 20–23. VLSI responds that "OpenSky's actions caused extraordinary harm to VLSI, the Office, and the patent system. OpenSky abused the IPR process for the sole purpose of attempting to extort money from VLSI and Intel." Paper 119, 9–10 (citing Dec. 43). More specifically, VLSI argues that "OpenSky's misconduct caused VLSI massive harm by forcing it to spend extraordinary amounts of time and money." Paper 117, 8. As to the damage to the Office and the patent system, VLSI argues that "OpenSky's violation of the Director's orders and its non-responsive and misleading interrogatory responses are alone sufficient to justify a fee award." *Id.* at 10. Accordingly, VLSI argues that "[a]n award of attorneys' fees and costs is necessary to deter future misconduct by OpenSky and its like." *Id.* at 11.

OpenSky responds that:

> If OpenSky had filed the same meritorious IPR Petition, but not as an "attempt to extract payment" and had not sent the February 23 e-mail, VLSI would have incurred the exact same attorneys'

> fees and costs. Those expanded [sic] were not "solely" caused by the misconduct and cannot be awarded as monetary sanctions.

Paper 120, 4.

OpenSky ignores that VLSI raised arguments against OpenSky's misconduct—even apart from its motives in filing its petition—throughout the proceeding and that the entire Director review process was brought about due to that misconduct. *See* Paper 9, 1–29; Paper 16, 1–7; Paper 20, 1–10; Paper 45. My review was not limited solely to OpenSky's intent in filing the Petition, but instead considered whether to revisit the institution decision based on the totality of OpenSky's conduct and a number of factors. *See* Dec. 36–43. As a result, I concluded that OpenSky abused the IPR process. *Id.* at 43–44. As I explained:

> Seeking an AIA trial for the primary purpose of extorting money, while being willing to forego or sabotage the adversarial process, does not comport with the purpose and legitimate goals of the AIA and is an abuse of process. Opportunistic uses of AIA proceedings harm the IPR process, patent owners, the Office, and the public. To safeguard the proper functioning of the patent system, and the confidence therein, it is incumbent on me and the USPTO to protect against that harm.

Id. at 44 (internal citations omitted). My conclusion and related sanctions were based on the totality of OpenSky's conduct. That its intent informed my analysis does not make its intent the basis of these sanctions. Instead, it was just one of many factors that I considered in reaching my decision to impose sanctions for OpenSky's behavior in this proceeding. *See* Dec. 36–43. But even if I were to set aside OpenSky's improper motive in filing its petition to institute this IPR, I would reach the same decision based solely on

its misconduct revealed and committed in the course of my review of that institution decision.

In addition, OpenSky's failure to comply with Mandated Discovery further harmed VLSI during the Director review. I explained that "[a]s a result of OpenSky's failure to comply with my ordered Mandated Discovery provisions, I, VLSI, and Intel do not have a complete record to fully examine OpenSky's assertion that it has not committed an abuse of the IPR process, or to evaluate whether its allegation of 'harassment' is supported." *Id*. at 27.

OpenSky further seeks to excuse its discovery misconduct by arguing that the Director review is "ancillary to the Board's consideration of the Petition on its merits" and "[a]ttorneys' fee recoveries are not permitted for ancillary litigation, such as the process of sanctioning." Paper 116, 22 (citing *Cooter & Gell v. Hartmarx Corp.*, 496 U.S. 384, 407 (1990)). Contrary to OpenSky's argument, the Director review process is not ancillary to the IPR process; it is an exercise of the Director's unilateral authority over the institution phase of that process. The Court in *Cooter*, cited by OpenSky, determined that Rule 11 sanctions were limited to actions at the trial level and did not apply to expenses incurred defending the award on appeal, because Federal Rule of Appellate Procedure 38 separately provided for appellate fees. *See* 496 U.S. at 407. *Cooter* is inapposite because it addressed successive phases of litigation, before separate levels of Article III courts, governed by different sets of federal rules. Here, Director review regarding whether to reverse the initial institution decision is central to the IPR process, as well as to investigating whether allegations of misconduct warrant such a reversal.

C. OpenSky's Misconduct Took Place Throughout the Proceeding and Was the Basis for Director Review

OpenSky argues that "sanctions must be tied to harm 'solely' caused by the misconduct and may not be based on temporal limitations alone." Paper 116, 23–24 (citing *Goodyear Tire & Rubber Co. v. Haeger*, 137 S. Ct. 1178, 1184 (2017)). OpenSky identifies two specific periods of misconduct identified by the Decision. *Id.* at 24–25. The first is the nine-day period starting with the February 23, 2022, email from OpenSky's counsel to VLSI's counsel (Ex. 2055) and ending with VLSI's rejection of OpenSky's offer on March 2, 2022 (Ex. 2094). *Id.* at 24. The second is the "sixty-one-day period between when the Mandated Discovery was due and when the Director issued sanctions precluding OpenSky from further participating in the IPR: from August 4, 2022 to October 4, 2022." *Id.* (citing Paper 51, 4; Paper 102, 4).

As discussed above, OpenSky's misconduct was not so limited. *See supra*. Indeed, VLSI raised objections to OpenSky's misconduct throughout the proceeding. *See* Paper 9, 1–29; Paper 16, 1–7; Paper 20, 1–10; Paper 45; *see also Monolithic Power Sys., Inc. v. O2 Micro Int'l Ltd.*, 726 F.3d 1359, 1369 (Fed. Cir. 2013) ("[T]he litigation misconduct finding by the district court was not of isolated instances of unprofessional behavior by O2 Micro. Rather, O2 Micro's extensive misconduct was enough to comprise an abusive 'pattern' or a vexatious 'strategy' that was 'pervasive' enough to infect the entire litigation."). And the Director review process was initiated to examine OpenSky's misconduct and determine whether to reverse the institution decision. *See* Paper 47. But for OpenSky's misconduct, VLSI

would not have incurred the fees necessary to address OpenSky's misconduct in the case and upon Director review.

Accordingly, I determine that the appropriate sanction is for OpenSky to compensate VLSI for the reasonable attorney fees incurred in addressing the issue of OpenSky's misconduct during the proceeding, and for the Director review process in its entirety. I authorize VLSI to file a Motion for Fees that includes specific information as to the total amount of fees requested, details regarding the tasks performed underlying those fees, and reasons why the amounts of those fees are reasonable. Any privileged information may be redacted from billing information submitted with the Motion. The Motion must be filed no later than two weeks after the entry of this Decision and is limited to twenty pages. Detailed billing statements may be filed as exhibits to the Motion and excluded from the page limit. OpenSky is authorized to file an Opposition to the specific fees requested that is limited to twenty pages and must be filed no later than two weeks after the date on which VLSI files its Motion. The same parameters regarding privileged information and exhibits provided for VLSI's Motion apply to any filed Opposition.

D. Sanctions Are Limited to This Proceeding

VLSI also seeks attorney fees as they relate to all three IPRs filed by OpenSky (i.e., IPR2021-01056, IPR2021-01064, and IPR2022-00645) and the IPRs with requests to join OpenSky's -1064 Petition (i.e., IPR2022-00366 (Intel) and IPR2022-00480 (Patent Quality Assurance, LLC ("PQA"))). Paper 117, 13. VLSI argues "[b]ut for OpenSky's filings and the PQA IPR it potentially inspired, Intel would not have been able to file

joinder petitions and attack VLSI's patents yet again nor could PQA have sought to join the present IPR." *Id.*

As discussed above, I distinguish the merits of this proceeding from the misconduct of OpenSky. *See supra*. This distinction between the merits and misconduct applies to the joinder requests. For example, IPR2022-00366 deals entirely with the merits, and there is no evidence of misconduct by Intel. *See* IPR2021-01064, Paper 43. Rather, Intel appears to be another target of OpenSky's misconduct. *See* Dec. 48. Accordingly, fees relating to IPR2022-00366 are not included in this sanction. I apply the same analysis to IPR2022-00480 (now terminated) in which PQA sought to join this IPR on the merits. *See* IPR2022-00480 Papers 2, 3. PQA's alleged misconduct in IPR2021-01229 is the subject of a different Director review. *See* IPR2021-01229, Paper 31. Accordingly, fees relating to IPR2022-00480 also are not included in this sanction.

OpenSky's other two Petitions may raise misconduct issues similar to this case. For example, in IPR2021-01056 (institution denied), OpenSky's failure to engage the expert on whom its petition relied may suggest that OpenSky was attempting to file a petition with the lowest possible cost in an effort to generate leverage against VLSI, but without the intent or expectation of litigating the proceeding through trial. *See* Dec. 43. OpenSky's Petition in IPR2022-00645 was dismissed before institution. *See* IPR2022-00645, Paper 13. Nevertheless, neither of these cases was raised in the Director review, and thus I exercise my discretion to limit the sanctions order to this proceeding.

E. Sanctions Are Assessed Against OpenSky

VLSI argues that "OpenSky's attorneys were directly responsible for OpenSky's misconduct and should be found jointly and severally liable with OpenSky for VLSI's fees and costs." Paper 117, 15. VLSI argues that "[c]ourts have routinely held a party's attorneys jointly and severally liable for the sanctionable conduct of their clients when they have assisted in advancing the sanctionable conduct." *Id.* at 16–17. VLSI further argues that OpenSky's attorneys repeatedly misrepresented OpenSky's motives, conducted OpenSky's improper negotiations with VLSI and Intel, and blocked inquiries into the true relationship between OpenSky and its counsel. *Id.* at 17–20.

At this time, I decline to resolve VLSI's request to hold OpenSky's attorneys "jointly and severally liable" for VLSI's attorney fees. The Board's authority extends to both "a party," 37 C.F.R. § 42.12(a), and to "individuals involved in the proceeding," *Id.*, § 42.11(a). The latter "individuals" expressly includes "any attorney [or] registered practitioner" appearing before it. *Id.*, § 42.11(d). Consistent with that regulation, the Director review process examined OpenSky's misconduct as a party to the proceeding. *See* Paper 47, 7–9. I did not examine, however, whether OpenSky's counsel individually committed misconduct, and I reserve judgment on that issue. *See* Dec. 4. Accordingly, I decline to sanction OpenSky's counsel individually at this time.

IV. ORDER

Accordingly, based on the foregoing, it is:

ORDERED that OpenSky is restored as a petitioner;

FURTHER ORDERED that VLSI is awarded reasonable fees incurred in this proceeding in raising issues of misconduct by OpenSky before the Board, and the Director review process in its entirety;

FURTHER ORDERED that VLSI is authorized to file a Motion for Fees, in accordance with my instructions herein. Any such Motion must be filed no later than two weeks after the entry date of this Order and is limited to twenty pages;

FURTHER ORDERED that OpenSky is authorized to file an Opposition to VLSI's Motion for Fees. Any Opposition must be filed no later than two weeks after the date on which VLSI files it Motion, and is limited to twenty pages.

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Paper No. 128
Date: February 15, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,
OPENSKY INDUSTRIES, LLC
Petitioners,*

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064
Patent 7,725,759 B2

Before THOMAS L. GIANNETTI, BRIAN J. MCNAMARA, and JASON W. MELVIN, *Administrative Patent Judges*.

MELVIN, *Administrative Patent Judge*.

DECISION
Denying Patent Owner's Request on Rehearing of Institution Decision and Grant of Joinder
37 C.F.R. § 42.71(d)

* Intel Corporation, which filed a petition in IPR2022-00366, has been joined as a party to this proceeding. Paper 43.

I. INTRODUCTION

We instituted review of claims 1, 14, 17, 18, 21, 22, and 24 ("the challenged claims") of U.S. Patent No. 7,725,759 B2 (Ex. 1001, "the '759 patent"), pursuant to a Petition (Paper 2, "Pet.") filed by OpenSky Industries, LLC. Paper 17 ("Institution Decision").

Patent Owner requested rehearing and Precedential Opinion Panel (POP) review of our Institution Decision. Paper 20. The Director initiated review of our Institution Decision (Paper 41) and dismissed Patent Owner's request for rehearing and POP review (Paper 42).

We granted Intel Corporation's ("Intel's") Motion for Joinder in IPR2022-00366, thus adding Intel as a petitioner here. Paper 43 ("Joinder Decision"). Patent Owner requested rehearing and POP review of our Joinder Decision. Paper 45 ("Req. Reh'g."). The Office denied the POP request, leaving the rehearing request for our consideration. Paper 53 (Order denying POP Request).

Patent Owner requests rehearing on three grounds. First, Patent Owner asserts that we should have not permitted a "time-barred party" (i.e., Intel) to join this proceeding. Req. Reh'g. 10. Second, Patent Owner asserts that the Joinder Decision failed to balance the *Fintiv*[1] factors. *Id.* at 13. Finally, Patent Owner asserts our decision is "at odds with *Apple v. Uniloc*[2] and conflicts with other Board panels." *Id.* at 14–15. For the reasons that follow, we deny the request for rehearing.

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[1] *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) ("*Fintiv*").

[2] *Apple Inc. v. Uniloc 2017 LLC*, IPR2020-00854, Paper 9 (PTAB Oct. 28, 2020) (precedential) ("*Uniloc*").

II. ANALYSIS

Patent Owner argues that joinder should not allow Intel, an otherwise time-barred party, to join a proceeding with grounds the party previously presented for review but were discretionarily denied. Req. Reh'g. 9–13. Patent Owner's argument is not based on statutory prohibitions or other errors of fact or law, but on policy arguments regarding discretionary denial under *Fintiv* and *General Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) (precedential). *See* Req. Reh'g. 10–13. Questions raised by those arguments are best suited for the Director to resolve through POP review or Director review. Patent Owner has already pursued that approach here, to no avail. Paper 53 (Order denying POP Request).

Patent Owner's policy arguments do not present a proper basis for rehearing our Joinder Decision. In evaluating a rehearing request, we look to 37 C.F.R. § 42.71(c), which provides: "When rehearing a decision on petition, a panel will review the decision for an abuse of discretion." We also look to 37 C.F.R. § 42.71(d), which provides: "The request must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, a reply, or a sur-reply." Patent Owner's rehearing request, to the extent it is based on our decision to join a party that, but for the option of joinder, would be time-barred, does not assert that we overlooked or misapprehended anything. Instead, it seeks a change in Office policy, which is not a proper basis for a rehearing request directed to the panel.

Patent Owner submits that our Joinder Decision did not adequately address the *Fintiv* factors. Req. Reh'g. 13–14. On June 21, 2022, the Director issued a Memorandum directed to the Board setting forth an "interim procedure" for addressing discretionary denials of PTAB petitions under *Fintiv*.[3] The June 21, 2022 Memorandum states that "compelling, meritorious challenges will be allowed to proceed at the PTAB even where district court litigation is proceeding in parallel." *Id.* at 4. We have determined that the Petition presented a challenge with compelling merits (Paper 107), which "alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*," June 21, 2022 Memorandum at 5. The Director has reviewed our determination (Paper 108) and agreed that the Petition presented compelling merits (Paper 121, 5–9). Patent Owner's argument that *Fintiv* has been overlooked is, therefore, another disagreement with a policy decision by the Director and not a proper basis for rehearing by the panel.

Patent Owner argues also that the Joinder Decision is "at odds with" *Uniloc*. Req. Reh'g 15. As we have explained, however, the facts here differ significantly from those in *Uniloc*. Joinder Decision at 9. Similarly, we addressed Patent Owner's argument that another Board decision counsels in favor of denying joinder. *Id.* at 10 (discussing *HTC Corp. v. Ancora Techs., Inc.*, IPR2021-00570, Paper 17 at 9–10 (PTAB June 10, 2021)). Patent Owner seeks to reargue positions it made opposing joinder that we rejected, and does not identify how we misapprehended or overlooked its positions.

[3] *Available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

Nothing in Patent Owner's Request for Rehearing warrants reversing our decision.

The remainder of Patent Owner's arguments relate to Director Review. Req. Reh'g. 6–9. These have already been addressed by the Director. Paper 102, 44–50 (remanding for panel to determine whether the Petition presented compelling merits); Paper 108 (ordering Director Review of the Petition's compelling merits); Paper 121, 5–9 (addressing whether the IPR should be terminated as to all parties).

III. CONCLUSION

For the reasons discussed above, we conclude Patent Owner has not shown we misapprehended or overlooked anything in our Joinder Decision or that the Joinder Decision was an abuse of discretion. We therefore deny Patent Owner's Request for Rehearing.

IV. ORDER

Accordingly, it is

ORDERED that Patent Owner's Request for Rehearing is denied.

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Paper No. 132
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,
OPENSKY INDUSTRIES, LLC
Petitioners,[*]

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064
Patent 7,725,759 B2

Before THOMAS L. GIANNETTI, BRIAN J. MCNAMARA, and JASON W. MELVIN, *Administrative Patent Judges*.

MELVIN, *Administrative Patent Judge*.

DECISION
Denying Patent Owner's Motion to Terminate

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[*] Intel Corporation, which filed a petition in IPR2022-00366, has been joined as a party to this proceeding. Paper 43.

I. INTRODUCTION

This proceeding is an *inter partes* review ("IPR") of claims 1, 14, 17, 18, 21, 22, and 24 ("the challenged claims") of U.S. Patent No. 7,725,759 B2 (Ex. 1001, "the '759 patent"). *See* Paper 17 (instituting review). Although the Petition (Paper 2) was filed on June 7, 2021, by OpenSky Industries, LLC, we granted institution of a substantively identical petition filed by Intel Corporation, and granted Intel's motion for joinder to add Intel as a petitioner in this proceeding. Paper 43 (granting institution in IPR2022-00366 and joining Intel here).

Prior to the June 7, 2021, Petition, litigation between VLSI Technology LLC ("Patent Owner") and Intel resulted in a March 2, 2021, jury verdict that Intel had not proven invalidity of claims 14, 17, 18, and 24 of the '759 patent. *VLSI Technology LLC v. Intel Corp.*, 6:21-cv-57 (W.D. Tex.), Ex. 1027, 5. On May 10, 2022, the district court entered final judgment including that Intel had not proven invalidity. Ex. 2110. Based on the district court's final judgment, Patent Owner asserts that claim preclusion bars Intel from challenging the claims of the '759 patent in this IPR. Patent Owner therefore seeks termination of the IPR as to Intel. *See* Patent Owner's Motion to Terminate Based on Res Judicata, Paper 99, 1–2 ("PO Mtn. Terminate").

Patent Owner argues that the elements of claim preclusion are met because 1) "Intel and VLSI are parties to both cases;" 2) "the district court entered a final judgment of infringement, no invalidity," and Intel did not appeal invalidity; and 3) "'the effect of' Intel's challenge is to collaterally attack the First Case's Final Judgment." *Id.* at 11–14. Patent Owner contends that claim preclusion applies also to claims 1 and 21, which were not at issue before the district court. *Id.* at 14–15.

Intel responds that claim preclusion does not apply to IPRs under the America Invents Act (AIA). *See* Petitioner Intel Corp.'s Opposition, Paper 112, 4–

6 ("Intel Opp. Mtn. Terminate"). Intel argues also that IPRs and district-court proceedings do not involve "the same claim or cause of action" because they do not both involve the same accused product and because they present different standards of proof. *Id.* at 6–7. We agree with Intel that estoppel does not apply and therefore we deny the motion. Our reasoning follows.

II. ANALYSIS

A. LEGAL STANDARD

Claim preclusion prevents relitigating issues that were or could have been raised during a first action resulting in a final judgment, when a second action involves the same claim as the first. *Lucky Brand Dungarees v. Marcel Fashions Grp.*, 140 S. Ct. 1589, 1594 (2020). A claim, or cause of action, is considered to be "the same" when it "aris[es] from the same transaction" or "involve[s] a common nucleus of operative facts." *Id.* at 1595 (internal citations omitted). Preclusion operates to prevent a defendant in a first action from raising an issue in a second action "only if (1) the claim or defense asserted in the second action was a compulsory counterclaim that the defendant failed to assert in the first action, or (2) the claim or defense represents what is essentially a collateral attack on the first judgment." *Nasalok Coating Corp. v. Nylok Corp.*, 522 F.3d 1320, 1323–24 (Fed. Cir. 2008). Patent Owner does not contend that the invalidity grounds here were a compulsory counterclaim in the district court; instead, it asserts that this IPR is a collateral attack on the infringement verdict. PO Mtn. Terminate 3–9.

As an initial matter, the parties dispute what standard we should apply in determining whether claim preclusion applies here. Intel contends that we should determine whether, in passing the AIA, Congress demonstrated its intent that claim preclusion not apply to IPRs. Intel Opp. Mtn. Terminate 4 (citing *Astoria Federal Sav. & Loan Ass'n v. Solimino*, 501 U.S. 104, 108 (1991)). Intel argues that "[t]he

AIA specifically identifies the circumstances under which IPRs should be barred by parallel district court cases, and common-law claim preclusion is not one of those circumstances." *Id.* Patent Owner, on the other hand, asserts that *Astoria*'s "lenient" rule—that a "clear statement" is unnecessary to abrogate common law preclusion— applies only in the context of whether an *agency* decision precludes a later *court* decision. PO Reply Mtn. Terminate 2. According to Patent Owner, for this case, where the court decision preceded the agency decision, we must follow "the usual rule" of preclusion by judicial decisions, which requires Congress' "plainly stated" intention to overcome preclusion. *Id.* at 2–3 (citing *Kremer v. Chem. Constr. Corp.*, 456 U.S. 461, 485 (1982)).

Patent Owner misreads the case law. *Kremer* considered whether one *statute* may supersede the preclusion required by an earlier *statute*. *Kremer*, 456 U.S. at 463 ("The principal question presented by this case is whether Congress intended Title VII [of the Civil Rights Act of 1964] to supersede the principles of comity and repose embodied in [28 U.S.C.] § 1738."). The *Kremer* Court noted that recognizing an exception to § 1738 would require either express or implied repeal of that statute, and recognized "a cardinal principle of statutory construction that repeals by implication are not favored." *Id.* at 468 (quoting *Radzanower v. Touche Ross & Co.*, 426 U.S. 148, 154 (1976)). Thus, with no express repeal, the Court followed the rule that implied repeal requires either irreconcilable conflict or "clear and manifest" intent to repeal the earlier statute. *Id.* (quoting *Radzanower*, 426 U.S., at 154).

More pertinent to this case is the holding in *Astoria*. In *Astoria*, the Court considered whether departing from common-law preclusion rules also required a "clear statement" of Congressional intent. *Astoria*, 501 U.S., at 108–09. It reasoned first that well-established common-law principles like preclusion impose a

presumption that they apply. *Id.* at 108. The Court went on to explain that "[t]his interpretative presumption is not, however, one that entails a requirement of clear statement, to the effect that Congress must state precisely any intention to overcome the presumption's application to a given statutory scheme." *Id.* The Court made it clear that such a heightened requirement applies in only limited circumstances, such as constitutional values or overlapping statutes. *See id.* at 108–09. Thus, the Court maintained the presumption of preclusion only to the extent "Congress has failed expressly or impliedly to evince any intention on the issue." *Id.* at 109–10.

We recognize that *Astoria* involved potential preclusion of a court action by a prior administrative decision, the opposite of the relationship presented here. *See* PO Reply Mtn. Terminate 2. But *Astoria*'s rejection of the "clear statement" requirement to demonstrate Congressional intent did not focus solely on that aspect—the Court determined that there was no statutory conflict with § 1738. *Id.* at 109. Here, like *Astoria*, there is no statutory conflict at issue. Therefore, we conclude that the *Astoria* standard should apply, and the question becomes whether passing the AIA with its statutory estoppel provisions demonstrated Congress' intent that common-law claim preclusion should not apply to IPRs.

B. AIA ESTOPPEL

The AIA's estoppel provisions are codified in 35 U.S.C. § 315(e). That section applies claim preclusion to petitioners after an IPR final written decision and prohibits a petitioner from "request[ing] or maintain[ing] a proceeding before the Office" or asserting in district court or the ITC that a claim is invalid "on any ground that the petitioner raised or reasonably could have raised" during the IPR. § 315(e). Section 315(e) applies to future proceedings in both the Office and a district court. *Id.* If common-law preclusion applied after IPR proceedings, there

would be no need for the § 315(e) estoppel provisions, because the principle Patent Owner now asserts—claim preclusion—would prohibit a petitioner, after an IPR final written decision, from raising arguments in a district court that it could have made during the IPR proceeding. Thus, the AIA expressly imposes claim preclusion in one direction—from an IPR to other proceedings—but not in the other direction—from district-court litigation to Office proceedings.

C. CONGRESSIONAL INTENT

Petitioner submits that "applying common-law claim preclusion principles would be contrary to Congress' intent as evidenced by the statutory scheme established for patents." Intel Opp. Mtn. Terminate 3. Patent Owner counters that the AIA did not "abrogate[] common-law claim preclusion by Article-III district-court judgments upon IPRs." *See* Patent Owner's Reply to Intel's Opposition, Paper 118, 1 ("PO Reply Mtn. Terminate") (emphasis omitted). With the AIA, Congress intended "to create a timely, cost-effective alternative to litigation." 77 F. Reg. 48680–01 (Aug. 14, 2012); *see also Cuozzo*, 579 U.S. at 278 (citing legislative history). Despite that potential, the AIA does not require that district courts stay litigation pending Office review. Thus, the AIA inherently accepts the reality that parallel proceedings in a district court and the Office may address overlapping issues relating to asserted invalidity or unpatentability.

Further, the AIA imposes a lower burden of proof for IPRs, in which unpatentability must be shown by a preponderance of the evidence rather than the clear and convincing evidence required for district-court invalidity. *Compare* § 316(e) (applying the preponderance standard to IPRs), *with* § 282(a) (applying a presumption of validity to issued patents), *and Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91 (2011) (holding § 282 requires proving invalidity by clear and convincing evidence). Although some courts have held that different evidentiary

burdens do not overcome claim preclusion if applicable (*see* PO Reply Mtn. Terminate 4), the difference between IPRs and district-court invalidity provides context to Congress adopting claim preclusion in only one direction.[2] To be clear, we do not rely on the different evidentiary burdens as itself a reason not to apply claim preclusion, but rather as evidence regarding Congress' intent.

Congress' adoption of unidirectional preclusion (*see supra*) is significant and distinguishes AIA proceedings like this case from other PTO proceedings also providing for statutory preclusion. The AIA contrasts with the predecessor statute defining *inter partes* reexamination. That statute included former 35 U.S.C. § 317, which included a "two-way" claim preclusion. In addition to an estoppel running against the unsuccessful requester (§ 315(c)), the statute provided that a final decision "against a party in a civil action . . . that the party has not sustained its burden of proving the invalidity of any patent claim in a suit" precluded the party from requesting or maintaining *inter partes* reexamination of such claims on any basis the party "raised or could have raised." *See* Pub. L. 106–113, Appendix I, 113 Stat. 1501A-570 (pre-AIA § 317). When Congress replaced *inter partes* reexamination with *inter partes* review, it did not maintain the prior statute's express claim preclusion against an unsuccessful party in litigation.

According to Patent Owner, the AIA adds only "enhanced estoppels" and in no way reduces estoppels that are imposed by the common law. PO Reply Mtn. Terminate 3 (quoting 157 Cong. Rec. S5429 (daily ed. Sept. 9, 2011)). Those

[2] The Supreme Court has noted the differing evidentiary burdens present an inherent possibility of inconsistent results. *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 282 (2016) ("As we have explained above, inter partes review imposes a different burden of proof on the challenger. These different evidentiary burdens mean that the possibility of inconsistent results is inherent to Congress' regulatory design.").

enhanced estoppels provided by the AIA relate to prohibitions that limit litigation arguments after an IPR. *See* 157 Cong. Rec. S5429 (noting that the "enhanced estoppels" justify extending the IPR filing deadline from six months to one year after a petitioner is sued for infringement). Thus, they directly bear on the types of restrictions imposed by common-law claim preclusion. In other words, the "enhanced estoppels" overlap with common-law preclusion and therefore signal which common-law aspects Congress intended for the AIA.

In Patent Owner's view, the Federal Circuit has determined that "common law estoppel" applies to *inter partes* reexamination, which included statutory estoppel "more muscular than common law collateral estoppel." PO Reply Mtn. Terminate 3 (quoting *SynQor, Inc. v. Vicor Corp.*, 988 F.3d 1341, 1347–48 (Fed. Cir. 2021)). The court in *SynQor* noted that the statutes at issue, as noted above, codified common-law claim preclusion. *SynQor*, 988 F.3d at 1348. It held that the statutory *issue* preclusion, while expressly directed at district-court proceedings, applied also to future reexamination proceedings. *Id.*

We do not find Patent Owner's arguments persuasive. The issue here is different from that in *SynQor*. First, this proceeding involves claim preclusion, not issue preclusion. *SynQor*, 988 F.3d at 1347. Second, that case considered the scope of a particular preclusion, not whether to recognize preclusion operating in an entirely different direction. *Id.* Patent Owner here seeks a more fundamental departure from the statute's express provisions. We conclude that the statute's express estoppel provisions, in light of the difference in evidentiary burdens, show that Congress intended that claim preclusion not restrict IPR petitioners.

Beyond the estoppel provisions discussed, § 315, "Relation to other proceedings or actions," imposes other limitations on IPR proceedings. It bars institution based on a petitioner having "filed a civil action challenging the validity

of a claim of the patent" before filing its petition for IPR (§ 315(a)(1)[3]) or one filing "more than 1 year after" being served with a complaint alleging infringement of the patent" (§ 315(b)[4]). Section 315's institution restrictions indicate that Congress spoke to how district-court proceedings may limit the Office. And by not including claim preclusion from decisions in those proceedings, Congress further signaled its intent that such claim preclusion not apply to IPRs.

D. SUMMARY

Because the AIA's predecessor statute expressly included claim preclusion arising from district-court final decisions, while the AIA provisions governing IPRs include claim preclusion operating only in the other direction, passage of the AIA's estoppel provision expresses Congress' intent that claim preclusion not apply in the circumstances here. As a result, Patent Owner's motion for termination is not persuasive and is denied.[5]

III. CONCLUSION

As discussed above, we conclude Patent Owner has not shown that common-law claim preclusion applies to this proceeding such that we should terminate as to petitioner Intel. We therefore deny Patent Owner's Motion to Terminate as to Intel.

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[3] A "civil action challenging the validity" does not include an invalidity counterclaim. § 315(a)(3).

[4] The one-year later bar does not apply in cases of joinder. § 315(b).

[5] We do not reach Petitioner's arguments that the motion was untimely, that patent claims not at issue in the district court would not be subject to claim preclusion, or that this IPR does not concern the same "claim" that could have been raised in the district court. Intel Opp. Mtn. Terminate 3, 6–9, 13–15.

IV. ORDER

It is:

ORDERED that Patent Owner's Motion to Terminate as to Intel is denied.

IPR2021-01064
Patent 7,725,759 B2

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Paper 135
Entered: May 12, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,
OPENSKY INDUSTRIES, LLC,
Petitioner,[*]

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064
Patent 7,725,759 B2

Before THOMAS L. GIANNETTI, BRIAN J. MCNAMARA, and JASON W. MELVIN, *Administrative Patent Judges*.

MELVIN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)
Denying Patent Owner's Motion to Exclude
37 C.F.R. § 42.64

[*] Intel Corporation, which filed a petition in IPR2022-00366, has been joined as a party to this proceeding. Paper 43.

I. INTRODUCTION

OpenSky Industries, LLC filed a Petition (Paper 2, "Pet.") requesting institution of *inter partes* review of claims 1, 14, 17, 18, 21, 22, and 24 ("the challenged claims") of U.S. Patent No. 7,725,759 B2 (Ex. 1001, "the '759 patent"), owned by VLSI Technology LLC ("Patent Owner").

After preliminary briefing, we instituted review. Paper 17 ("Institution Decision" or "Inst."). Following institution, Intel Corporation filed a petition for *inter partes* review and a Motion for Joinder in IPR2022-00366, requesting that Intel be joined as a petitioner to this proceeding. IPR2022-00366, Papers 3, 4. We instituted trial in IPR2022-00366, granted the Motion for Joinder, and added Intel as a petitioner here. *Id.*, Paper 14. A copy of that decision was entered into the record of this proceeding. Paper 43. Thus, OpenSky and Intel are, collectively, "Petitioner" here.

Patent Owner filed a Response (Paper 40 ("PO Resp.")), Petitioner filed a Reply (Paper 49 ("Pet. Reply")), and Patent Owner filed a Sur-Reply (Paper 85 ("PO Sur-Reply")). We held oral argument on September 22, 2022. Paper 105 ("Tr.").

Additionally, Patent Owner filed a Motion to Exclude two expert declarations filed by Petitioner. Paper 88 ("PO Mtn. Exclude"). Petitioner Opposed (Paper 94) and Patent Owner replied (Paper 95).

We have jurisdiction under 35 U.S.C. § 6(b). This is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons set forth below, we find Petitioner has demonstrated by a preponderance of evidence that the challenged claims are unpatentable. We deny Patent Owner's Motion to Exclude.

A. Related Matters

The parties both identify the following matter related to the '759 patent: *VLSI Technology LLC v. Intel Corporation*, No. 6:19-cv-00254-ADA (consolidated as 1:19-cv-00977) (W.D. Tex.) (trial concluded with jury verdict). Pet. 5; Paper 5. Patent Owner identifies the following additional matters: *VLSI Tech. LLC v. Intel Corp.*, No. 6:21-cv-00057 (W.D. Tex.); *VLSI Tech. LLC v. Intel Corp.*, No. 6:21-cv-00299 (W.D. Tex.); *Intel Corp. v. VLSI Tech. LLC*, IPR2020-00498 (PTAB) (on appeal to Federal Circuit, No. 21-1617); *Intel Corp. v. CLSI Tech. LLC*, IPR2020-00106 (PTAB) (on appeal to Federal Circuit, No. 21-1614). Paper 5.

B. Real Parties in Interest

Petitioner OpenSky identifies only itself as the real party in interest. Pet. 5. Petitioner Intel identifies only itself as the real party in interest. *See* Paper 42, 4. Patent Owner identifies VLSI Technology LLC and CF VLSI Holdings LLC as real parties in interest. Paper 5.

C. The '759 Patent

The '759 patent is titled "System and Method of Managing Clock Speed in an Electronic Device." Ex. 1001, code (54). It describes a method of monitoring a plurality of master devices coupled to a bus, receiving an input from a master device that is a request to increase the bus clock frequency, and increasing the bus clock frequency in response to the request. *Id.*, code (57). The '759 patent's Figure 1 is reproduced below:

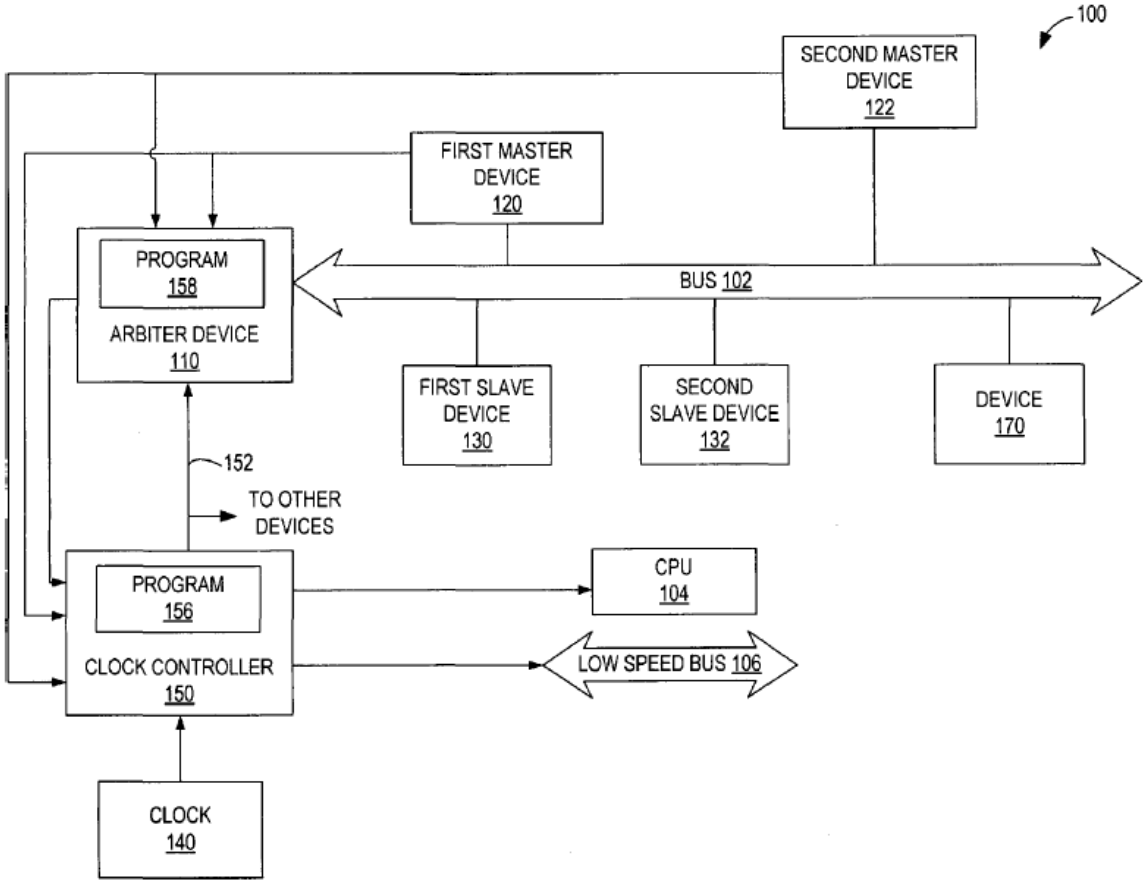

FIG. 1

Figure 1 is a block diagram depicting electronic system 100 with first master device 120 and second master device 122 coupled to bus 102, which is also coupled to arbiter 110. *Id.* at 2:58–3:3. Clock controller 150 is coupled to arbiter 110, clock 140, CPU 104, first master device 120, and second master device 122. *Id.* at 3:3–10.

The '759 patent describes that, in an illustrative embodiment, "clock controller 150 can output a high speed clock 152 having a variable clock frequency to the bus 102 via the arbiter 110 and another high speed clock output to the CPU 104." *Id.* at 3:32–35. Bus devices may generate trigger outputs indicating a request to change the high-speed clock frequency. *Id.* at 3:64–4:17. Then, "clock controller 150 controls and/or adjusts the high

speed clock 152 by changing the clock frequency in response to the plurality of trigger signal inputs." *Id.* at 4:22–24. The '759 patent also describes that, "[i]n a particular embodiment, the clock controller 150 may determine that a change in the high speed clock 152 may not be desired" and, would therefore not change the clock frequency. *Id.* at 4:58–62.

D. CHALLENGED CLAIMS

Challenged claim 1 is reproduced below:

1. A method, comprising:

monitoring a plurality of master devices coupled to a bus;

receiving a request, from a first master device of the plurality of master devices, to change a clock frequency of a high-speed clock, the request sent from the first master device in response to a predefined change in performance of the first master device, wherein the predefined change in performance is due to loading of the first master device as measured within a predefined time interval; and

in response to receiving the request from the first master device:

providing the clock frequency of the high-speed clock as an output to control a clock frequency of a second master device coupled to the bus; and

providing the clock frequency of the high-speed clock as an output to control a clock frequency of the bus.

Ex. 1001, 7:66–8:15. Claims 14 and 18 are independent and recite limitations similar to claim 1. *Id.* at 8:50–9:4, 9:19–40. Each of the other challenged claims depends from one of the independent claims.

E. Prior Art and Asserted Grounds

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	References/Basis
1, 14, 17	103	Shaffer[1], Lint[2]
18, 21, 22, 24	103	Shaffer, Lint, Kiriake[3]
1, 14, 17	103	Chen[4], Terrell[5]
18, 21, 22, 24	103	Chen, Terrell, Kiriake

Pet. 7. Petitioner relies also on the Declarations of Dr. Bruce Jacob. Exs. 1002, 1046, 1055.

II. ANALYSIS

A. Claim Construction

1. "request"

Petitioner proposes that we apply the plain and ordinary meaning to each term of the claims. Pet. 17. According to Patent Owner "[t]he plain meaning of 'request' is to ask for something." PO Resp. 4. Patent Owner submits that Shaffer does not disclose the claimed "request" because a "request" does not encompass a command that mandates action, whereas Shaffer acts on the identified signals without assessment. *Id.* at 4–5, 9–14. Petitioner asserts that "nothing in the challenged claims excludes the scenario in which requests must be followed." Reply 5. Thus, we consider

[1] US 6,298,448 B1, issued Oct. 2, 2001 (Ex. 1005).
[2] US 7,360,103 B2, issued Apr. 15, 2008 (Ex. 1006).
[3] US 2003/0159080 A1, published Aug. 21, 2003 (Ex. 1028).
[4] US 5,838,995, issued Nov. 17, 1998 (Ex. 1003).
[5] US 2004/0098631 A1, published May 20, 2004 (Ex. 1004).

whether "request" implies a negative limitation that excludes a signal, e.g., a command or instruction, acted upon without assessment.

According to Patent Owner, the specification of the '759 patent, supports its claim construction because "the decision-making for frequency control resides in the PCC, *not* the master device."[6] PO Resp. 4; *accord id.* at 9 ("[T]he PCC has an embedded computer program with instructions 156 that decides whether to grant or ignore the request." (citing Ex. 1001, 3:3–6, 5:4–15)). Despite that position, which could be viewed as addressing a capability of the PCC itself rather than the request received by the PCC, Patent Owner asks us to construe "request" as excluding a command. *See* Tr. 50:16–18. Indeed, in distinguishing its claims over Shaffer based on a "request," Patent Owner does not address apparatus claims 14 and 18 separately from method claim 1, although the apparatus claims both recite a "programmable clock controller" that receives a request, whereas method claim 1 does not. *See* PO Resp. 4–14. Thus, we consider whether "request" excludes a signal that is acted on without assessment.

Claim 1 does not include a limitation that requires assessing whether to act on an incoming request. Claim 1 merely recites "receiving a request" from a first master device and, "in response to receiving the request," providing the clock frequency to control a second master device's clock frequency and the bus's clock frequency. Claim 1's language recites only that the claimed outputs are provided "in response to receiving the

[6] "PCC" refers to programmable clock controller, a term in claim 14 and the specification. *See* Ex. 1001, 2:41–50, 5:4–21, 8:59–61.

request"—claim 1 does not require an intervening assessment of any kind be performed.[7]

Patent Owner relies heavily on the specification to argue that the '759 patent's described "PCC need not grant 'requests.'" PO Resp. 11. The specification describes a PCC that receives a request and independently assesses whether to act on the request. Ex. 1001, 5:55–56 ("Moving to decision step 204, the controller determines whether to enable the request to increase the bus speed."). But the specification indicates that this approach is "[i]n a particular embodiment." *Id.* at 5:48–49. It also describes alternative embodiments in which a controller determines whether to set flags indicating high-frequency operation and then increases clock frequency if flags are set. *See id.* at 6:1–7:14.

We do not read the specification's disclosure of alternative embodiments as establishing that the claimed "request" mandates deciding whether to act on the request. Nothing in the specification describes a request that itself requires independent assessment. Stated otherwise, although any given "request" could be evaluated to determine what, if any, action to take in response, any such evaluation does not depend on the nature of the request. The claims do not include language restricting how a request is processed, but instead read on systems or methods in which a certain

[7] As noted, Patent Owner hinges its arguments on construing "request." *See* Tr. 50:16–18. Independent claim 14's programmable clock controller includes instructions to perform a method that, like claim 1's method, receives the request provided by the first master device and provides the claimed outputs without reciting any intervening assessment of the request. Independent claim 18 similarly recites that a clock controller coupled to an arbiter is configured to adjust a variable clock frequency of the bus in response to receiving the request from the first master device, without reciting any intervening assessment of the request.

action is taken in response to a request. At least one example disclosed in the specification is consistent with a system that makes no independent assessment of a request. The example states that "[t]he clock controller can output a variable clock frequency that varies in response to one or more inputs from the at least one master device." *Id.* at 2:38–40. This exemplary embodiment supports Petitioner's contention that we should not construe "request" as requiring independent assessment before acting on the request.

The prosecution history further supports an understanding of the claimed "request" as not requiring assessment before acting. Original application claim 1 recited "receiving an input . . . wherein the input is to request an increase to the clock frequency." Ex. 1010, 18.[8] Original application claim 2, which depended from original application claim 1, recited "determining whether to enable the request to increase the clock frequency of the bus." Ex. 1010, 18 (original claim 2). Thus, the application for the '759 patent included claims that differentiated between requesting an increase in clock frequency with no further assessment of the request (e.g., original application claim 1) and claims that required determining whether to enable the request (e.g., original application claim 2). During prosecution, original application claim 2 and others reciting "determining" steps in connection with a request were cancelled. *See id.* at 18–20; Ex. 1019, 5 (canceling claims 1–29). Accordingly, the prosecution history shows that the applicant intentionally cancelled claims limited to determining whether a request to change the clock frequency should be enabled, i.e., the applicant

[8] Unless noted otherwise, our citations refer to the exhibit's page number, rather than the page numbers of the original documents in the exhibit.

understood the possibility of claiming the distinction now sought, but decided not to limit the claims in that manner.

Finally, Petitioner points out prior art that uses the terms "command," "instruction," and "request" synonymously, suggesting that "request" did not carry the special meaning for which Patent Owner now argues. *See* Pet. Reply 7 (citing Ex. 1055, ¶¶29–32; Ex. 1006, 3:16–17 ("the OS makes a request to set the P-state"), 4:40–44, 5:47–49 ("when the OS specifies a first P-state via SET_PSTATE command"), 9:16–20 ("the OS communicates with the processor to instruct … the new P-state")).

Based on the claim language, the examples in the specification, and the prosecution history, we decline to infer the additional limitation on the term "request" as urged by Patent Owner. Accordingly, we find that the intrinsic evidence supports a construction of "request" that does not require assessing the request before acting in response to the request. We further find that such a construction is consistent with Petitioner's extrinsic evidence of typical usage of the term in the relevant art, i.e. that the challenged claims do not expressly require a determination before acting on the request.

Considering the record as a whole, we conclude that the claims do not require assessing whether to act on a request.

2. "master device"

According to Patent Owner, "[w]hile offering no construction of 'master device,' Petitioner argues that Shaffer's controllers are 'master devices' because they 'could initiate communications like those of the '759 patent.'" PO Resp. 19 (citing Pet. 23); *see* Pet. Reply 11. Patent Owner

submits that "master devices can make clock frequency change requests, while [the '759 patent's] slave devices cannot." PO Resp. 23.

Method claim 1 recites "receiving a request, from a first master device of the plurality of master devices, to change a clock frequency" and, in response to receiving that request, "providing the clock frequency . . . as an output to control a clock frequency of a second master device coupled to the bus." Thus, the claim language requires only that the first master device be able to request clock-frequency changes. The only feature of a master device recited in independent claims 1, 14, and 18 is that a first master device sends a request to change the clock frequency in response to a predefined change in its performance caused by loading during a predetermined interval. *See, e.g.,* Ex. 1001, 8:1–8. The claims do not otherwise limit a master device. None of the claims recites a "slave" device.

The specification describes an embodiment in which two master devices are each coupled to a bus, a clock controller, and an arbiter. Ex. 1001, 2:66–3:5, 3:8–10, Fig. 1. The specification also states that "[t]he first master device 120 may initiate communication with the first slave device 130 by requesting an access token from the arbiter 110 to communicate over the bus 102." *Id.* at 3:12–15. The specification contrasts "slave" devices: "The first slave device 130 may receive data but may not initiate communication with a master." *Id.* at 3:15–17; *accord id.* at 3:17–19 ("That is, the first slave device 130 is disabled to initiate communication."). The patent thus distinguishes "master" from "slave" devices based on the ability to initiate bus communication.

The specification also discloses an embodiment in which "[e]ach of the plurality of devices coupled to the bus 102 provide[s] a corresponding trigger output" where "the trigger output is indicative of a request to change

the clock frequency of the high speed clock 152." *Id.* at 3:64–65, 4:15–17 ("[t]he generation of the trigger output is indicative of a request to change the clock frequency of the high speed clock 152"). That functionality—using trigger outputs to request speed changes—is agnostic as to whether a device is a "master" or "slave" device. Stated otherwise, although the particular embodiment describes master devices that can request frequency changes, the slave devices can also request frequency changes because the specification states that "each" device provides a trigger output. Thus, the specification does not support Patent Owner's assertion that the ability to request clock speed changes distinguishes "master devices" from "slave devices."

We construe master devices as those devices that can initiate communications with other devices but need not be able to send requests to a clock module.

3. "clock frequency of a second master device"

Contesting whether Chen discloses providing an "output to control a clock frequency of a second master device coupled to the bus," Patent Owner asserts that "the separate clock frequency of the second master device in the claims refers to the internal clock frequency of the master device, not to an I/O bus frequency." PO Resp. 52. Petitioner replies that receiving a clock frequency for bus transactions satisfies the claim language, regardless of whether a device has a separate internal clock. Pet. Reply 21.

We agree with Petitioner that nothing in the claim language requires that "a clock frequency of a second master device" refer to the "internal clock frequency" of the second master device. *See* Pet. Reply 21 ("[I]t is irrelevant whether [Chen's master] devices could also have other clocks

within them."). Rather, the phrase "a clock frequency" is generic and does not limit whether the provided clock controls bus communications or another aspect of a second master device. Nor has Patent Owner directed us to the specification's disclosures that would limit the term beyond a specific embodiment. Patent Owner's reference to Dr. Conte's declaration (PO Resp. 52 (citing Ex. 2065 ¶ 186)), cites testimony that simply asserts that skilled artisans "would understand that the I/O bus clock in Chen has nothing to do with the internal clock of the I/O device." Ex. 2065 ¶ 186. This testimony does not address the proper understanding of "a clock frequency." On the other hand, Petitioner's expert, Dr. Jacob, discusses the claims' broad language. *See* Ex. 1055 ¶¶ 95–96.

We discuss Patent Owner's implicit claim construction in more detail below. *See infra* at 38 (§ II.D.2).

B. Obviousness over Shaffer and Lint (Claims 1, 14, and 17)

Shaffer discloses a CPU speed control system that provides "the CPU and other system buses in the device with a variable clocking frequency based on the application or interrupt being executed by the device." Ex. 1005, code (57). Shaffer's Figure 1 is reproduced below:

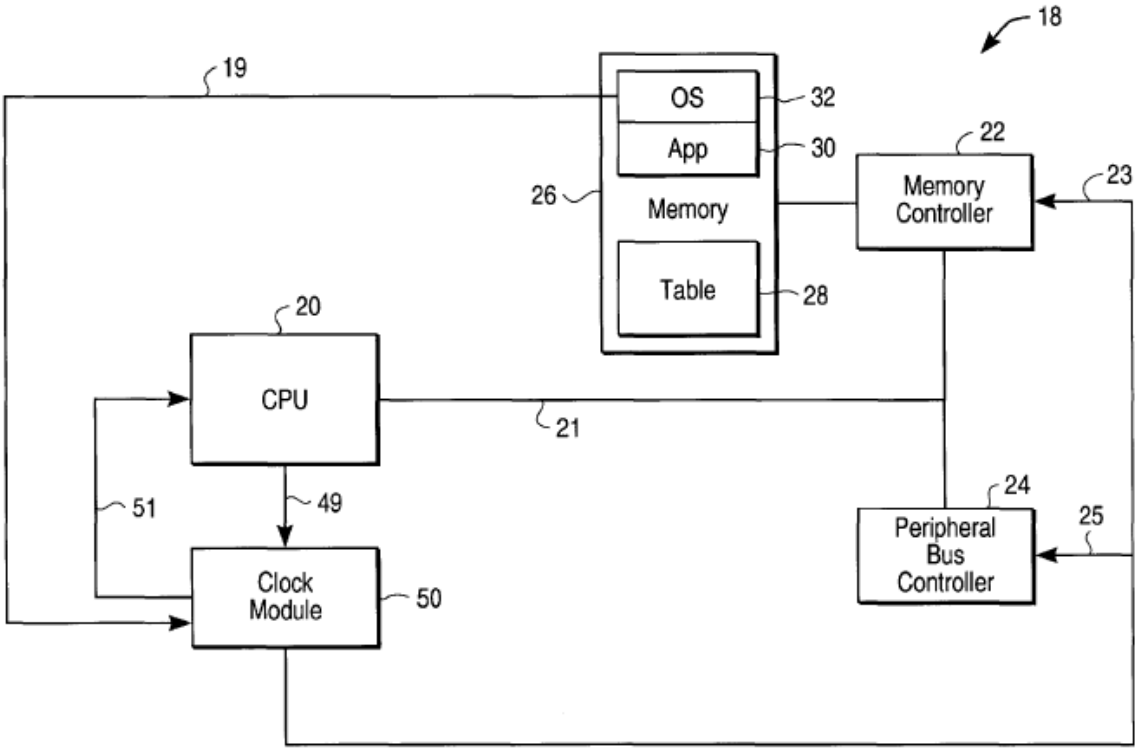

FIG. 1

Figure 1 is a block diagram showing intelligent programmable clock module 50 that provides CPU 20 with a clocking signal and informs CPU 20 of the frequency through line 51. *Id.* at 3:8–23. Additionally, clock module 50 supplies a clocking signal to memory controller 22 through memory clock control line 23 and to peripheral bus controller 24 (also referred to as system bus controller 24) through system bus clock control line 25. *Id.* at 4:26–29. Schaffer discloses that its speed control system "provide[s] a programmable variable clock frequency to the other controllers and buses in the system" such that "data and commands will travel through the data/command bus 21 at a proportionally slower speed" along with CPU 20 operating at the slower speed. *Id.* at 4:15–25.

Shaffer discloses "a multiprocessor system" in which "a single clock module 50 may drive all the processor clocks." *Id.* at 6:2–5. Petitioner

contends that each of the multiple CPUs in a multiprocessor system "are master devices, per the '759 patent." Pet. 23.

Shaffer discloses "a CPU utilization application that dynamically monitors the level of CPU usage." Ex. 1005, 4:53–54; *see id.* 4:50–5:20. That application provides CPU utilization values to the operating system, OS 32, which may then generate "an interrupt to the clock module 50 instructing it to raise or lower the clocking frequency provided to the CPU 20." *Id.* at 5:5–8.

Petitioner relies on Schaffer for most limitations of claim 1, further relying on Lint as teaching the limitation that a "predefined change in performance is due to loading of the first master device as measured within a predefined time interval." Pet. 22–31. Petitioner first asserts that Shaffer teaches this limitation by disclosing that "the CPU 20 operates at a lower speed when the OS 32 determines that no processing is occurring or has not occurred for a predetermined amount of time." *Id.* at 27 (quoting Ex. 1005, 4:6–8). Petitioner relies on Lint as an alternative to Shaffer's teachings in that regard, submitting that Lint discloses "changing the 'performance state . . . based in part on the data representing the average performance over the previous period of time.'" *Id.* (quoting Ex. 1006, 3:1–7). Petitioner reasons (1) that Shaffer describes a "CPU utilization percentage," (2) that Lint discloses a way of calculating the utilization percentage that would allow Shaffer's system "to better interface with processor chips featuring hardware coordination of [performance]-states" by saving power, and (3) that doing so would amount to nothing more than using a known technique to improve similar devices in the same way. *Id.* at 27–30 (citing Ex. 1006, 3:2–7, 2:33).

1. "request"

Petitioner identifies Shaffer's "instructions via lines 19 and 49" as requests from CPU 20 to change a clock frequency of clock module 50. Pet. 23–24 (citing Ex. 1005, 3:8–22 ("CPU 20 in turn can instruct through line 49 the clock module 50 to increase or decrease the output frequency as needed"), 4:50–54 ("OS 32 is used to control the frequency of the clock module 50 in response to a CPU utilization application that dynamically monitors the level of CPU usage.")). Patent Owner argues that Shaffer's instruction is not a "request" because "Shaffer's clock module may not reject these commands; it simply does as it's told." PO Resp. 5–14. As discussed above, however, we do not construe "request" as requiring independent assessment of whether to act on the request. *See supra* at 6 (§ II.A.1). Accordingly, we find that Shaffer teaches a request as claimed.

2. "monitoring a plurality of master devices"

Petitioner asserts that Shaffer discloses "monitoring a plurality of master devices coupled to a bus" because CPU 20, memory controller 22, bus controller 24, and another CPU are coupled to data/command bus 21. Pet. 22 (citing Ex. 1005, Fig. 1, 6:2–5). As to "monitoring," Petitioner cites Shaffer's "CPU utilization application that dynamically monitors the level of CPU usage." Ex. 1005, 4:53–54. As to the memory and bus controllers, Petitioner asserts that skilled artisans "would have understood that Shaffer's 'controllers' could initiate communications, like those of the '759 patent." Pet. 23. Petitioner's expert, Dr. Jacob, testifies that CPU 20, memory controller 22, and peripheral bus controller 24 are master devices, as claimed, because "they are all on the system bus, a shared bus organization." Ex. 1055 ¶ 51; *see also id.* ¶ 46 (asserting that a shared bus supports multiple

masters and requires each to "make its own decisions about when and how to access the shared bus").

Patent Owner argues that Shaffer does not teach or suggest monitoring controllers 22 or 24. PO Resp. 15. According to Patent Owner, because those controllers have no ability to signal a speed change, "there would be no reason to monitor their utilization." *Id.* Additionally, Patent Owner reasons that those devices are much slower than CPU 20, because "the most cost effective method to reduce power consumption is to vary the CPU 20 clock speed." *Id.* (quoting Ex. 1005, 6:12–14). Petitioner replies that skilled artisans would have understood Shaffer's controllers 22 and 24 are monitored. Pet. Reply 9 (citing Ex. 1055 ¶¶ 104–107).

Shaffer discusses "monitoring" in several ways. First, Shaffer describes its clock module as responding to OS-generated signals and gives an example of an idle signal indicating whether the CPU is in an idle state. Ex. 1005, 3:27–59. Shaffer also discloses that the clock module may respond to interrupts indicating user activity like mouse movement or keyboard input. *Id.* at 3:60–4:14. Shaffer further describes that OS signals may be generated by "a CPU utilization application that dynamically monitors the level of CPU usage." *Id.* at 4:51–5:20. Finally, Shaffer describes controlling the clock frequency "in response to the particular application or task being executed by the system." *Id.* at 5:21–47. Dr. Jacob testifies that skilled artisans would have understood Shaffer to disclose monitoring its controllers along with the CPU, explaining that:

> monitoring software typically monitors all of a system's activity, including network traffic, memory traffic, disk traffic, etc. Shaffer's memory controller 22 and peripheral bus controller 24 would be monitored, even if the devices

> consumed little power themselves, because the data traffic through them could very well add up to a significant amount.

Ex. 1055 ¶ 106.

Considering the record as a whole, we are not persuaded that Shaffer discloses monitoring devices beyond CPUs. Although Dr. Jacob asserts that Shaffer's memory controller and peripheral bus controller "would be monitored," Shaffer discloses monitoring through interrupts and a "CPU utilization application," as described above. Petitioner does not explain, through Shaffer's disclosures or Dr. Jacob's testimony, how either a CPU utilization application or interrupt monitoring would include monitoring memory controller 22 or peripheral bus controller 24. Petitioner's assertion that "typical" monitoring software would have included network, memory, and disk traffic, even if true, is insufficient to show that Shaffer's monitoring is consistent with that assertion.

Petitioner, however, relies additionally on Shaffer's disclosure of a multiprocessor system. Pet. 23 ("Shaffer discloses multiple CPUs. These CPUs are master devices, per the '759 patent.") (citations omitted). Petitioner relies also on Shaffer's "CPU utilization application" as monitoring the CPUs. *Id.*

Patent Owner incorrectly asserts that the Petitioner relied "*solely* on Shaffer monitoring *single* CPU 20." PO Sur-Reply 11 (citing Pet. 22–23). The Petition states "[a] POSA would have found it obvious that other CPUs disclosed by Shaffer would have been coupled to the bus." Pet. 23 (citing Ex. 1002 ¶¶ 228–233). The Petition also identifies "another CPU" as one of the plurality of master devices and identifies Shaffer's "CPU utilization application" as monitoring the master devices. Pet. 22–23 (citing, e.g. Ex. 1005, 6:2–5 ("in a multiple processor system (not shown), a separate

clock module 50 may be used for each processor, or a single clock module may drive all the processor clocks").

Patent Owner asserts that "Shaffer does not teach monitoring multiple CPUs in its vague reference to a multi-CPU configuration." PO Sur-Reply 12; *accord* PO Resp. 15–16 ("Shaffer does not provide any details of how such a [multiprocessor] system would operate" and therefore "does not disclose monitoring each CPU in Shaffer's multiprocessor embodiment."). Patent Owner emphasizes Dr. Jacob's statement that "I don't really know what it would do" because Shaffer does not disclose its algorithm "in a multiprocessor scenario." PO Sur-Reply 12 (quoting Ex. 2066, 41:13–42:5). That statement, however, relates to the particular algorithm that Shaffer would apply to make clock-speed changes in a multiprocessor system. Ex. 2066, 41:25–42:1. The challenged claims are not directed to the particular algorithm that would be used in such a multiprocessor system, and therefore, Dr. Jacob's testimony cited by Patent Owner does not diminish Shaffer or Dr, Jacob's opinion that Shaffer's CPU monitoring would include multiple CPUs in a multiprocessor system. Ex. 1055 ¶¶ 105–106; *see also* Pet. Reply 9 (citing Ex. 2066, 89:5–10).

We are persuaded that Shaffer discloses monitoring "CPU utilization" including multiple CPUs in a multiprocessor system. Shaffer's disclosures are not limited to monitoring a single CPU, but rather consider "CPU utilization" generally. Ex. 1005, 4:51–54. Thus, in Shaffer's multiprocessor embodiment, an application that "dynamically monitors the level of CPU usage" would monitor multiple CPUs. This conclusion is further supported by Shaffer's claims, which recite a computer system comprising "one or more CPUs," "a CPU resource utilization monitor to determine the amount of CPU resources being used by the computer system," and "an intelligent

clock module to provide a variable operating frequency to said one or more CPUs." Ex. 1005, 8:10–26.

3. "control a clock frequency of a second master device"

Petitioner asserts that Shaffer discloses, in response to a request from CPU 20 executing OS 32, providing a signal from its clock module 50 to control a clock frequency of another CPU coupled to bus 21.[9] Pet. 30; Ex. 1005, 6:2–5 ("[A] single clock module 50 may drive all the processor clocks")).

Patent Owner asserts "Shaffer does not teach or suggest that CPU 20 would change the clock frequency of a second CPU." PO Resp. 17 (citing Ex. 2066, 39:12–19 (Dr. Jacob's testimony about Shaffer's disclosures with two clock modules)). We, however, base our conclusion on Shaffer's discussion of a *single* clock module, and Dr. Jacob's testimony about Shaffer's two-clock-module embodiment is inapposite. Patent Owner submits it would be "contrary to Shaffer's principle of operation and stated goal" to operate both CPUs at the same clock rate despite different utilizations. PO Resp. 17–18. We do not agree, as Shaffer discloses both CPUs operating with a single clock module. Moreover, we credit Dr. Jacob's testimony that symmetric multiprocessor arrangements, in which two processors share in running OS and application tasks, were more common at the time of the invention and more broadly applicable than the single instruction, multiple data (SIMD) arrangement cited by Patent Owner's expert, Dr. Conte, in which two processors perform the same task

[9] Because we determine above that Shaffer does not disclose monitoring its memory controller 22 or peripheral bus controller 24, we do not address Petitioner's further contentions that rely on those elements and focus instead on Shaffer's multiprocessor embodiment.

simultaneously. Ex. 1055 ¶¶ 56–57. Dr. Jacob testifies that SIMD architecture is "a very narrow type of accelerator architecture in computer design," and is "used in very specific application areas that can exploit such an arrangement (e.g., graphics processing and some high-performance computing)." Ex. 1055 ¶ 57.

Shaffer discloses speed-control systems for personal computers targeting, for example, savings when computers "are left on for extended periods of time, even when not being actively used." Ex. 1005, 1:15–28. Shaffer discloses that its invention is applicable to a broad range of "microprocessor-based devices and/or battery powered intelligent devices that need to conserve battery power, such as PCS, cellular phones, personal digital assistants (PDA), and battery backed-up systems like private branch exchange (PBXs) or medical equipment." *Id.* at 2:55–62. We therefore find Shaffer's disclosures are broadly applicable to multiple architectures, and are not limited to the particular processor arrangement that Dr. Conte proposes. In a multiprocessor system using a single clock module, as Shaffer discloses, the single clock frequency is provided to control the clock frequency of all CPUs (i.e., control a clock frequency of a second master device). *See* Pet. 23 (citing Ex. 1002 ¶ 232 ("As the system uses a shared-bus organization, a person of ordinary skill would understand that any additional CPUs, if present, would be attached to the system bus 21 in the same manner as CPU 20.")).

Shaffer's system operating as Petitioner describes would not be "contrary to Shaffer's principle of operation," as Patent Owner alleges, because Shaffer seeks "to ensure that the CPU is operating at the most power efficient level for *any* given task." Ex. 1005, 2:26–30 (emphasis added). Seeking optimum performance in Shaffer necessarily occurs within the

constraints of a hardware system, and even if a system with two clock modules could achieve higher efficiency in certain situations, that would nonetheless permit an approach using one clock module to control two CPUs performing different tasks. Thus, we find that Shaffer discloses reducing power consumption by reducing system clock speed when the processing workload allows, and discloses doing so in a multiprocessor system with one clock module. Ex. 1005, 4:51–54, 5:5–8, 6:2–5.

4. "output to control a clock frequency of the bus"

Petitioner relies on Shaffer's clock module 50 providing a clock signal to Shaffer's system bus. Pet. 31 (citing Ex. 1005, 2:17–19, 4:15–25, 5:66–6:2). Patent Owner contends that Petitioner relies on different buses for different limitations, by pointing to Shaffer's "data/command bus 21" as the bus connecting the asserted master devices, but pointing to Shaffer's "system bus" as receiving the clock signal. PO Resp. 25–28. Patent Owner acknowledges that Petitioner treats the "data/command bus 21" and "system bus" as one and the same, but asserts that Shaffer consistently describes the two separately and assigns a reference numeral to only the data/command bus 21. *Id.* at 26–27.

We find that Shaffer discloses its clock module 50 providing a clock signal to data/command bus 21, the same bus that Petitioner relies on for other limitations. That conclusion arises from Shaffer's disclosures that show its data/command bus 21 is the described system bus. Shaffer's Summary of the Invention refers to "the CPU and other system buses" without mentioning any more-specific bus. Ex. 1005, 2:17–19; accord *id.*, code (57). Shaffer also discloses that the "CPU speed control system 18" provides the clock frequency "to the other controllers and buses in the

system" and specifically mentions the "data/command bus 21." *Id.* at 4:15–25. Figure 1 shows that "data/command bus 21" connects CPU 20 with memory controller 22 and peripheral bus controller 24. *Id.* Fig. 1. Finally, Shaffer discloses that "the clock module 50 drives the entire system bus (as mentioned above) and thereby reduces power requirements for the processor, related chipsets, memory, controllers and the like." *Id.* at 5:66–6:2. Those disclosures demonstrate that Shaffer's clock module 50 provides an output to control a clock frequency of data/command bus 21, because that bus connects the processor, memory, and peripheral controller.

5. Objective indicia of nonobviousness

Patent Owner asserts that objective indicia of nonobviousness show that the claimed invention would not have been obvious. PO Resp. 56–61. Patent Owner alleges the existence of commercial success and that the '759 patent proceeded contrary to conventional wisdom. *Id.*

As to commercial success, Patent Owner relies on the jury's verdict awarding damages of $675 million against Intel. *Id.* at 57 (citing Ex. 1027, 6). To establish a nexus between Intel's alleged commercial success and the '759 patent's claims, Patent Owner asserts that the jury was "instructed to determine damages solely based upon the value of the patented inventions apart from any unpatented features." PO Resp. 58 (citing Ex. 2067, 1544:14–16, 1545:13–1546:9); PO Sur-reply 20 (noting that the district court rejected Intel's post-trial motions and entered final judgment).

When the evidence shows that a product includes "the invention disclosed and claimed in the patent," we presume that any commercial success of the product is due to the patented invention. *PPC Broadband v. Corning Optical Commc'ns,* 815 F. 3d 734, 746–747 (Fed. Cir. 2016). Such

a presumed nexus requires not only that a commercial product embodies the claims, but also that it is coextensive with them. *See Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) ("[P]resuming nexus is appropriate 'when the patentee shows that the asserted objective evidence is tied to a specific product and that product embodies the claimed features, and is coextensive with them." (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018))).

Petitioner notes that the jury infringement verdict is on appeal and does not apply to all of the challenged claims. Pet. Reply 22–23, n. 8. According to Petitioner, notwithstanding Patent Owner's citation to "cases in support of the proposition that a jury verdict can form part of a commercial success analysis, those cases don't excuse [Patent Owner's] burden on the elements that it must prove." *Id.* at 22–23 (citing *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1579 (Fed. Cir. 1997) ("Of course the record must show a sufficient nexus between this commercial success [of the infringing product] and the patented invention.").

Petitioner contends that Patent Owner fails to provide meaningful explanation of its commercial success allegations and fails to show nexus between the claimed features and the alleged commercial success. *Id.* at 22. Petitioner argues that the challenged claims were not the basis for customer demand of the accused products. *Id.* at 23 (citing Ex. 1058, 811:13–812:24 (Intel employee Adam King testifying that Intel's customers care about numerous technical attributes, including graphics performance for video editing, camera quality for video conferencing and power efficiency for laptops)).

Other than the jury verdict, Patent Owner's sole argument that the infringing product's alleged commercial success arose from features claimed

in the '759 patent cites Intel's article in an IEEE publication promoting its "Speed Shift" technology. PO Resp. 58 (citing Ex. 2068, 54); PO Sur-reply 20–21. Patent Owner asserts that the IEEE paper describes a "revolutionary" approach in which a device called a PCU, functioning as a programmable clock controller, improves performance over operating-system-based approaches. *Id.* (citing Ex. 2068, 54, Ex. 2065 ¶¶ 72–73).

The IEEE article cited by Patent Owner is not sufficient evidence to demonstrate the requisite nexus. Intel's employee testified that it takes years and thousands of engineers to build a new generation of processors because such devices include thousands of features and enhancements. Ex. 1058, 811:2–12. Petitioner notes that Patent Owner accused only the Speed Shift feature of infringing the '759 patent and that Patent Owner's damages expert, Dr. Sullivan, "conceded that many of the thousands of other features 'have nothing to do with what [Patent Owner] accuses.'" Pet. Reply 23 (quoting Ex. 1057, 690:19–691:24). Petitioner additionally points out that, in a subsequent trial, Patent Owner's expert agreed that Intel would have sold the accused products regardless of the alleged infringement. *Id.* (citing Ex. 1061, 771:13–22 (testifying that Intel would have made the same sales, even if the jury found the products not to infringe)).

The record before us does not show that Intel's product or products underlying the infringement verdict are coextensive with "the invention disclosed and claimed." *See Fox Factory*, 944 F.3d at 1373, 1377; *see Facebook, Inc. v. Express Mobile Inc.*, IPR2021-01457 Paper 38 at 76–80 (PTAB March 14, 2023) (concluding an infringement verdict was insufficient to establish nexus). Rather, the record shows that the accused products contained many features beyond those relevant to the '749 patent. Ex. 1057, 690:19–691:24; Ex. 1058, 815:16–816:21.

Other than the jury verdict, Patent Owner has not provided financial information that would allow us to weigh the extent of Intel's commercial success based on the alleged sales of products infringing the claimed invention. In particular, the record does not reflect whether the infringing device represented an increase in market share over a prior, noninfringing device or any other aspect that would allow us to place the verdict's amount in context. *See, e.g.*, *In re Applied Materials, Inc.*, 692 F.3d 1289, 1300 (Fed. Cir. 2012) ("An important component of the commercial success inquiry in the present case is determining whether Applied had a significant market share."). On this record we do not find evidence of commercial success sufficient for purposes of establishing non-obviousness.

As to proceeding contrary to accepted wisdom, Patent Owner submits that, prior to the '759 patent, skilled artisans used the operating system to make speed changes. PO Resp. 59. In Patent Owner's view, the '759 patent instead "uses a request mechanism in which the decision-making for speed changes resides in another component, *e.g.*, the programmable clock controller 150." *Id.* at 60–61. Patent Owner's argument depends on our adopting Patent Owner's construction of "request," which we decline to do. *See supra* at 6 (§ II.A.1); Pet. Reply 24. Accordingly, we do not agree with Patent Owner's assertions that the '759 patent proceeded contrary to accepted wisdom, as the prior art disclosed a "request mechanism" under our construction.

Having considered Patent Owner's assertions regarding objective indicia of non-obviousness, we conclude the evidence of record does not persuasively show success of the infringing products with a nexus to the challenged claims or that the claims proceeded contrary to accepted wisdom.

6. Conclusion

We have considered the full record, including evidence and arguments presented by Petitioner and Patent Owner on whether Shaffer and Lint teach or suggest claim 1's limitations, whether there was a reason that skilled artisans at the time would have combined Shaffer and Lint as asserted, and whether objective indicia indicate the claims would not have been obvious. Based on the full record, we conclude that Petitioner has shown by a preponderance of the evidence that claim 1 would have been obvious over Shaffer and Lint.

7. Claim 14

For claim 14, Petitioner relies mainly on its claim 1 contentions, additionally addressing the language in claim 14 that differs from claim 1. Pet. 31–33. Patent Owner separately addresses claims 14 and 18, which recite systems rather than claim 1's method. PO Resp. 19–25.

As discussed above, we agree with Patent Owner that Shaffer does not disclose monitoring its memory controller 22 and peripherical bus controller 24. *See supra* at 16 (§ II.B.2) (discussing claim 1's "monitoring a plurality of master devices"). Claims 14 and 18 recite a first and second master device and a programmable clock controller that interacts with the master devices, but, unlike claim 1, claims 14 and 18 do not require monitoring multiple master devices. Ex. 1001, 8:50–9:4. Thus, our conclusion regarding claim 1's "monitoring" limitation—that Shaffer does not disclose monitoring its memory and peripheral bus controllers (*see supra* at 16 (§ II.B.2)—does not apply to claims 14 or 18.

Other than the "monitoring" aspect, Patent Owner's arguments against Petitioner's analysis of claims 14 and 18 parallel those made for claim 1.

PO Resp. 14–18 (addressing claim 1's limitations reciting "master devices" and "second master device"), 19–25 (addressing claim 14 and 18's "master devices" and "second master device"). As discussed above, we do not agree that claim construction requires a "second master device" that can request speed changes from the clock controller. *See supra* at 10 (§ II.A.2). Thus, we do not agree with Patent Owner that Shaffer's memory controller and peripheral bus controller cannot be the claimed "second master device" in claims 14 and 18. *See* PO Resp. 20–24 ("Thus, Petitioner fails to prove that a POSITA would have understood Shaffer's controllers 22 and 24 to be master devices within the meaning of the '759."). We conclude that the "second master device" claim language in claims 14 and 18 reads on Shaffer's controllers 22 and 24 as Petitioner asserts. *See* Pet. 30–31, 33. This conclusion is consistent with our construction for "master device," as discussed above. *See supra* at 10 (§ II.A.2).

Patent Owner challenges also whether Shaffer discloses claim 14's requirement that the clock controller controls the clock frequency of a second mater device based on Shaffer's multiple-CPU embodiment. PO Resp. 25 (citing *id.* at 16–18). For the reasons discussed above, we find that Shaffer's multiple-CPU embodiment discloses a single clock controller controlling the clock frequency of a second master device (a second CPU) coupled to the bus. *See supra* at 20 (§ II.B.3). This conclusion is independent of our construction of "master device," as Patent Owner does not argue Shaffer's additional CPU's could not request speed changes.

Considering the full record, including Patent Owner's asserted objective indicia discussed above, we conclude that Petitioner has shown by a preponderance of the evidence that claim 14 would have been obvious over Shaffer and Lint.

8. Claim 17

Petitioner relies on Shaffer as disclosing the additional limitations of claim 17, which depends from claim 14. Pet. 31, 33. Patent Owner does not challenge those contentions. We have reviewed Petitioner's contentions and determine that Petitioner has shown claim 17 would have been obvious over Shaffer and Lint.

C. Obviousness over Shaffer, Lint, and Kiriake (Claims 18, 21–22, 24)

For independent claim 18, Petitioner relies on its claim 1 contentions, addressing the differences in the language between claims 1 and 18, and asserting that Kiriake discloses both master devices and the claimed arbiter. Pet. 34–38. For claims 21, 22, and 24, each of which depends from claim 18, Petitioner points to Shaffer's additional disclosures that teach or suggest the additional limitations recited in those claims. Pet. 38–39. Other than as discussed above regarding claim 1, Patent Owner does not dispute Petitioner's contentions. We have reviewed the record, including Patent Owner's asserted objective indicia of nonobviousness, and determine that Petitioner has shown claims 18, 21, 22, and 24 would have been obvious over Shaffer, Lint, and Kiriake.

D. Obviousness over Chen and Terrell (Claims 1, 14, 17)

Relying on Chen for most limitations of claim 1, Petitioner submits that Terrell teaches requesting a clock speed change "in response to a predefined change in performance of the first master device" and that the predefined change "is due to loading of the first master device as measured within a predefined time interval." Pet. 40–49.

Chen discloses an extension to an input/output ("I/O") bus and bridge chip that allows higher-speed operation. Ex. 1003, code (57), 1:6–8. To that end, Chen discloses a system "for switching between different data transfer speeds." *Id.* at 1:61–62. Chen's host bridge "interconnects a system bus with an I/O bus" and includes control logic to allow "bus transactions at both a high frequency and a lower frequency." *Id.* at 2:1–6.

Chen's Figure 1 is reproduced below:

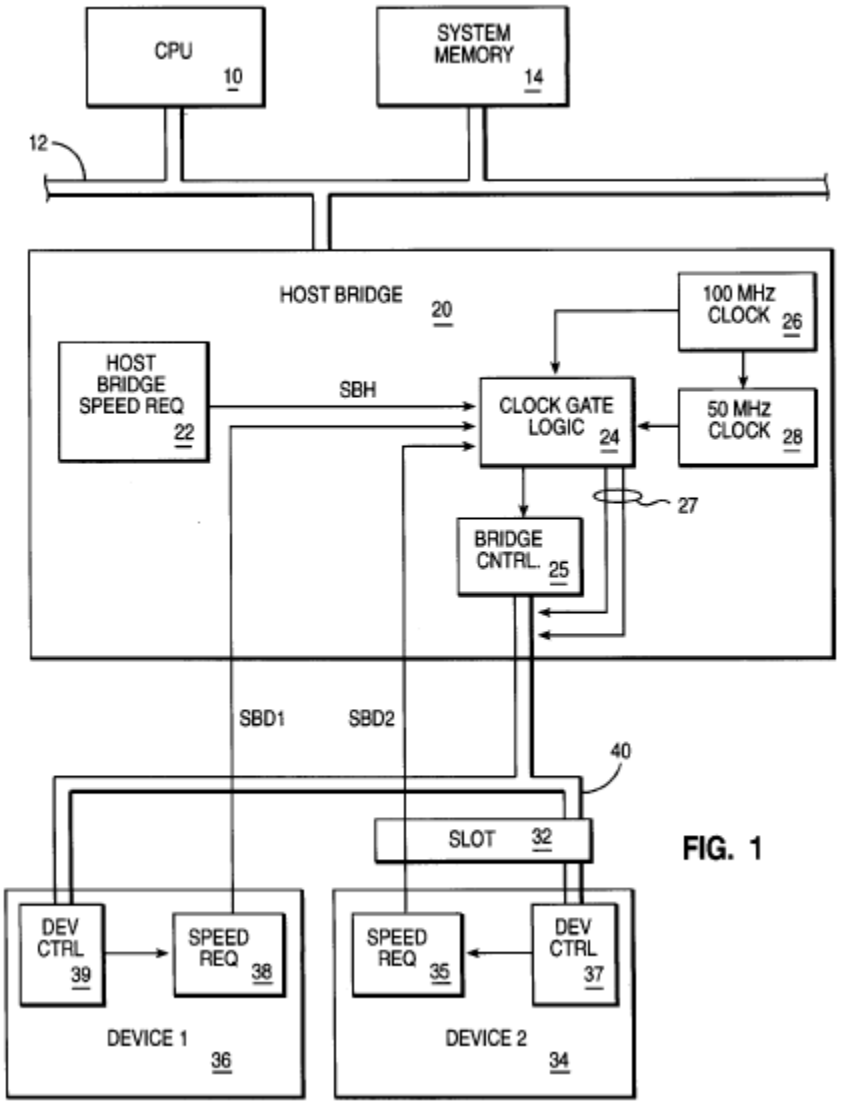

FIG. 1

Figure 1 depicts CPU 10 connected to system bus 12, which connects to host bridge 20, which interconnects system bus 12 with I/O bus 40 that communicates with devices 34 and 36. *Id.* at 2:50–3:4. Device 36 is a "soldered device" while device 34 is a "pluggable device" in slot 32. *Id.* at 3:1–3. Devices 34 and 36 have speed requesting circuits 38 and 35, respectively, that communicate with clock gate logic circuit 24, which causes the frequency of bus 40 to be dynamically changed through unique clock lines 27. *Id.* at 3:4–22.

Terrell discloses a system and method for controlling the frequency of a common clock shared by a number of processing elements. Ex. 1004, code (57). Terrell states that "it is desirable to be able to reduce the frequency of a shared clock to the minimum frequency that allows the processing elements to function correctly while using the least amount of power." *Id.* ¶ 5. Terrell states that its goal would be desirable in "[a]n on-chip bus that hosts two or more bus masters, all of which share a common bus clock." *Id.* ¶ 8.

To implement its approach, Terrell discloses "two basic steps":

> 1. Over a sample period, measure how many clock cycles are being used by each processing element that is attached to the shared clock.
>
> 2. Adjust the system clock frequency to provide the minimum number of clock cycles required by the processing element that is using the largest number of clock cycles.

Id. ¶¶ 25–27.

1. Reason to combine

Petitioner asserts that Chen's master devices 34 and 36 send requests to change a clock frequency, and that skilled artisans would have had reason

to modify Chen's master devices so that they send requests in response to a predefined change in their performance. Pet. 42–47. Petitioner submits that "it was well-known, desirable, and taught by Terrell to save power." *Id.* at 44 (quoting Ex. 1004 ¶ 5 ("[I]t is desirable to be able to reduce the frequency of a shared clock to the minimum frequency that allows the processing elements to function correctly while using the least amount of power.")). Petitioner contends further that Chen teaches embodiments relevant to "a cost-oriented solution and/or low-frequency operations for saving power." *Id.* at 44 (citing Ex. 1003, 5:21–24, 4:36–39, 3:25–29, 3:42–44).

We agree that Chen discloses operating at lower speeds for certain circumstances. For example, Chen discloses using increased frequency for only memory read and write operations, while using lower frequency for bus arbitration and other operations. Ex. 1003, 4:24–36. Chen notes further that the system could use its high-frequency mode for all operations if the "additional cost and complexity is not a factor." *Id.* at 4:36–39. As Patent Owner points out, however, "this increased cost and complexity is fixed at the time of design regardless of whether the bus is run at higher or lower speed." PO Resp. 35–36. Thus, we find that Chen discloses the reduced fixed cost of components that operate only at a lower frequency, but does not disclose reduced power consumption when operating at a lower frequency.

While Chen does not expressly disclose power savings, the record supports a finding that skilled artisans would have understood power savings as an important consideration. *See* Ex. 1056, 386:2–4 (Patent Owner's expert, Dr. Conte, testifying in the litigation that "power savings in designing a processor" is "extremely important"). Indeed, Terrell discloses

that "it is desirable to be able to reduce the frequency of a shared clock to the minimum frequency that allows the processing elements to function correctly while using the least amount of power." Ex. 1005 ¶ 5. We conclude therefore that the prospect of achieving power savings would have motivated skilled artisans to operate Chen's system at a reduced clock frequency when not required by performance demands. *See Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380 (Fed. Cir. 2023) ("'[U]niversal' motivations known in a particular field to improve technology provide 'a motivation to combine prior art references even absent any hint of suggestion in the references themselves.'" (quoting *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 797–99 (Fed. Cir. 2021))).

Patent Owner contends that Chen and Terrell have opposite goals because Chen focuses on increasing frequency for performance while Terrell focuses on reducing frequency for power savings. PO Resp. 32–37. Petitioner, however, explains how the teachings would work together to "select a clock frequency that increases the devices' frequency only when needed, to reduce power consumption, even if the devices can use higher speeds." Pet. 45. Such a combination is consistent with Chen's teachings of increasing frequency for certain operations, and also consistent with Terrell's teachings of reducing frequency when possible. In this way, we credit Dr. Jacob's testimony that the combination would have balanced "the inherent trade-off between highest performance at the highest cost, and lower (but perhaps still acceptable) performance at a lower cost." Ex. 1055 ¶ 112. Thus, the combined system Petitioner asserts would have been able to operate at reduced frequency (conserving power) in low-activity times and increased frequency when the system required higher performance. *Id.* ¶ 117.

Because the asserted combination would have been able to satisfy a performance demand, we do not agree with Patent Owner that the combination defeats Chen's intended purpose. *See* PO Resp. 37–42. Patent Owner's interpretation, that Chen requires maximum speed at all times, is implausible in light of Terrell's recognition that systems may spend time in an idle state (Ex. 1004 ¶ 54), and Chen's disclosure of operating devices below their maximum speed (Ex. 1003, 3:42–43 ("I/O devices which normally operate at 66 M[H]z can be operated at 50 M[H]z.")). We conclude that Chen's "principle of operation and stated goal" are preserved by the asserted combination, in which bus speed is reduced when performance needs allow and then increased to the limit of a device's capabilities when required.

Patent Owner argues additionally that the asserted combination would have required modifying devices to support reduced speed, and that the required modifications would increase cost and complexity such that skilled artisans would not have made the combination. PO Resp. 42–47. Petitioner responds, on the other hand, that devices with thousands of transistors were commonplace at the time of the '759 patent's invention. Pet. Reply 18 (citing Ex. 1055 ¶¶ 118–119). We agree with Petitioner that the added complexity required by the asserted combination would not have risen to a level that skilled artisans would have been dissuaded from making the combination. In particular, we agree that, by 2005, when the application resulting in the '759 patent was filed, Terrell's approach did not present a significant technological obstacle to a skilled artisan seeking to modify Chen's system. *See* Pet. Reply 18. We credit Dr. Jacob's testimony that technology had advanced considerably following Chen's mid-1990s disclosure such that the modification would have imposed a modest

challenge. *See* Ex. 1055 ¶ 118–119. That same technological progress likewise would minimize any challenge skilled artisans would have had with modifying Chen's master devices. *See* PO Resp. 42–43. Those devices would have required only modest changes to work with the modified system, and skilled artisans implementing Chen's system in 2005 would have done so with integrated devices, thus eliminating Patent Owner's asserted need to modify a host of disparate devices. *See* Ex. 1055 ¶¶ 119, 132–137.

Patent Owner further challenges Petitioner's reliance on Terrell's statement that its teachings apply to "[a]n on-chip bus that hosts two or more bus masters, all of which share a common bus clock." Ex. 1004 ¶¶ 6, 8; PO Resp. 47–48 (citing Pet. 46). Patent Owner points out that Chen's bus 40 is a peripheral, off-chip bus and implicates different design constraints. *Id.* Petitioner contends that, regardless of whether Chen's bus is itself an on-chip bus, technological progression after Chen resulted in master devices moving on-chip and using an on-chip bus. Pet. Reply 19 (citing Ex. 1055 ¶¶ 132–137). Notwithstanding Dr. Jacob's testimony that Chen's system would be implemented differently by the time of the '759 patent, the dispute does not change our determination because, as discussed above, Petitioner has shown that skilled artisans would have made the asserted combination, aside from Terrell's statement about on-chip buses. Terrell's statement of particular applicability to on-chip buses does not undermine its separate statement regarding the desirability of reducing power consumption by reducing clock frequency when possible. Ex. 1004 ¶ 5. That express teaching shows that skilled artisans understood the possibility of reducing power by reducing frequency.

We conclude that skilled artisans had reason to arrive at the asserted combination.

2. "providing the clock frequency . . . as an output to control a clock frequency of a second master device"

Petitioner contends that, in Chen, when the first master device requests a clock-frequency change, Chen's clock gate logic 24 provides the high-speed clock on clock line 27 as an output to control a clock frequency of a second master device coupled to the bus. Pet. 48. Because the master devices may conduct "peer to peer transactions," when both indicate they support high-speed communications, they both receive the same clock frequency. Ex. 1003, 5:13–24 ("With the PCI, and some other I/O bus specifications, each device is required to receive its own unique clock signal."), 5:25–29 ("[E]ach device receives its own unique clock line which will be clocked at the appropriate frequency."), 5:59–65 (discussing peer-to-peer transfer).

Further, Petitioner contends Chen provides that same frequency to the bus to facilitate the communication. Pet. 49 (citing Ex. 1003, 2:8–14 ("In response to" a signal indicating high-frequency capability, "control logic in the bridge chip causes the higher frequency clock in the bridge chip to be activated such that the host bridge, bus and I/O device are all then operating at the higher frequency.")).

Patent Owner responds that Chen does not disclose providing the clock frequency as an output to control a clock frequency of a second master device because Chen discloses controlling only the bus frequency, not the master device frequency itself. PO Resp. 48–56. Patent Owner points to Chen's disclosure that "[c]lock gate circuit 24 causes the frequency of bus 40 to be dynamically changed (gated) by transmitting the appropriate device unique clock lines 27." *Id.* at 49–50 (quoting Ex. 1003, 3:20–22). In Patent Owner's view, Chen's clock lines 27 can serve to control the bus

frequency *or* the master devices' frequencies, but not both. *Id.* at 49. Patent Owner reasons that Chen's I/O devices "included an internal clock, separate and apart from the PCI bus clock," and thus cannot satisfy the claim language. *Id.* at 50. For support, Patent Owner cites "the OTI Sound/Fax Card," which Patent Owner views as an exemplary device from Chen. *Id.* at 50–52; PO Sur-Reply 18 (citing Ex. 1003, 1:18–22).

Chen states in its discussion of the background that "many I/O devices, such as . . . sound cards, and the like still operate at frequencies ranging from 33 M[H]z to 66 M[H]z." Ex. 1003, 1:18–22. Although Patent Owner argues the OTI Sound/Fax Card is an exemplary sound card contemporaneous with Chen, Patent Owner does not establish that all I/O devices compatible with Chen would have had internal clocks such that Chen did not provide a clock output to its I/O devices. We agree with Dr. Jacob, who testifies that Chen indicates the opposite—that its bus devices did not necessarily have separate, internal clocks. Ex. 1055 ¶ 124–126. Dr. Jacob explains that because Chen discloses distinct bus clock lines for each bus device, Chen suggests that the bus clock *does* run the devices' internal circuitry. *Id.* On Chen's shared bus, devices not involved in an active communication would have no need for their bus interfaces to remain active, so there would be no point to sending them a clock signal different from the active bus clock. If, instead, those devices were relying on the bus clock for more than bus communication—i.e., to run their internal circuity—then sending the distinct clock signal at a frequency different from active bus communication would allow those devices to remain operational while bus communication occurs with other devices. *Id.* Because multiple distinct clock lines come at a cost, Chen's designers would only include those clock lines if they provided a benefit. *Id.* Based on the record, we agree with

Petitioner and find that at least some of Chen's bus devices use the bus clock to control their internal operations.

Moreover, we do not agree with Patent Owner's implicit claim construction that "providing the clock frequency . . . to control a clock frequency of a second master device" refers only to "the internal clock frequency of the master device, not to an I/O bus frequency" PO Resp. 52 (citing Ex. 2065 ¶ 186). To assert that Chen does not teach providing the clock to control a clock frequency of a second master device, Patent Owner relies on the testimony of Dr. Conte. Dr. Conte explains that in the exemplary OTI Sound/Fax Card, "the LCLK is an input clock – the PCI clock – that would allow the OTI Sound/Fax Card to communicate over the PCI bus" and "is separate from and has nothing to do with an internal clock source (MCLKSR) of the OTI Sound/Fax Card." Ex. 2065 ¶ 186. Dr. Conte concludes that skilled artisans "would understand that the I/O bus clock in Chen has nothing to do with the internal clock of the I/O device (such as the OTI Sound/Fax Card's MCLKSR clock)." *Id.* Dr. Conte does not explain why "a clock frequency of a second master device" is restricted as a matter of claim construction to an internal clock frequency separate from the commanded bus frequency. Without a sound basis in the intrinsic record—which Patent Owner has not explained—we decline to limit "a clock frequency of a second master device" as a matter of claim construction to "an internal clock separate and apart from the bus clock" as Patent Owner seeks. PO Resp. 50–52 (distinguishing I/O devices with "an internal clock . . . separate and apart from the PCI clock"); Pet. Reply 21; Ex. 1055 ¶ 94–96 (explaining that controlling "a clock frequency" includes "controlling the device's data-interface frequency"); *see supra* at 12 (§ II.A.3). Accordingly, we agree with Petitioner that "Chen's master devices and bus would be

clocked to the same frequency when conducting transactions over the bus" and that, therefore, "it is irrelevant whether such devices could also have other clocks within them." Pet. Reply 21.

Relatedly, Patent Owner argues that Chen's "clock line 27 output by clock gate logic 24" can satisfy only one of the limitations that require both (1) an output to the second master device and (2) an output to the bus. PO Resp. 53–55. We do not agree, in light of Chen's disclosure that "control logic in the bridge chip causes the higher frequency clock in the bridge chip to be activated such that the host bridge, bus and I/O device are all then operating at the higher frequency." Ex. 1003, 2:8–14; *accord id.* at 4:63–5:5 ("Clock gate logic 24 will then enable the high frequency clock 26 and drive bus 40 at 100M[H]z."). Chen's disclosures support that clock gate logic 24 provides the clock frequency to both the bus itself (via the bridge chip) and the bus devices (via the distinct device clock lines).

In view of the foregoing, we find that Chen discloses providing the clock frequency of the high-speed clock as an output to control a clock frequency of a second master device coupled to the bus and as an output to control a clock frequency of the bus.

3. Conclusion

We have considered the full record, including evidence and arguments presented by Petitioner and Patent Owner on whether Chen and Terrell teach or suggest claim 1's limitations, whether there was a reason that skilled artisans at the time would have combined Chen and Terrell as asserted, and whether objective indicia indicate the claims would not have been obvious. Based on the full record, we conclude that Petitioner has shown by a preponderance of the evidence that claim 1 would have been obvious over

Chen and Terrell. Patent Owner's arguments discussed above apply to claims 1 and 14. *See* PO Resp. 48–49. We conclude that Petitioner has shown by a preponderance of the evidence that claim 14 would have been obvious over Chen and Terrell. Pet. 49–52.

Petitioner relies on Chen and Terrell as disclosing the additional limitations of claim 17, which depends from claim 14. Pet. 52–53. Patent Owner does not challenge those contentions. We have reviewed Petitioner's contentions and determine that Petitioner has shown claim 17 would have been obvious over Chen and Terrell.

E. Obviousness over Chen, Terrell, and Kiriake (Claims 18, 21, 22, 24)

For independent claim 18, Petitioner relies on its claim 1 contentions, additionally addressing the unique claim language and asserting that Kiriake discloses both master devices and the claimed arbiter. Pet. 54–59. For claims 21, 22, and 24, each of which depends from claim 18, Petitioner points to Chen's additional disclosures that render obvious the additional limitations. Pet. 59–60. Patent Owner does not challenge those contentions. We have reviewed Petitioner's contentions and determine that Petitioner has shown claims 18, 21, 22, and 24 would have been obvious over Chen, Terrell, and Kiriake.

F. Patent Owner's Motion to Exclude

Patent Owner moves to exclude Dr. Jacob's Declarations (Ex. 1002 and Ex. 1046, "Original Declarations") as inadmissible hearsay under Federal Rules of Evidence 801 and 802. Paper 88 ("PO Mtn. Exclude"). Patent Owner argues that the Original Declarations were not "executed in connection with the current proceeding, and therefore were not made 'while

testifying at the current trial or hearing.'" PO Mtn. Exclude, 2–3; Fed. R. Evid. 801(c)(1).[10] Patent Owner asserts that the Board was incorrect in the Institution Decision when we concluded that cross-examination would address hearsay concerns. *Id.* at 4. Finally, Patent Owner contends that no hearsay exceptions apply, citing Fed. R. Evid. 804(b)(1), 803(18).

Petitioner argues that Dr. Jacob's Original Declarations are not inadmissible hearsay. Paper 94 ("Pet. Opp. Mtn. Exclude"), 11. Petitioner points to 37 C.F.R. § 42.53(a), which states "[u]ncompelled direct testimony must be submitted in the form of an affidavit." *Id.* Despite that the Original Declarations were prepared for another proceeding, Petitioner argues that they are not hearsay because (1) they were submitted as sworn witness statements in lieu of live testimony in this proceeding, (2) Dr. Jacob reaffirmed them in the joinder proceeding (IPR2022-00366, Ex. 1049), and (3) Dr. Jacob was subject to cross-examination on the contents of the Original Declarations in this proceeding. *Id.* at 12–13. Indeed, during cross-examination, Dr. Jacob confirmed that the Original Declarations set forth his opinions regarding the '759 patent. Ex. 2066, 69:12–17 (identifying Ex. 1002), 72:11–21 (identifying Ex. 1046), 73:4–10 (confirming the declarations set forth his opinions).

We agree with Petitioner and deny Patent Owner's motion because Dr. Jacob's cross-examination and his confirmation of the declarations in this proceeding address Patent Owner's hearsay concern.[11] IPR testimony is

[10] Petitioner does not dispute that Dr. Jacob's Original Declarations are offered "to prove the truth of the matter asserted." PO Mtn. Exclude 3; Fed. R. Evid. 801(c)(2).

[11] Patent Owner's argument that OpenSky did not contact Dr. Jacob before filing its Petition with Dr. Jacob's Declarations is not persuasive in light of his willingness to testify in this proceeding. PO Mtn. Exclude 6–10.

different from that in district courts. Notably, the Board's rules generally do not allow an expert to "testify" in person at an IPR hearing. *See* 37 C.F.R. § 42.53 (a)–(b)(1); 35 U.S.C. § 316(a)(5); 35 U.S.C. § 23. Testimony is instead submitted as evidence in the form of affidavits and deposition transcripts. *See* 37 C.F.R. §§ 42.53, 42.63. Our rules, therefore, contemplate that declarants in IPRs do not "testify" in the traditional sense of giving live testimony in a courtroom.

As other Board decisions have noted, "[w]ithout exception, the Board accepts the filing of sworn witness declarations in lieu of live testimony in administrative patent trials." *Grünenthal Gmbh v. Antecip Bioventures II LLC*, PGR2018-00062, Paper 32 at 15 (PTAB Oct. 29, 2019). Our procedures adopt that practice for its efficiency and ensure fairness by allowing cross-examination. *See id.*; 37 C.F.R. § 42.51(b)(ii). Dr. Jacob has made himself available for cross-examination and confirmed that the declarations express his opinions here, in this proceeding. Thus, in these respects, the Original Declarations are no different than the other testimony relied on by the parties, and are not hearsay subject to exclusion.

Indeed, during his cross-examination, Dr. Jacob confirmed that the Original Declarations set forth his opinions regarding the '759 patent. Ex. 2066, 69:12–17 (identifying Ex. 1002), 72:11–21 (identifying Ex. 1046), 73:4–10 (confirming the declarations set forth his opinions). In Intel's proceeding asserting the same grounds and seeking joinder, Dr. Jacob filed a declaration reaffirming his Original Declarations and confirming that he would appear for cross-examination. IPR2022-00366, Ex. 1049. We noted that Dr. Jacob's reaffirming declaration and availability for cross-examination allayed concerns about hearsay. Paper 43 (joinder decision), 15. While the reaffirming declaration is not of record in this proceeding,

Dr. Jacob's deposition in this proceeding and statements confirming his opinions serve the same role. Patent Owner has suffered no prejudice from Dr. Jacob's Original Declarations.

We have considered Patent Owner's other arguments (Paper 95) and find them just as unavailing. The fact that the Jacob declarations were prepared for another proceeding is immaterial in this case because Dr, Jacob has expressly adopted them for *this* proceeding. *Id.* at 1–3. Nor is a hearsay exception necessary, as the reaffirmance of the prior testimony by Dr. Jacob and his cross-examination *in this proceeding* overcomes any plausible hearsay argument or the necessity for a hearsay exception. *Id.* at 3–5. Finally, there is no merit to Patent Owner's suggestion (*id.* at 5) that reliance on Dr. Jacob's reply declaration is somehow contrary to our procedures, which specifically provide for replies by the petitioner (including new declarations). *See* USPTO Consolidated Trial Practice Guide 73 (Nov. 2019).[12]

For the reasons given, we deny Patent Owner's Motion to Exclude.

III. CONCLUSION[13]

For the reasons discussed and based on the entire record, Petitioner has shown by a preponderance of the evidence that claims 1, 14, 17, 18, 21,

[12] Available at https://www.uspto.gov/TrialPracticeGuideConsolidated.

[13] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of

22, and 24 are unpatentable. Patent Owner has not shown that we should exclude Exhibits 1002 and 1046.

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1, 14, 17	103	Shaffer, Lint	1, 14, 17	
18, 21, 22, 24	103	Shaffer, Lint, Kiriake	18, 21, 22, 24	
1, 14, 17	103	Chen, Terrell	1, 14, 17	
18, 21, 22, 24	103	Chen, Terrell, Kiriake	18, 21, 22, 24	
Overall Outcome			1, 14, 17, 18, 21, 22, 24	

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner has shown by a preponderance of the evidence that claims 1, 14, 17, 18, 21, 22, and 24 are unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Exclude (Paper 88) is denied; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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[redacted]

PUBLIC VERSION

Director_PTABDecision_Review@uspto.gov
571-272-7822

Paper 141
Dated: December 15, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE OFFICE OF THE UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

OPENSKY INDUSTRIES, LLC,
INTEL CORPORATION,
Petitioners,

v.

VLSI TECHNOLOGY LLC,
Patent Owner.

IPR2021-01064[1]
Patent 7,725,759 B2

Before KATHERINE K. VIDAL, *Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office*.

ORDER
Granting Motion for Fees

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[1] Intel Corporation ("Intel"), which filed a petition in IPR2022-00366, has been joined as a party to this proceeding. Paper 43.

[redacted]

[redacted]

PUBLIC VERSION

I. INTRODUCTION

On October 4, 2022, I issued my decision on Director Review. Paper 102 ("Decision" or "Dec."). In my Decision, I determined that Petitioner OpenSky Industries, LLC ("OpenSky") abused the *inter partes* review ("IPR") process in an attempt to extract payment from both Patent Owner VLSI Technology LLC ("VLSI") and Petitioner Intel, who was joined to the proceeding. *Id.* at 3. I also determined that OpenSky engaged in discovery misconduct and unethical conduct, and violated my express orders in the Director Review process. *Id.* at 2–4. Due to OpenSky's actions, I ordered "OpenSky to show cause as to why it should not be ordered to pay compensatory damages to VLSI, including attorney fees, to compensate VLSI for its time and effort in this proceeding." *Id.* at 4. "I further order[ed] OpenSky to address the appropriate time period for which any fees should be assessed." *Id.*

Following briefing by the parties (Papers 116, 117, 119, 120), I issued an order awarding reasonable fees as sanctions against OpenSky and authorizing VLSI to file a Motion for Fees. Paper 127.[2] Specifically, I determined that it was appropriate to award attorney fees to VLSI for the time spent addressing OpenSky's abusive behavior. *Id.* at 2, 13. I further issued an Order authorizing VLSI to submit declaratory evidence attesting to the facts set forth in its Motion for Fees, and OpenSky to file an objection to

[2] As previously discussed in Paper 127, this Order addresses only sanctions imposed against a party. It does not address, nor does it preclude, potential sanctions or discipline against those who practiced before the USPTO on behalf of the party. *See* 37 C.F.R. § 11.18(c)(2).

any evidence submitted by VLSI. Paper 134. VLSI filed its Motion for Fees (Paper 130, "Motion" or "Mot.") and accompanying evidence (Exhibits 2126–2135). OpenSky opposed the motion (Paper 131, "Opposition" or "Opp.") and objected to the evidence (Paper 137, "Objection" or "Obj.").

On July 13, 2023, VLSI and OpenSky each filed an appeal to the U.S. Court of Appeals for the Federal Circuit. Paper 139; Paper 140. On December 7, 2023, the Federal Circuit remanded the case back to the U.S. Patent and Trademark Office ("USPTO" or "the Office") to resolve any remaining sanctions issues. *See* Ex. 3027.

Based on the evidence and arguments, I award VLSI $413,264.15 in fees.

II. ADDRESSING THE PARTIES' ARGUMENTS

VLSI argues that its requested fees are reasonable in both time spent and rates billed. *See* Mot. 2. OpenSky argues that I should reject VLSI's requested fees because: (A) OpenSky objects to Exhibits 2126–2135 and argues that VLSI has not submitted proper evidence in support of its request; (B) VLSI does not establish that the sought fees relate to OpenSky's abuse of process; and (C) VLSI has unclean hands. *See* Opp. 1; Obj. 1.

I address the parties' arguments and OpenSky's objections below.[3]

[3] I do not address OpenSky's arguments in its Objection that do not relate to VLSI's submitted evidence. *See* Obj. 2, n.1. To the extent OpenSky substantively argued against the Order to Show Cause (Papers 116, 120), I previously addressed these arguments (*see* Paper 127, "Order Restoring OpenSky as a Party, Awarding Sanctions, and Authorizing a Motion for Fees").

A. Admissible Evidence

OpenSky objects to VLSI's evidence submitted as Exhibits 2126–2135 for failing to comply with 37 C.F.R. § 42.62(a), 5 U.S.C. § 556(d), and the applicable Federal Rules of Evidence. *See* Obj. 1. OpenSky argues that the Exhibits should be excluded from the proceeding and expunged from the record. *Id.* OpenSky argues that without the Exhibits, "VLSI's motion lacks the necessary substantial evidence support and should be denied." *Id.* For the reasons set forth below, I reject OpenSky's objections as to Exhibits 2126–2129, 2134, and 2135. I do not rely on Exhibits 2130–2133 and dismiss OpenSky's objections to those exhibits as moot.

1. VLSI's Tables of Billing Statements (Ex. 2126)

The parties agree that reasonable attorney fees may be determined "based on the 'lodestar,' *i.e.,* the number of hours worked multiplied by the prevailing hourly rates." *See* Mot. 2 (citing *Perdue v. Kenny A.*, 559 U.S. 542, 546 (2010)); Opp. 3 (citing *Hensley v. Eckerhart*, 461 U.S. 424, 433 (1983) ("The most useful starting point for determining the amount of a reasonable fee is the number of hours reasonably expended on the litigation multiplied by a reasonable hourly rate.")). Under the lodestar method, "the fee applicant bears the burden of establishing entitlement to an award and documenting the appropriate hours expended and hourly rates." *Hensley*, 461 U.S. at 437. Fee applicants routinely satisfy the burden of showing reasonable hours expended by submitting invoices and billing records. *Rumsey v. Dep't of Just.*, 866 F.3d 1375, 1379 (Fed. Cir. 2017). VLSI submitted a Table of Billing Statements (Ex. 2126, "Billing Statement") to satisfy its burden as the fee applicant. *See* Mot. 6–12. OpenSky objects to

VLSI's Billing Statement, arguing that the Billing Statement is not admissible evidence and does not qualify as contemporaneous time records for the lodestar calculation. *See* Opp. 4; Obj. 3–8.

I first address OpenSky's arguments that the Billing Statement should be excluded entirely. *See* Opp. 4–5; Obj. 3–8. OpenSky objects to the Billing Statement as impermissible hearsay under Rules 801 and 802. Obj. 3–8. OpenSky also objects to the Billing Statement under Rules 401–403 as an "after-the fact" reconstruction rather than a contemporaneous billing record. *See id.* at 6–7. OpenSky further objects to the Billing Statement as lacking authentication because VLSI's "attorney declarations (Exhibit Nos. 2127–2129) cannot authenticate Exhibit 2126." *Id.* at 6. Finally, OpenSky objects to the Billing Statement as incomplete under Rule 106 and not the best evidence under Rules 1001–1003. *See id.* at 7–8.

I am not persuaded by OpenSky's arguments to entirely exclude the Billing Statement. VLSI's counsel declare that the Billing Statement was prepared by the attesting counsel who "personally went through contemporaneous billing entries" of attorneys at two law firms and listed the appropriate records in the Billing Statement. *See* Ex. 2127 ¶ 19; Ex. 2128 ¶ 14; Ex. 2129 ¶ 3. VLSI's counsel declare that the billing entries listed in the Billing Statement were cross-referenced with other contemporaneous records to ensure accuracy and responsiveness. *Id.* As discussed below, VLSI's counsel qualify as someone with knowledge of the billing entries.

OpenSky cites a series of cases to argue that "[c]ourts routinely reject after-the-fact reconstructions of billing records and insist on originals," and therefore Exhibit 2126 is "improper." *See* Obj. 6–7; *see also* Opp. 3–5. In

context, however, "after-the-fact reconstructions" means situations where billing attorneys did not keep contemporaneous records of the time spent on a matter and therefore had to go back, after the court awarded fees, to determine (i.e., reconstruct) how much time they had spent working on the case. *See, e.g.*, *National Ass'n of Concerned Veterans v. Secretary of Defense*, 675 F.2d 1319, 1327 (D.C. Cir. 1982) ("Casual after-the-fact estimates of time expended on a case are insufficient to support an award of attorneys' fees"); *Leroy v. City of Houston*, 831 F.2d 576, 585 (5th Cir. 1987) (finding that the district court "repeatedly acknowledged deficiencies in the billing records in this case, noting that some were reconstructed, after-the-fact summaries . . . ."); *Heller v. District of Columbia*, 832 F. Supp. 2d 32, 49–56 (D.D.C. 2011) (determining that certain attorneys "failed to keep contemporaneous time records, and, instead, provided the Court with reconstructed timesheets.").

Even in situations where fee applicants relied on reconstructed billing entries, courts have reduced the lodestar rather than entirely exclude the evidence. *See Heller*, 832 F. Supp. 2d at 49–56; *Leroy*, 831 F.2d at 585–86 (5th Cir. 1987); *Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 932 F.2d 1453, 1459 (Fed. Cir. 1991). In *Heller*, for example, the court found the failure to keep contemporaneous records "deeply troubling." *Id.* at 50. In view of this defect, the court reduced the number of hours "by 10% in order to account for any inaccuracies or overbilling that may have occurred as a result of these attorneys' unacceptable timekeeping practices." *Id.*

There is no evidence that Exhibit 2126 is an after-the-fact reconstruction within the meaning of OpenSky's cited cases. Instead,

VLSI's counsel "went through contemporaneous billing entries to ensure that they fell within the scope of the Fee Order." Ex. 2129 ¶ 2. Counsel then "made reductions or exclusions if the entries did not solely apply to the 1064 IPR." Ex. 2129, ¶ 3; *see also* Ex. 2127 ¶ 19 and Ex. 2128 ¶ 14. "These itemized billing entries, and their reductions, were entered as Ex. 2126." Ex. 2129, ¶ 3. This evidence demonstrates that, unlike the reconstructed entries in *Heller* and *Leroy*, VLSI's Billing Statement is based on contemporaneous billing records. *See* Ex. 2126; Ex. 2127 ¶ 19; Ex. 2128 ¶ 14; Ex. 2129 ¶¶ 2–3. Therefore, I am not persuaded by OpenSky's argument.

I am also not persuaded by OpenSky's remaining objections to the Billing Statement. OpenSky objects to the Billing Statement under Rules 401–403 because the exhibit is not a contemporaneous billing record. Obj. 6. I reject this objection under Rules 401–403 because the Billing Statement is relevant evidence to the time and fees expended by VLSI to address OpenSky's misconduct, *see* Rule 401, and OpenSky does not attempt to argue that its probative value is substantially outweighed by, for example, unfair prejudice, *see* Rule 403. I reject OpenSky's objection under Rule 901 for lack of authentication, because VLSI's counsel's declarations provide foundation for the Billing Statement, as they declare that "Ex. 2126 is a true and accurate copy of the amount of time spent and work done regarding the 1064 IPR that we believe is permitted under the Fee Order." Ex. 2127 ¶ 19; Ex. 2128 ¶ 14; Ex. 2129 ¶ 3; *see also Bellflower Unified Sch. Dist. v. Arnold*, 586 F. Supp. 3d 1010, 1015 (C.D. Cal. 2022) (finding sufficient foundation where fee applicant's counsel "declared that he reviewed the

invoices on this matter, including the rates and hours billed by each attorney for services rendered in this litigation, and that they are reflected in the Billing Statement as an exhibit").

OpenSky objects to the Billing Statement under Rule 106 because the "exhibit is incomplete and purports to include and rely on portions of other documents that in fairness should be considered along with this document." *See* Obj. 7. Instead, OpenSky seeks to introduce "the remainders of those billing invoices." *Id.* However, that would require VLSI submitting time spent on other unrelated matters, as its counsel already reviewed the relevant time entries and listed the appropriate records in the Billing Statement. *See supra.* Accordingly, Rule 106 does not apply. Rule 106 "is designed to avoid creating a misleading impression by taking a statement out of its proper context, or otherwise conveying a distorted picture to the [fact finder] by the selective introduction of documents that are part of a comprehensive whole." *Merrick v. Mercantile-Safe Deposit & Tr. Co.*, 855 F.2d 1095, 1103–04 (4th Cir. 1988). There is no indication that the billing entries listed in the Billing Statement have been taken out of context or otherwise create a distorted picture that would be different from contemporaneous billing records. As discussed above, the Billing Statement itself is relevant evidence for determining reasonable attorney fees. *See Beech Aircraft Corp. v. Rainey*, 488 U.S. 153, 172 (1988) ("[A]s the general rules of relevancy permit a ready resolution to this litigation, we need go no further in exploring the scope and meaning of Rule 106.")

OpenSky objects to Exhibit 2126 under Rules 1001–1003 "because this exhibit is not the best evidence." Obj. 7–8. However, "Rule 1002

applies not when a piece of evidence sought to be introduced has been somewhere recorded in writing but when it is that written record itself that the party seeks to prove. The rule requiring the production of the original document applies only when the proponent is attempting to prove the contents or terms of a writing." *R & R Assocs., Inc. v. Visual Scene, Inc.*, 726 F.2d 36, 38 (1st Cir. 1984) (internal citation omitted); *see also Ecological Rts. Found. v. U.S. Env't Prot. Agency*, 541 F. Supp. 3d 34, 51 (D.D.C. 2021) ("[T]he best evidence rule is a rule of preference, not a solid bar on secondary evidence.") (internal quotes omitted). As discussed above, the Billing Statement itself is admissible evidence and acts as an original print-out of billing entries relevant to this proceeding. *See* Rule 1001(d). Accordingly, I reject OpenSky's objection under Rules 1001–1003.

2. VLSI's Declaratory Evidence (Exhibits 2127–2129)

OpenSky objects to the admissibility of Exhibits 2127–2129, declarations by VLSI's counsel, under F.R.E. 602, 701–703, 801, and 802; and 37 C.F.R. § 42.65. Obj. 8–17. To the extent that I do not rely on portions of Exhibits 2127–2129 in this Order, I reject OpenSky's objections as moot. As to the remaining objections, because OpenSky raises the same objections for all three declarations by VLSI's counsel, I address them together.

First, OpenSky objects to Exhibits 2127–2129 under Rule 602. Obj. 8–9, 12–15. Specifically, OpenSky objects to testimony about the "preparation of Exhibit 2126" in that the declarants lacked personal knowledge of the attested facts, including other attorneys' billing entries. *See id.* "Declarations in support of attorney fee awards should be based

upon personal knowledge." *Muniz v. United Parcel Serv., Inc.*, 738 F.3d 214, 222 (9th Cir. 2013) (finding inadmissible hearsay where declarant did not have personal knowledge of paralegal's reconstructed hours). However, "personal knowledge can come from the review of the contents of business records and an affiant may testify to acts that she did not personally observe but which have been described in business records." *Banga v. First USA, NA*, 29 F. Supp. 3d 1270, 1274 n.2 (N.D. Cal. 2014). The Seventh Circuit similarly held that an attorney's affidavit submitted on the issue of attorney fees with a billing statement listing other attorneys and paralegals was admissible under Rule 602 "as lay witness testimony on matters about which he has personal knowledge." *Lock Realty Corp. IX v. U.S. Health, LP*, 707 F.3d 764, 773 (7th Cir. 2013). Specifically, the court held that

> the affidavit taken as a whole amply demonstrated that [the affiant] had personal knowledge of the facts presented in the affidavit and was competent to testify to them. His affidavit supported a finding that the rates reflected in the billing sheets were the actual rates charged by the attorneys and paralegals who worked on the case, and that these rates were consistent with market rates in the area.

Id. Similarly, the declarants in this proceeding testify they have personal knowledge from reviewing the contents of contemporaneous billing entries that reflect the actual rates charged by the attorneys who worked on the case. *See* Ex. 2127 ¶¶ 18, 19; Ex. 2128 ¶¶ 13, 14; Ex. 2129 ¶ 3. Moreover, the declarations as a whole demonstrate that the declarants have personal knowledge of the facts presented in the declarations and are competent to testify to them. *See* Ex. 2127 ¶¶ 8–12; Ex. 2128 ¶¶ 6–10; Ex. 2129 ¶¶ 2–3.

Accordingly, I reject OpenSky's objection to Exhibits 2127–2129 under Rule 602.

Second, OpenSky objects to Exhibits 2127–2129 under Rules 701–703. Obj. 9, 13, 15–16. OpenSky objects to Exhibits 2127–2129 under Rule 701 for failing "to disclose the underlying facts or data on which the opinion is based" (*id.* at 9, 15), or being offered "outside of [the declarant]'s areas of expertise" (*id.* at 15). A lay opinion under F.R.E. 701 must be: (a) rationally based on the witness's perception, (b) helpful to clearly understanding the witness's testimony or to determining a fact in issue; and (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702. *See* F.R.E. 701; *Union Pac. Res. Co. v. Chesapeake Energy Corp.*, 236 F.3d 684, 693 (Fed. Cir. 2001). Each of the declarants explains that their testimony is based on their personal review of contemporaneous billing entries that are represented in the Billing Statement. *See* Ex. 2127 ¶¶ 18, 19; Ex. 2128 ¶¶ 13, 14; Ex. 2129 ¶ 3. Further, the testimony is helpful in determining the attorney fees at issue in this proceeding and is not based on expert knowledge. *See id.* Although OpenSky argues that the declarants have not "demonstrated expertise to make . . . judgments" relating to which billing entries are within the scope of the fee order (for example, because certain of the declarants are not admitted to practice before the USPTO) (Obj. 16), OpenSky cites no authority that such expertise is required. OpenSky was free to challenge the exercise of judgment by challenging any billing entries VLSI included. Accordingly, I reject OpenSky's objections under Rule 701. VLSI does not offer Exhibits

2127–2129 as expert testimony. Thus, OpenSky's objections under Rule 702 and 703 do not apply.

OpenSky separately argues that Ms. Wen (the declarant of Ex. 2129) and other attorneys are not registered to practice before the USPTO and were not admitted *pro hac vice*, and therefore are not authorized to practice in this proceeding. *See* Obj. 16, n. 3. OpenSky does not specifically state how this point relates to its argument (the status of other attorneys is irrelevant to its argument that Ms. Wen did not have the expertise to make judgments relating to which billing entries to include), but appears to contend that fees by attorneys not authorized to practice in this proceeding may not be recovered. *See id.* OpenSky cites no authority for the proposition that counsel must be "authorized to practice in [a] proceeding," (*id.* at 16 n.3), for their hours to be eligible for compensation via a fees award. As OpenSky has provided no legal support for its position, I reject it. Moreover, USPTO regulations permit practitioners to use non-practitioners under their supervision "to assist the practitioner in matters pending or contemplated to be presented before the Office." 37 C.F.R. § 11.5(b); *see also id.* § 11.503. Fees accrued by others involved in this proceeding supported the work of designated lead and backup counsel. Thus, I reject OpenSky's objections regarding the attorneys allegedly not authorized to practice in this proceeding.

Third, OpenSky objects to Exhibits 2127–2129 as impermissible hearsay under Rules 801 and 802. Obj. 9–10, 13–14, 17. For example, OpenSky argues that paragraphs 4, 7, and 8 of Exhibit 2127 refer to "various out-of-court statements about awards or favorable press coverage regarding

Mr. Lowenstein[, Mr. Weatherwax,] or the Lowenstein Weatherwax firm." *Id.* at 9–10. I do not rely on these out-of-court statements in my fee calculation and, therefore, OpenSky's objection is moot as to paragraphs 4, 7, and 8.

OpenSky argues that paragraphs 13, 14, 18, and 19 of Exhibit 2127 contain hearsay relating to other firms' billing rates or actions. *Id.* at 10. I do not rely on paragraphs 13 and 14 that discuss other firms' billing rates and, therefore, OpenSky's objection is moot as to those paragraphs. Paragraphs 18 and 19 do not relate to out-of-court statements or assertions and thus are not hearsay.

Finally, OpenSky argues that paragraphs 22–26, 28, 30, 31, 33–40, and 42 of Exhibit 2127, and paragraphs 21–25, 27, and 28 of Exhibit 2128 are hearsay because they purport to provide testimony about the contents of the Billing Statement. *Id.* at 10–11, 13–14. As discussed above, the Billing Statement was prepared by the declarants of Exhibits 2127–2129. Accordingly, I reject OpenSky's objection to these paragraphs.

3. VLSI's Third-Party Documents (Exhibits 2130–2135)

OpenSky objects to the admissibility of Exhibits 2130–2135 under Rules 401–403, 801, 802, 901, and 902. Obj. 17–19. OpenSky also argues that these exhibits violate the May 8 Order by exceeding the scope of permitted submissions. *Id.* at 17 (citing Paper 134, 4). I address the scope of my May 8 Order, followed by OpenSky's evidentiary objections below.

In my Order, I authorized VLSI to submit evidence regarding the prevailing market rates for comparably experienced attorneys handling

litigation before the Patent Trial and Appeal Board. Paper 134, 4. As an example, I listed the American Intellectual Property Law Association's ("AIPLA") Economic Survey that lists the billing rates for intellectual property attorneys based on their degree of experience. *Id.*; *see View Eng'g, Inc. v. Robotic Vision Sys., Inc.*, 208 F.3d 981, 987–988 (Fed. Cir. 2000).

OpenSky argues that Exhibits 2130–2135 violate the scope of my May 8 Order because the references "are neither declaratory evidence nor evidence of prevailing market rates for comparably experienced attorneys handling litigation before the Patent Trial and Appeal Board." Obj. 17–18. OpenSky requests that I expunge these exhibits. *See id.*

I do not rely on Exhibits 2130–2133 in my fee determination, and I dismiss OpenSky's objection to these exhibits as moot. Exhibits 2134 and 2135 describe the rates charged by intellectual property attorneys with equivalent experience. *See View Eng'g*, 208 F.3d at 987; *see* Ex. 2134, 5 ("All the analyses included in the report derive from the actual rates charged by law firm professionals as recorded on invoices submitted and approved for payment."); *see* Ex. 2135 ("[F]or private practitioners, data were collected for billable hours, rates, and the amount billed for legal services."). Exhibits 2134 and 2135 are relevant for determining whether the requested rates are in line with those prevailing in the community for similar services of lawyers of reasonable comparable skill and reputation. Accordingly, OpenSky's argument that I did not authorize submission of Exhibits 2134 and 2135 is not well taken, and I deny OpenSky's request to expunge Exhibits 2134 and 2135.

OpenSky objects to Exhibits 2134 and 2135 under Rules 401–403 as not relevant. *See* Obj. 18–19. Specifically, OpenSky argues that Exhibit 2134 reports data compiled for very large law firms, unlike Lowenstein & Weatherwax, and "Exhibit 2135 is dated September 2021" and does not have "any bearing to VLSI's fee request (which is limited to the period between June 8, 2021 and December 5, 2022)." *See id.* Neither argument is persuasive. As discussed previously, Exhibits 2134 and 2135 are relevant for identifying the prevailing rates in the intellectual property community during a time period relevant to this proceeding. Both provide a useful point of comparison for determining the lodestar. *See Biery v. United States*, 818 F.3d 704, 714 (Fed. Cir. 2016) (holding that it is within a court's discretion to "use either the Adjusted *Laffey* Matrix or the Kavanaugh Matrix and any departure, or no departure, from the rates they suggest."). Accordingly, Exhibits 2134 and 2135 are relevant under Rule 401–402, and I reject OpenSky's objection. OpenSky does not argue that the probative value of the exhibits is outweighed by, e.g., undue prejudice under Rule 403, and therefore I reject OpenSky's objection based on that rule as well.

OpenSky objects to Exhibits 2134 and 2135 as inadmissible hearsay under Rules 801 and 802. Obj. 19. OpenSky argues that VLSI relies on Exhibits 2134 and 2135 for "various out-of-court statements about billing rates." *Id.* However, Exhibits 2134 and 2135 are both market reports that are generally relied on by the public or persons in particular occupations. *See* F.R.E. 803(17). Because Exhibits 2134 and 2135 fall under a hearsay exception, I reject OpenSky's objections under Rules 801 and 802.

OpenSky lists an objection under Rules 901 and 902 but provides no explanation or argument for this objection. *See* Obj. 17–19. Because there is no argument that addresses this objection, I dismiss the objection.

B. Fees Linked to OpenSky's Misconduct

OpenSky argues that "VLSI says nothing to explain how the fees sought were caused by OpenSky's misconduct as required by the Director's order and *Goodyear Tire & Rubber Co. v. Haeger*, 581 U.S. 101, 103–104 (2017)." Opp. 5. Contrary to OpenSky's argument, VLSI explained how the requested fees are associated with OpenSky's misconduct. *See* Mot. 8–12. Accordingly, I am not persuaded by OpenSky's argument against the entirety of VLSI's fees. I apply the billing entries to the fee calculation below.

C. VLSI's Misconduct not at Issue

OpenSky argues that "VLSI has engaged in serious litigation misconduct throughout the entire proceeding" and should not be awarded fees under the "unclean-hands doctrine." *See* Opp. 6–8. Specifically, OpenSky argues "that VLSI has unclean hands in this proceeding because VLSI made misrepresentations of law and fact and violated an NDA in an effort to avoid institution and thereby 'enhance' VLSI's position." *Id.* at 7–8 (quoting *Gilead Scis., Inc. v. Merck & Co.*, 888 F.3d 1231, 1240 (Fed. Cir. 2018)). OpenSky further refers to VLSI's actions in another proceeding, IPR2021-01229, as evidence of unclean hands. *See id.* at 8.

I do not agree that VLSI's alleged misconduct excuses OpenSky's abusive behavior. To the extent that VLSI mispresented issues of fact and

law, I addressed VLSI's misconduct separately in this proceeding. *See* Paper 121, 4.

III. CALCULATING THE LODESTAR

"In calculating an attorney fee award, a district court usually applies the lodestar method, which provides a presumptively reasonable fee amount, by multiplying a reasonable hourly rate by the reasonable number of hours . . . ." *Lumen View Tech. LLC v. Findthebest.com, Inc.*, 811 F.3d 479, 483 (Fed. Cir. 2016) (internal citation omitted). I previously determined that it is appropriate to award attorney fees to VLSI for the time spent addressing OpenSky's abusive behavior, including the Director Review process in its entirety.[4] Paper 127, 2. Accordingly, I examine VLSI's hours submitted for the time spent in addressing OpenSky's abusive behavior and the hourly rate charged by VLSI's counsel.

A. Reasonable Number of Hours

VLSI argues that the "unique challenges" of this proceeding required employing two law firms, Lowenstein & Weatherwax ("L&W") and Irell & Manella ("Irell"). Mot. 3–4. VLSI further argues that this proceeding is unusual and complex, raises questions of first impression, and deals with issues important to the Office in fulfilling its mission. *Id.* at 3 (citing Paper 121, 5; Dec. 2). VLSI divides its billing entries for both law firms into the various parts of this proceeding. *See id.* at 6–12. OpenSky responds to VLSI's arguments as to each part of the proceeding, arguing that the

[4] To the extent VLSI requests attorney fees for activity outside this IPR and Director Review, I reject that request and exclude the requested amount from the sanction against OpenSky. *See* Paper 127, 2, 13–15.

requested fees must be reduced or excluded. *See* Opp. 8–19 (citing Ex. 1068). Accordingly, I address the parties' arguments as to each part of the proceeding in turn.

1. Pre-Institution Activities

VLSI asserts that it spent time addressing OpenSky's misconduct prior to the Board's Institution Decision, including preparing the Patent Owner Preliminary Response ("POPR") and the Board-authorized Preliminary Sur-reply. Mot. 6–8. VLSI argues that its pre-institution briefs reflect this argument as VLSI "maintained that OpenSky was a 'prospector,' 'seek[ing] a payout,' and 'under no threat of infringement allegations,' and that its 'harassment should not be encouraged'" from the beginning of this proceeding. *Id.* at 6 (alteration in original). VLSI further asserts that "[m]uch of the factual and legal research and initial drafting for the POPRs and Preliminary Surreplies applied to both IPR2021-01056 (the '1056') and IPR2021-1064 (the '1064')." *Id.* at 8. Thus, VLSI seeks 50% of the time listed in billing entries for both the 1056 and 1064 IPRs, and 40% of the entries for drafting the 1056 IPR. *Id.*

OpenSky responds that "VLSI's pre-institution factual research, legal research, POPR, sur-reply, and POP are all focused [on] the *Fintiv* and *General Plastic* factors, prior art invalidity, hearsay in expert reports, recycling Intel's petition, and immunity to IPR challenges after trial, which all are unrelated to a supposed abuse of process." Opp. 10. OpenSky further argues that "[t]here is no mention of misconduct, ethical violations, or abuse of process in any of the time entries and no legal citations in briefs until *after* February 23, 2022." *Id.* at 11.

I am persuaded by OpenSky's argument to exclude VLSI's pre-institution activities from the fee calculation. I previously indicated that I would not award attorney fees for responding to the merits of the case. Paper 127, 2. VLSI's POPR and Preliminary Sur-Reply primarily address the merits of the case, including the substance of the Petition, discretionary denial under *Fintiv* and *General Plastic*, and hearsay based on expert declarations. *See* Paper 9; Paper 16. The Billing Statement reflects this focus. *See* Ex. 2126, 2–7. Although VLSI raised the potential for abuse in its initial filings, the vast majority of time was spent on addressing the merits or seeking discretionary denial independent of abuse. Accordingly, I exclude VLSI's billing entries for "Pre-Institution Activities" (Billing Statement 2–7) from the fee calculation.

2. Precedential Opinion Panel ("POP") Request for Review

VLSI asserts that its request for POP review ("POP Request") "centered upon OpenSky's misconduct and abuse of the IPR process." Mot. 8 (citing Paper 20, 1, 3–4, 6–8; Decision, 10–11; Paper 127, 12). Specifically, VLSI argues that its POP Request raised the issue of OpenSky seeking payment in exchange for dropping its challenge and seeking to extract payouts from patent owners. *See id.* (citing Paper 20, 3, 5). VLSI's Billing Statement reflects the time spent on preparing the POP Request. *See* Ex. 2126, 8–9 (Table 2.1).

OpenSky responds that "POP-related fees should be excluded [as] an unnecessary and strategic decision in response to VLSI's merits loss, not OpenSky abuse." Opp. 14. OpenSky further argues that, if allowed, the

time should be reduced due to reiterating prior arguments and vague time entries. *See id.*

I am persuaded by VLSI's arguments to include the billing entries related to preparing the POP Request. Although the POP Request was denied, the POP Request raised issues relevant to Director Review of OpenSky's misconduct. *See* Paper 41; Paper 47, 7–9. Accordingly, VLSI's POP Request addresses OpenSky's abusive behavior and is part of the Director Review process. *See* Paper 127, 2. I further find VLSI's descriptions of the time billed adequate without further reduction. *See Rumsey*, 866 F.3d at 1379 (noting that counsel "is not required to record in great detail how each minute of his time was expended" but "should identify the general subject matter of his time expenditures").

3. Settlement Negotiations

VLSI asserts that the settlement negotiations between counsel for VLSI and OpenSky "were 'entirely distinguishable from conventional settlement negotiations that take place in an adversarial proceeding' (Decision, 3) and through which OpenSky attempted to extort money from VLSI (*id.*, 40)." Mot. 9 (quoting Dec. 3). VLSI's billing entries include time attributed to settlement negotiations with Patent Quality Assurance ("PQA") in IPR2021-01229. *See id.*; Billing Statement 10 (Table 3.1). Accordingly, VLSI reduces its fees with mixed billing entries to 40% of the billing amount. *Id.*

OpenSky does not specifically address the settlement negotiations. *See generally* Opp. However, OpenSky generally argues that "the Director previously rejected VLSI's attempt to seek attorney fees for proceedings

other than the 1064 IPR." Opp. 9 (citing Paper 127, 14). Accordingly, OpenSky argues that "VLSI cannot be awarded fees for time entries that are not expressly directed to the 1064 IPR" and that "because the lack of detail is VLSI's fault, the fees must be reduced." *Id.*

I am persuaded by VLSI's arguments to include the billing entries related to the settlement negotiations, as these are directly relevant to OpenSky's abuse of process. I also find adequate VLSI's reduction to 40% of any billing entries that also reference IPR2021-01229 as a good faith effort to exclude fee request hours that are excessive, redundant, or otherwise unnecessary. *See Hensley*, 461 U.S. at 434.

4. Ethical Research

VLSI asserts that OpenSky's actions "forced VLSI's counsel to research the extent of OpenSky's ethical violations, VLSI's own ethical obligations, and various strategic considerations." Mot. 10 (citing Dec. 3, 31–32). VLSI's billing entries reflect this time. Ex. 2126, 11–12 (Table 4.1). OpenSky does not specifically challenge VLSI's request on these billing entries.

I am persuaded by VLSI's arguments to include the billing entries related to legal research on the ethical ramifications of OpenSky's misconduct. As I noted in my Decision, the circumstances of this particular case are unusual and serious. *See* Dec. 43, 48. Accordingly, it was appropriate for VLSI to spend a substantial amount of time investigating OpenSky's actions and VLSI's corresponding obligations.

5. Director Review Process

VLSI asserts that "[t]he Fee Order makes clear that OpenSky must compensate VLSI for its reasonable attorney fees incurred during the entirety of the Director Review process." Mot. 10 (citing Paper 127, 1). VLSI argues that this time includes addressing the granted Director Review and Scheduling Order, responding to Mandated Discovery, and responding to my inquiries. *Id.* at 10–11. VLSI acknowledges that several billing entries list time entered for both this proceeding and IPR2021-01229. *See id.* VLSI has accordingly reduced to 50% the time entries applied to this proceeding that also list IPR2021-01229. *See id.* VLSI's Billing Statement reflects the time spent and the reduced hours. *See* Ex. 2126, 13–31 (Table 5).

OpenSky responds that fees should be limited to entries identifying the 1064 IPR, and entries citing IPR2021-01229 "must be reduced by 50% for the lodestar percentage." Opp. 14. OpenSky further argues that VLSI's fees "are consistently excessive." *Id.* at 15. For example, OpenSky argues that VLSI's entries in Table 5.1 "should be at least further halved" "for taking an unreasonable amount of time to just talk strategy," for being vague, and for not necessarily addressing abuse. *See id.* OpenSky argues that VLSI's entries in Tables 5.3A and 5.3B should be reduced "for unreasonably spending over 240 hours on documents when only three requests applied to VLSI documents," "spending 88.9 hours on its . . . request for in camera review," "for using partner level fees to perform entry level work," and for vague entries. *See id.* at 15–16. OpenSky argues that VLSI's entries in Tables 5.4.A and 5.4.B should be disallowed "because

seventy-one hours for legal research is indefensible considering VLSI's opening brief only citing to *eight* cases," or reduced due to excessive time spent and duplication. *See id.* at 15–16. OpenSky argues that VLSI's entries in Tables 5.5A and 5.5B should be reduced for including PQA time and for "unreasonably taking over 220 hours to write [a] 25 page[] brief," overstaffing, and block billing with vague entries. *See id.* at 17. Finally, OpenSky argues that VLSI's entries in Table 5.6A should be reduced for identifying PQA and for excessive hours, overstaffing, vague entries, and not being related to OpenSky's abuse. *See id.* at 17–18.

I am persuaded by VLSI's arguments to include the time listed in the Billing Statement in Tables 5.1–5.6 as applied to the Director Review process. VLSI has already reduced the majority of the billing entries as a good faith effort to exclude hours that are excessive, redundant, or otherwise unnecessary, including those that overlap with IPR2021-01229. *See* Ex. 2126, 13–31. I recognize OpenSky's arguments that VLSI spent an overly large amount of time on these issues. However, this Director Review raised numerous novel and complex issues. *See Johnson v. Georgia Highway Exp., Inc.*, 488 F.2d 714, 718 (5th Cir. 1974) (holding that courts should consider "[t]he novelty and difficulty of the questions" when assessing whether attorney fees are reasonable), *abrogated on other grounds by Blanchard v. Bergeron*, 489 U.S. 87 (1989). It is not unreasonable for VLSI's counsel to have spent significant time to address the novel and complex issues of misconduct raised in the Director Review process. Accordingly, I accept VLSI's billing entries including the reductions already proposed by VLSI.

6. Attorney Fees Briefing

VLSI asserts that "[t]he briefing ordered by the Director to show cause why attorney fees sanctions should or should not be levied against OpenSky was also a part of the Director review process and directly related to OpenSky's misconduct." Mot. 11.

OpenSky responds that VLSI's fees are excessive as "[a] 21-page brief does not require 3½ weeks of attorney work (6 hours per page) and VLSI double charges for sanctions legal research (*see e.g.*, Tables 4.1, 5.4.A, Table 6.1, e.g. 10/5/2022, 10/27/2023, 11/3/2022)." Opp. 18. OpenSky further argues that VLSI's time went outside the scope of the show cause order for researching opposition to attorney withdrawal and arguing attorney liability. *Id.* at 18 (citing Paper 117, 15–21). Finally, OpenSky argues that VLSI's time entries on the responsive brief are excessive and improperly vague. *See id.*

I am persuaded by VLSI's arguments to include the time listed in the Billing Statement in Tables 6.1–6.2 as applied to the sanctions process. The sanctions are a direct result of OpenSky's misconduct. There is no indication that VLSI's billing entries directed to legal research are duplicative or excessive. VLSI has further reduced the hours in the entries, including those specifically identified by OpenSky as being outside the scope of the show cause order. *See* Ex. 2126, 33. Accordingly, I accept VLSI's billing entries including the reductions already proposed by VLSI.

B. Reasonable Rate

"The fee applicant . . . has the burden of proving that the 'requested rates are in line with those prevailing in the community for similar services of lawyers of reasonably comparable skill and reputation.'" *View Eng'g*, 208 F.3d at 987 (approving of a lodestar determination that reduced the billing rates of attorneys whose "rates were on the high-end of rates charged by other intellectual property attorneys with equivalent experience" as compared to the AIPLA Economic Survey). As discussed above, VLSI engaged attorneys from two different law firms for this proceeding. VLSI further submits two different rates reports as evidence of the prevailing rates in the community. *See* Ex. 2134; Ex. 2135; *see also Covington v. D.C.*, 57 F.3d 1101, 1109 (D.C. Cir. 1995) ("Although fee matrices are somewhat crude—the Laffey matrix, for example, lumps attorneys with four to seven years of experience in the same category; attorneys with eleven to nineteen also share the same hourly rate—the matrices do provide a useful starting point.")

Accordingly, I consider the reasonableness of the rates submitted by VLSI's counsel.

1. Lowenstein & Weatherwax

VLSI asserts that L&W "is a boutique that specializes in IPRs, Federal Circuit appeals thereto, and ex parte reexaminations." Mot. 13; Ex. 2127 ¶ 3. VLSI asserts that "L&W has had a distinguished record of success before the Board and in the Federal Circuit" as counsel of record in over 300 PTAB proceedings and 45 Federal Circuit appeals. *Id.*; Ex. 2127 ¶ 5. VLSI asserts that "L&W billed VLSI at a significantly discounted rate

in this matter. For instance, Messrs. Lowenstein's and Weatherwax's rates per hour to VLSI were $[redacted] in 2021 and $[redacted] in 2022 while Ms. Woo's rates were $[redacted] in 2021 and $[redacted] in 2022. These rates are significantly lower than what the firm charges in many other matters." Mot. 14; Ex. 2127 ¶ 18. Mr. Lowenstein declares that Mr. Linger's rate in 2021 was $[redacted]/hour. Ex. 2127 ¶ 18.

Mr. Lowenstein describes the experience for L&W's billing attorneys. *See* Ex. 2127. For example, Mr. Lowenstein "worked together with Mr. Kenneth Weatherwax for many years . . . since at least 2006" (at least 17 years of experience). *Id.* ¶ 8. Colette Woo "joined L&W approximately three-and-a-half years ago" (3–5 years of experience). *Id.* ¶ 9. "Mr. Robert Pistone joined L&W in September 2022" (less than 3 years of experience). *Id.* ¶ 10.

As to the billing rates in the community, Mr. Lowenstein declares that "[t]he Los Angeles market, where both L&W and Irell are based, also garners relatively high rates." *Id.* ¶ 15. Mr. Lowenstein references the 2022 Real Rate Report that lists mean rates for patent practitioners in the 2022 Los Angeles market (firms with more than 1,000 lawyers) as $1,128/hour for partners and $771/hour for associates. *Id.* ¶ 15 (citing Ex. 2134, 178).

OpenSky argues that "Exhibit 2134 reports data compiled for very large law firms with 'More Than 1,000 Lawyers'" and has no bearing on the fees of L&W, a small boutique. Obj. 18–19.

I am persuaded that L&W's rates are reasonable and require no further adjustment. Although Mr. Lowenstein cites to data for a firm size of "more than 1,000 lawyers," the data otherwise includes similar rates for

patent practitioners in Los Angeles. *See* Ex. 2134, 154 (2022 partner mean of $943/hour; 2022 associate mean of $736/hour). The 2022 Real Rate Report also lists prevailing rates in the patent-litigation community. Ex. 2134, 156–158. For example, the mean real rates for partners in patent litigation (fewer than 21 years of experience) was $746/hour in 2021 and $856/hour in 2022. *Id.* at 156. Ex. 2134, 157. The mean real rates for associates in patent litigation was $545/hour in 2021 and $652/hour in 2022 for 3–7 years of experience and $341/hour in 2021 and $427/hour in 2022 for less than 3 years of experience. *Id.* The 2022 Real Rate Report also provides information on firms of varying size. Ex. 2134, 158. For 50 lawyers or fewer, the mean real rates for patent litigation at the partner level was $551/hour in 2021 and $562/hour in 2022. The mean real rates for patent litigation at the associate level was $410/hour in 2021 and $488/hour in 2022. *Id.*

The AIPLA Economic Survey for 2012 (Ex. 2135) lists lower rates for both partners and associates. *See* Ex. 2135, 24–25 (partner mean $545/hour), 30 (associate mean $375/hour with fewer than 5 years' experience). However, the AIPLA Economic Survey does not distinguish between litigation similar to AIA proceedings and non-litigation patent practice. *See id.*; *see* Ex. 2134, 156. L&W's rates fall within the mean ranges prevalent in the community for patent litigators of similar skill and experience. Accordingly, I determine L&W's billed rates are reasonable.

2. Irell & Manella

VLSI asserts that Irell is a leading patent litigation firm "and VLSI's chief district court litigation counsel." Mot. 5. Mr. Heinrich declares that

Irell "specializes in a wide array of legal areas, including Patent Office Trials, Intellectual Property Litigation, and Intellectual Property Transactions." Ex. 2128 ¶ 3. Mr. Heinrich declares that "Mr. Phillip Warrick is Counsel at Irell," and has 15 years of experience. *Id.* ¶ 7. "VLSI is seeking an hourly rate of $[redacted] for Mr. Warrick." *Id.* ¶ 13. Mr. Heinrich declares that "Ms. Charlotte Wen is a senior associate at Irell" and graduated law school in 2016. *Id.* ¶ 8. "VLSI [] seeks an hourly rate of $[redacted] for Ms. Wen." *Id.* ¶ 13. VLSI asserts that "[i]n another patent litigation matter concerning Irell's fee rates, the opposing party had "stipulated that the rates claimed by [Irell] are reasonable.'" Mot. 17 (citing *Finjan, Inc. v. Juniper Network*, No. 3:17-cv-05659-WHA, 2021 WL 3674101, at *3 (N.D. Cal. May 20, 2021)).

OpenSky argues that "any fees awarded for any Irell timekeepers should be reduced by fifty percent. Contrary to VLSI's brief, plaintiff Finjan did not stipulate to Irell's rates, but to market rates." Opp. 10 (citing *Finjan*, 2021 WL 3674101, at *3). OpenSky provides no other argument that the Irell attorneys' rates are unreasonable.

I am persuaded that the Irell attorneys' rates are reasonable and require no further adjustment. Irell's requested rates for Mr. Warrick ($[redacted]/hour) and Ms. Wen ($[redacted]/hour) are below the mean rates reported for the Los Angeles billing market for patent practitioners (Ex. 2134, 154) and are commensurate with the rates for patent litigation practice for attorneys with similar experience in law firms of similar size (*id.* at 156–157).

C. Total Attorney Fees

VLSI requests total attorney fees of $489,511.15. *See* Ex. 2126, 40. As discussed above, I exclude the attorney fees for "Pre-Institution Activities" (amounting to $66,117.65) and any activities outside the IPR and Director Review proceedings (amounting to $10,129.35). Reducing the total attorney fees by the excluded fees results in $413,364.15. Accordingly, I sanction OpenSky for VLSI's reasonable fees of $413,264.15.

IV. ORDER

Accordingly, based on the foregoing, it is:

ORDERED that VLSI's Motion for Fees is granted; and

FURTHER ORDERED that, within thirty (30) days of the date of this Order, OpenSky shall pay VLSI $413,264.15 as a sanction.

[redacted]

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US007725759B2

(12) **United States Patent**
Henson

(10) **Patent No.: US 7,725,759 B2**
(45) **Date of Patent: May 25, 2010**

(54) **SYSTEM AND METHOD OF MANAGING CLOCK SPEED IN AN ELECTRONIC DEVICE**

(75) Inventor: **Matthew Henson**, Austin, TX (US)

(73) Assignee: **Sigmatel, Inc.**, Austin, TX (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 295 days.

(21) Appl. No.: **11/170,475**

(22) Filed: **Jun. 29, 2005**

(65) **Prior Publication Data**

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G06F 1/08 (2006.01)
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(52) **U.S. Cl.** **713/600**; 713/300; 713/322; 713/400; 713/401; 713/500; 713/501; 713/502; 713/503; 713/601; 710/15; 710/309

(58) **Field of Classification Search** 713/300, 713/322, 500–503, 400–401, 600–601; 710/15, 710/309

See application file for complete search history.

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Assistant Examiner—Fahmida Rahman
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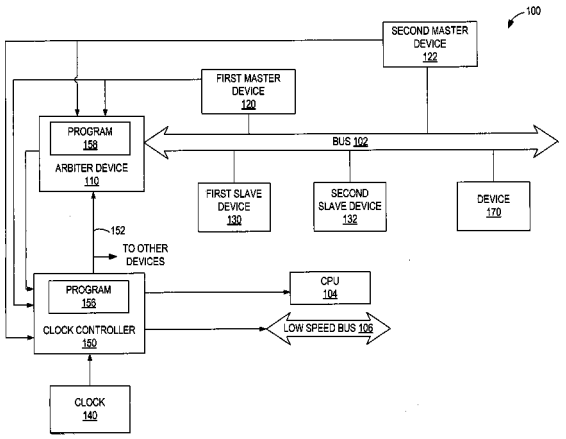
(57) **ABSTRACT**

A method of controlling a clock frequency is disclosed and includes monitoring a plurality of master devices that are coupled to a bus within a system. The method also includes receiving an input from at least one of the plurality of master devices. The input can be a request an increase to the clock frequency of the bus. Further, the method includes selectively increasing the clock frequency of the bus in response to the request.

27 Claims, 6 Drawing Sheets



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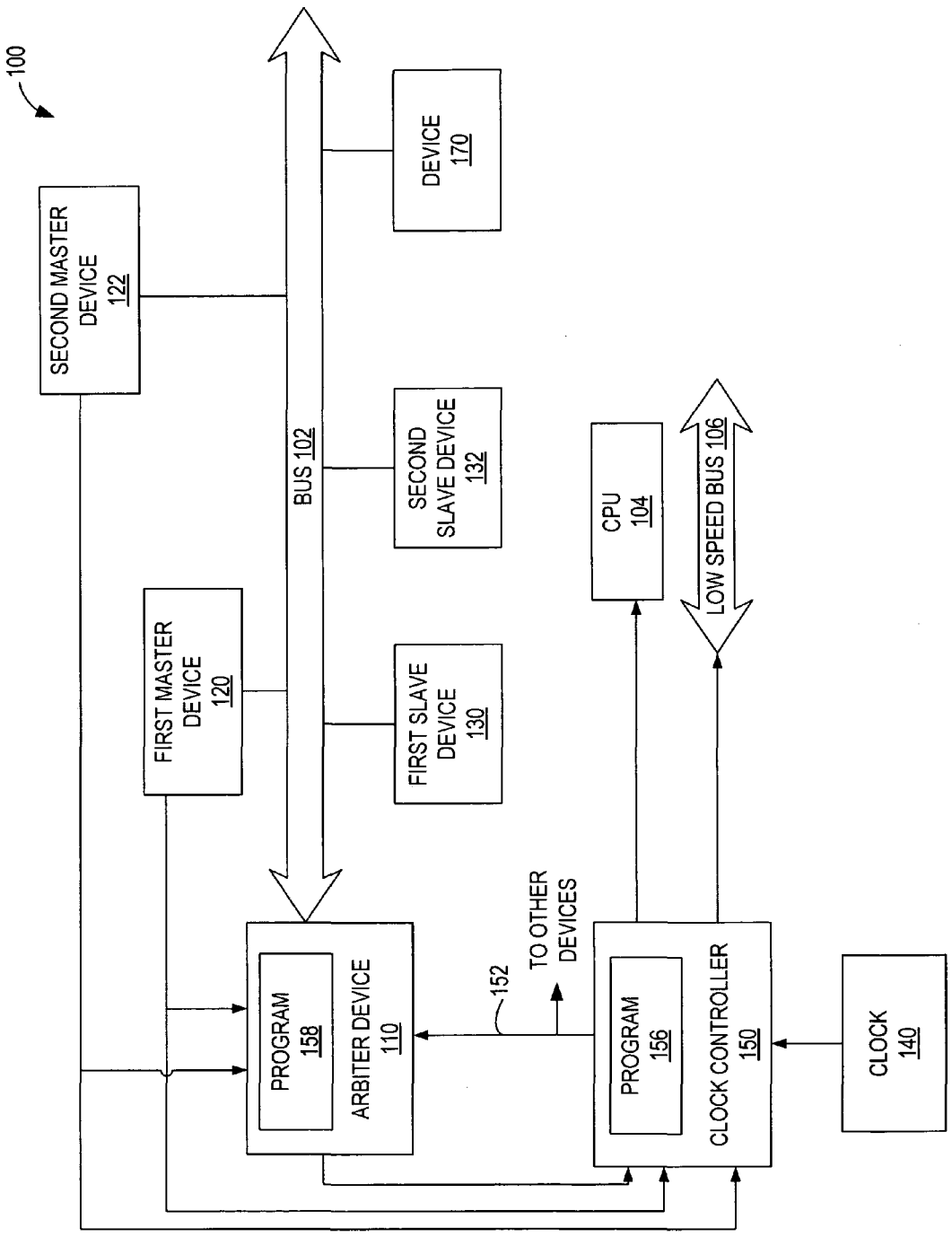
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SECOND MASTER DEVICE 122
DEVICE 170
BUS 102
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CPU 104
LOW SPEED BUS 106
FIRST MASTER DEVICE 120
FIRST SLAVE DEVICE 130
TO OTHER DEVICES
152
PROGRAM 158
ARBITER DEVICE 110
PROGRAM 156
CLOCK CONTROLLER 150
CLOCK 140

FIG. 1

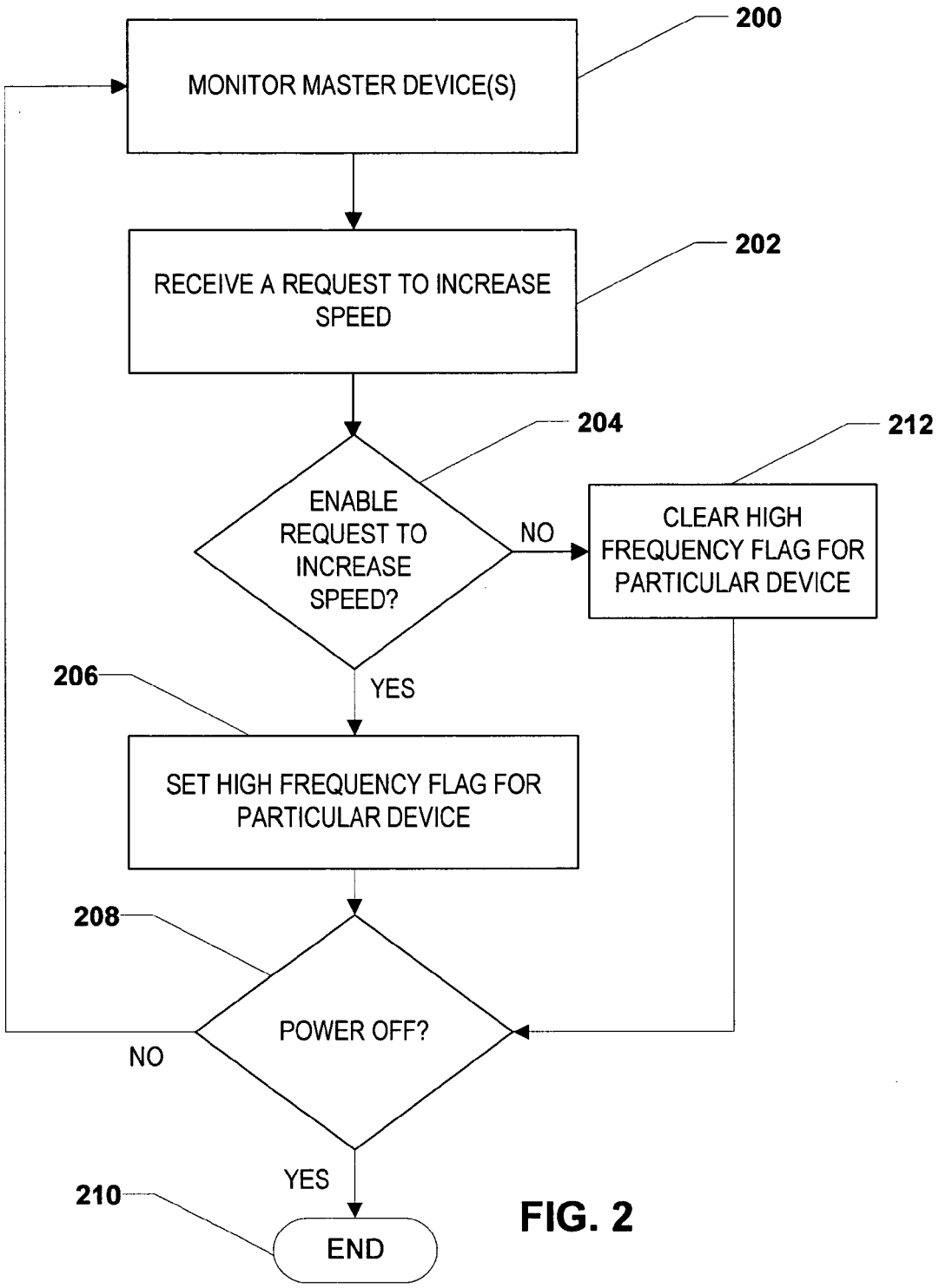
200
MONITOR MASTER DEVICE(S)
202
RECEIVE A REQUEST TO INCREASE SPEED
204
ENABLE REQUEST TO INCREASE SPEED?
NO
212
CLEAR HIGH FREQUENCY FLAG FOR PARTICULAR DEVICE
YES
206
SET HIGH FREQUENCY FLAG FOR PARTICULAR DEVICE
208
POWER OFF?
NO
YES
210
END

FIG. 2

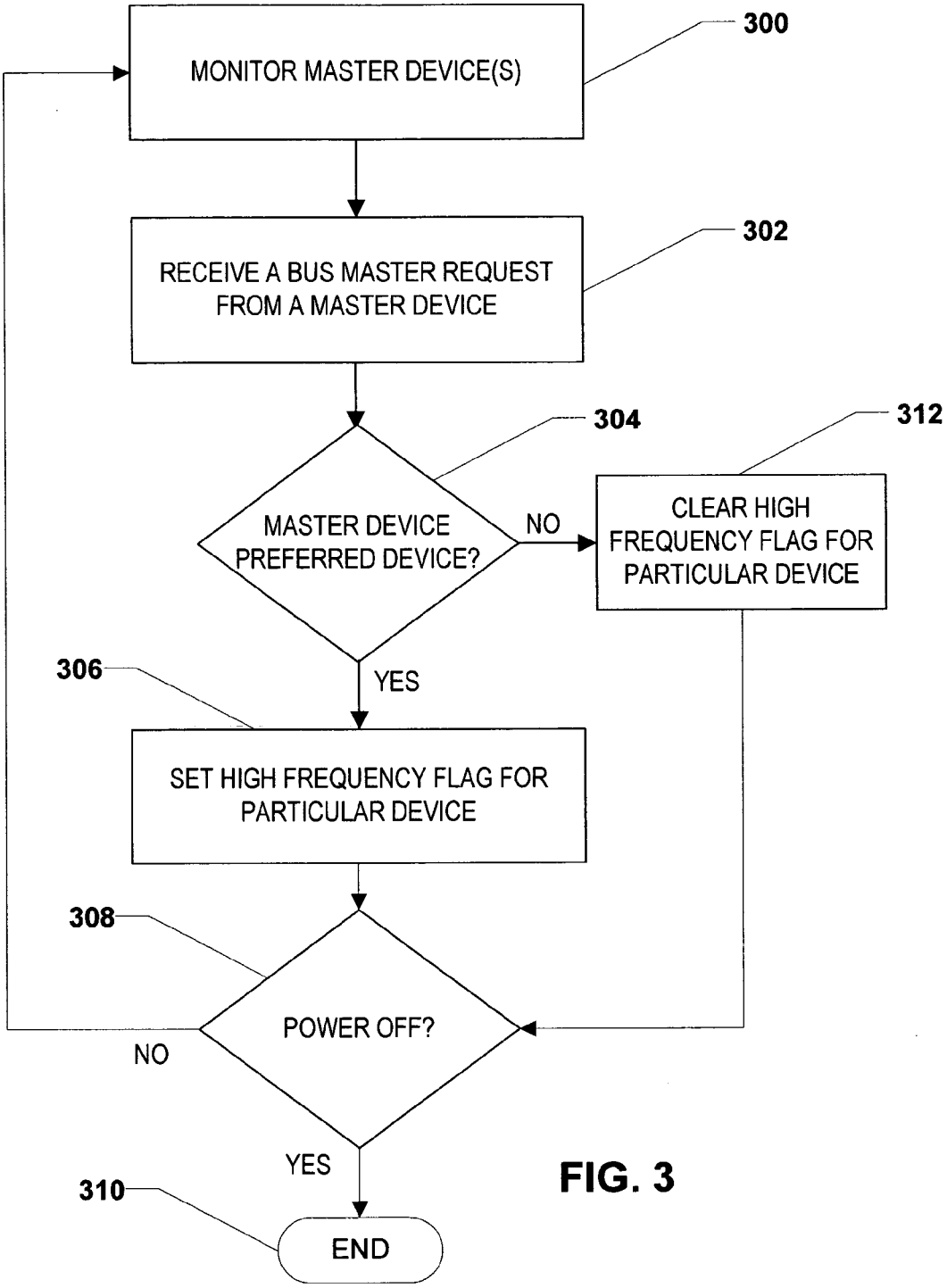
MONITOR MASTER DEVICE(S)
300
RECEIVE A BUS MASTER REQUEST FROM A MASTER DEVICE
302
MASTER DEVICE PREFERRED DEVICE?
304
NO
CLEAR HIGH FREQUENCY FLAG FOR PARTICULAR DEVICE
312
YES
306
SET HIGH FREQUENCY FLAG FOR PARTICULAR DEVICE
308
POWER OFF?
NO
YES
310
END

FIG. 3

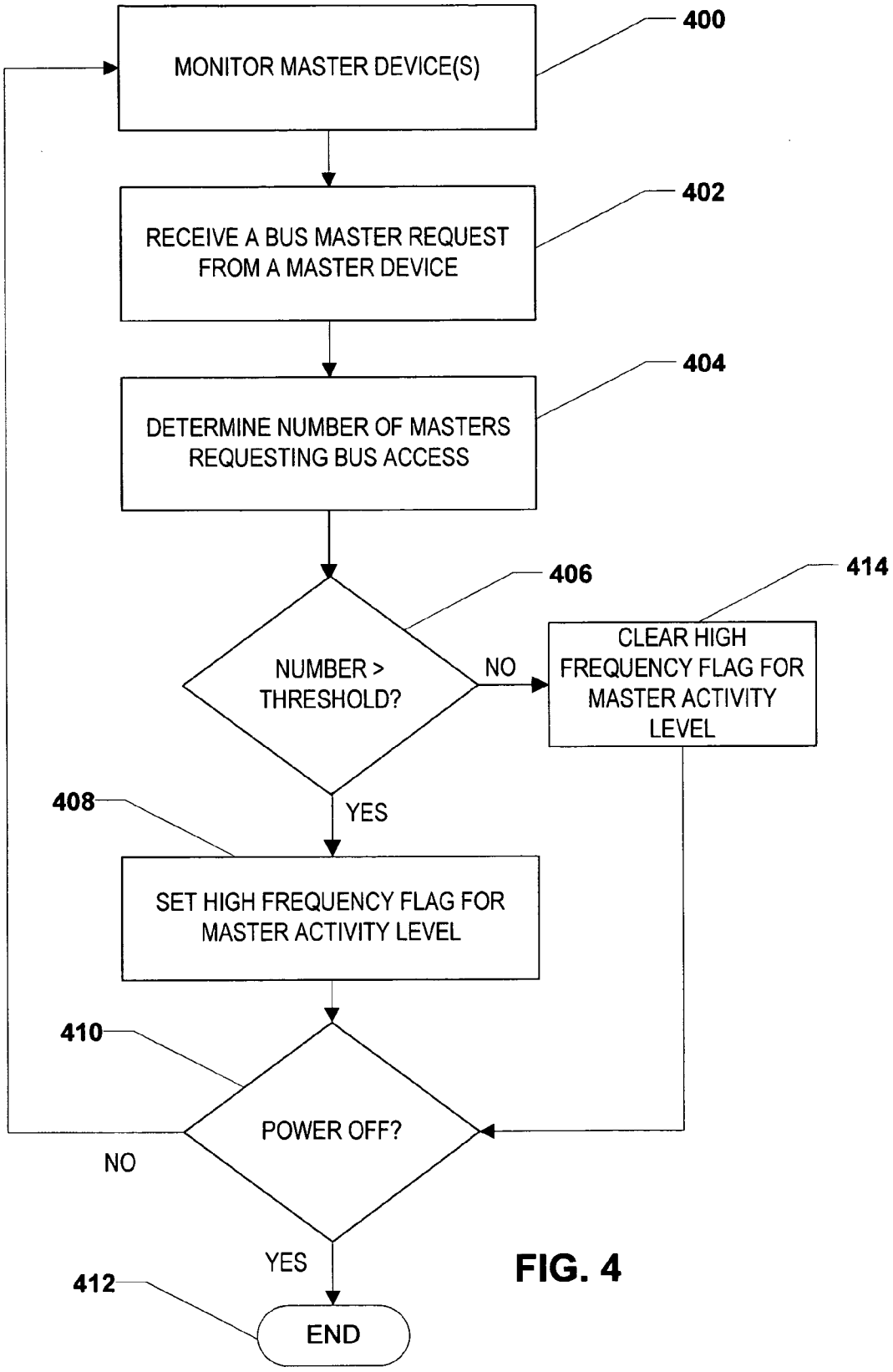
MONITOR MASTER DEVICE(S)
400
RECEIVE A BUS MASTER REQUEST FROM A MASTER DEVICE
402
DETERMINE NUMBER OF MASTERS REQUESTING BUS ACCESS
404
NUMBER > THRESHOLD?
406
NO
CLEAR HIGH FREQUENCY FLAG FOR MASTER ACTIVITY LEVEL
414
YES
408
SET HIGH FREQUENCY FLAG FOR MASTER ACTIVITY LEVEL
410
POWER OFF?
NO
YES
412
END

FIG. 4

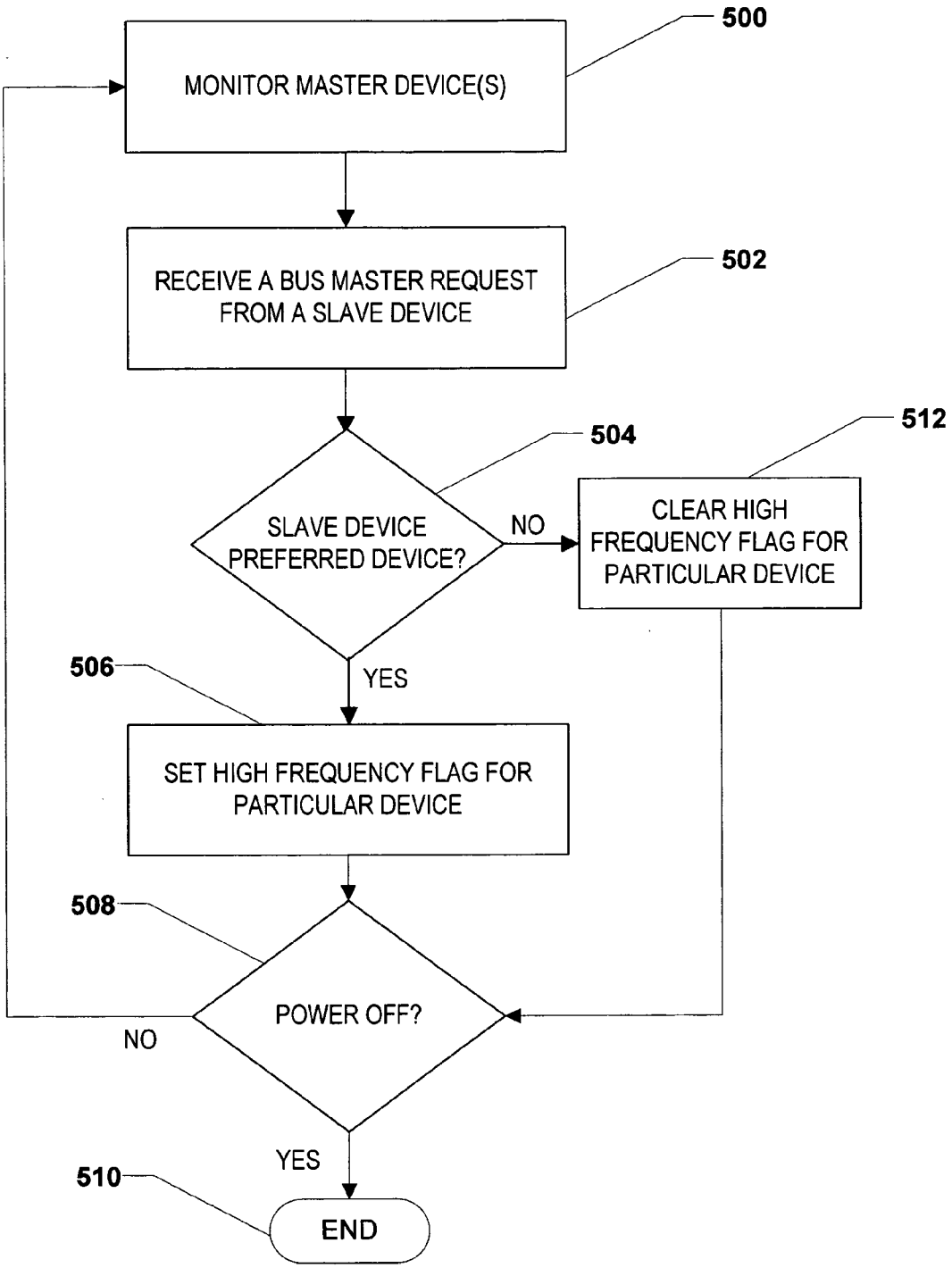
500
MONITOR MASTER DEVICE(S)
502
RECEIVE A BUS MASTER REQUEST FROM A SLAVE DEVICE
504
SLAVE DEVICE PREFERRED DEVICE?
NO
512
CLEAR HIGH FREQUENCY FLAG FOR PARTICULAR DEVICE
YES
506
SET HIGH FREQUENCY FLAG FOR PARTICULAR DEVICE
508
POWER OFF?
NO
YES
510
END

FIG. 5

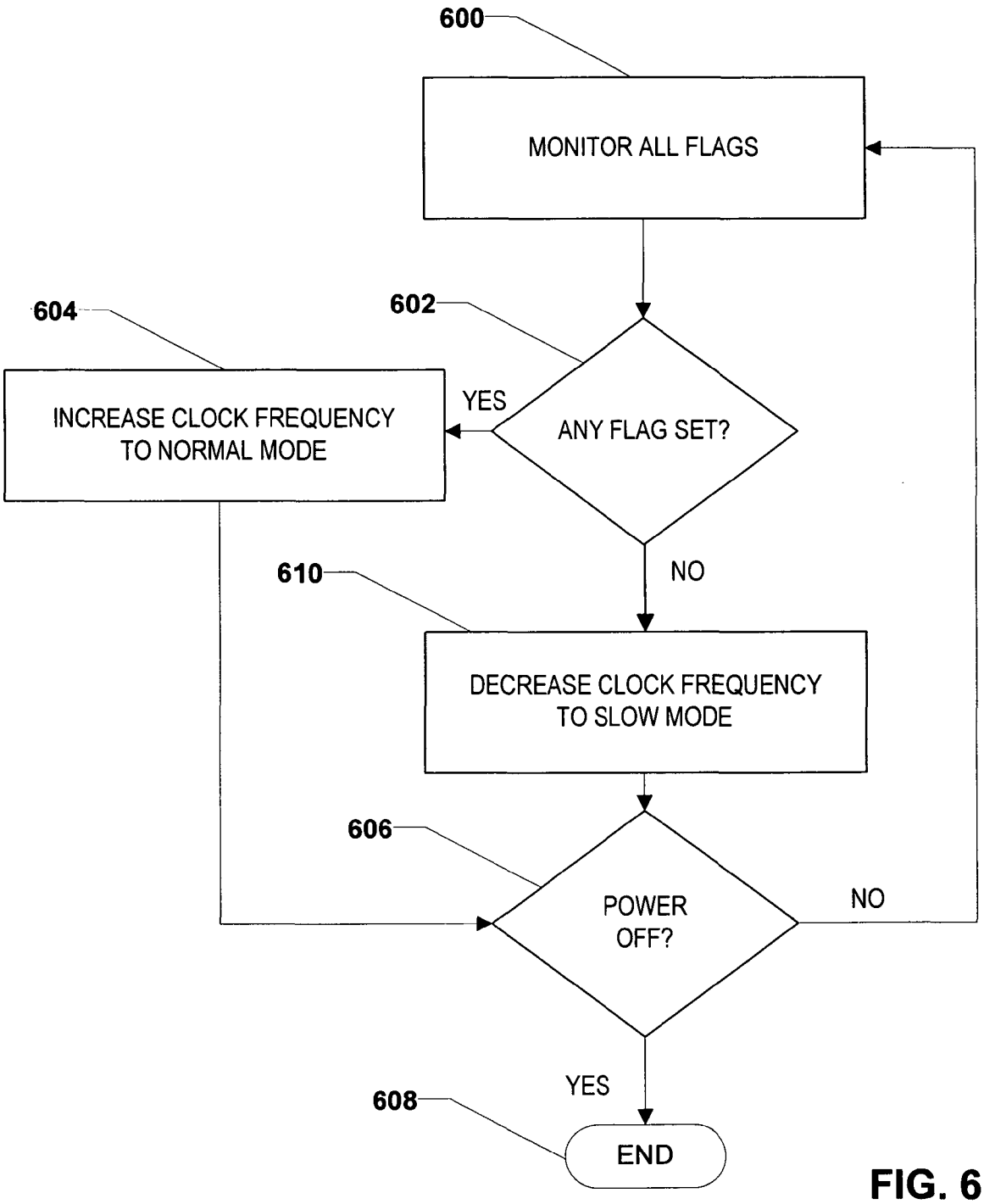
600
MONITOR ALL FLAGS
602
ANY FLAG SET?
YES
604
INCREASE CLOCK FREQUENCY TO NORMAL MODE
NO
610
DECREASE CLOCK FREQUENCY TO SLOW MODE
606
POWER OFF?
NO
YES
608
END

FIG. 6

SYSTEM AND METHOD OF MANAGING CLOCK SPEED IN AN ELECTRONIC DEVICE

FIELD OF THE DISCLOSURE

The present disclosure relates to electronic devices and to managing clock speeds within electronic devices.

BACKGROUND

As technology advances, portable multimedia devices are being designed with increased functionality and increased efficiency to support that functionality. For example as storage within portable audio players, such as an MPEG-1 Audio Layer-3 (MP3) player, increases, the need to quickly and efficiently access stored audio files also increases. One way to increase the performance of the MP3 player and provide quicker access to stored files is to increase the clock frequency of the clock used in the device. However, as the clock frequency increases to deliver more performance, the power consumption of the MP3 player also increases.

Accordingly, there is a need for an improved system and method of controlling a clock frequency in an electronic device in order to selectively deliver faster clock speeds.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram that illustrates an electronic system;

FIG. **2** is a flow chart illustrating a method of setting bus speed control flags within an electronic system is shown;

FIG. **3** is a flow chart illustrating an alternative embodiment of a method of setting bus speed control flags within an electronic system is shown;

FIG. **4** is a flow chart illustrating an alternative embodiment of a method of setting bus speed control flags within an electronic system is shown;

FIG. **5** is a flow chart illustrating yet another alternative embodiment of a method of setting bus speed control flags within an electronic system is shown; and

FIG. **6** is a flow chart illustrating a method of monitoring one or more speed control flags within an electronic system.

DETAILED DESCRIPTION OF DRAWINGS

A method of controlling a clock frequency is disclosed and includes monitoring a plurality of master devices that are coupled to a bus within a system. The method also includes receiving an input from at least one of the plurality of master devices. The input can be a request for an increase to the clock frequency of the bus. Further, the method includes selectively increasing the clock frequency of the bus in response to the request.

In a particular embodiment, the method includes determining whether to enable the request to increase the clock frequency of the bus and setting a high frequency flag. In another particular embodiment, the method includes clearing the high frequency flag. Additionally, in yet another particular embodiment, the method includes monitoring a plurality of high frequency flags and increasing a clock frequency when at least one of the plurality of high frequency flags are set. In another particular embodiment, the method includes decreasing the clock frequency to a slow mode when none of the plurality of high frequency flags are set.

In still another particular embodiment, the method includes determining whether the at least one of the plurality of master devices is a preferred device prior to setting a high frequency flag. The preferred device can be a processor, an input/output bus controller, a direct memory access (DMA) controller, an error correction code module, and an external memory interface.

In another particular embodiment, the method includes determining a number of master devices requesting bus access, determining whether the number of master devices requesting bus access is greater than a threshold, and setting a high frequency flag for master activity level, when the number is greater than the threshold. In yet another particular embodiment, the method includes clearing a previously set high frequency flag for master activity level, when the number of master devices requesting bus access is less than the threshold.

In another embodiment, a method of controlling a clock frequency of a bus coupled to a plurality of devices is disclosed and includes monitoring a plurality of devices that are coupled to the bus and receiving a bus master request from at least one of the plurality of devices. The bus master request can be a request to communicate via the bus. In this particular embodiment, the method also includes determining whether the at least one of the plurality of devices is a preferred device and setting a high frequency flag for the at least one of the plurality of devices when the at least one of the plurality of devices is a preferred device.

In yet another embodiment, a method of controlling a clock frequency of a bus coupled to a plurality of devices is disclosed and includes monitoring a plurality of devices that are coupled to the bus, determining a number of master devices that are requesting bus access, determining whether the number of master devices that are requesting bus access is greater than a threshold, and setting a high frequency flag for master activity level when the number is greater than the threshold.

In still another embodiment, a system is disclosed and includes a bus, at least one master device that is coupled to the bus, at least one slave device that is coupled to the bus, and a clock controller that is coupled to the at least one master device. The clock controller can output a variable clock frequency that varies in response to one or more inputs from the at least one master device.

In yet still another embodiment, a system is disclosed and includes a bus and a first master device that is coupled to the bus. The first master device can provide a first trigger input as a request to increase a variable clock frequency. Further, the system includes a programmable clock controller that has a computer program embedded therein. In this embodiment, the computer program includes instructions to adjust the variable clock frequency in response to the first trigger input. The variable clock frequency is provided in response to the request.

The functionality of various systems, modules, circuits, devices or components described herein may be implemented as hardware (including discrete components, integrated circuits and systems-on-a-chip 'SoC'), firmware (including application specific integrated circuits and programmable chips) and/or software or a combination thereof, depending on the application requirements.

FIG. **1** depicts an electronic system, generally designated **100**, that includes a plurality of devices connected by a bus **102**, according to an illustrative embodiment. In a particular embodiment, the bus **102** is an advanced microprocessor bus architecture (AMBA) type of bus used for SoC interconnects. In another embodiment, the bus **102** may be based on a proprietary bus communication standard or may be based on other published standards.

An arbiter **110** is coupled to the bus **102**. In addition, at least one master device that includes a first master device **120** and

a second master device **122** and at least one slave device that includes a first slave device **130** and a second slave device **132** are coupled to the bus **102**. Further, a clock controller **150** is coupled to the arbiter **110** and a clock **140** is coupled to the clock controller **150**. In an alternative embodiment, the clock **140** can be integrated with the clock controller **150**.

FIG. **1** also shows a central processing unit (CPU) **104** coupled to the clock controller **150**. As further shown, the first master device **120** and the second master device **122** are each coupled to the clock controller **150** and the arbiter **110**.

In a particular embodiment, the arbiter **110** controls the flow of data on the bus **102** including the bus timing. The first master device **120** may initiate communication with the first slave device **130** by requesting an access token from the arbiter **110** to communicate over the bus **102**. The first slave device **130** may receive data but may not initiate communication with a master. That is, the first slave device **130** is disabled to initiate communication with the plurality of devices coupled to the bus **102**. In an alternative embodiment, more than two master devices and/or more than two slave devices may be coupled to the bus **102**.

In an exemplary embodiment, the first master device **120** can be a processor, an input/output bus controller, a direct memory access (DMA) controller, an error correction code module or an external memory interface. Examples of the slave device **130** may include an on-chip memory, an off-chip memory, a flash controller, a power supply controller, or any other peripheral device or controller.

In an illustrative embodiment, the clock **140** provides a clock signal to the clock controller **150**. The clock signal received by the clock controller **150** can be altered within the clock controller **150**. The clock controller **150** can output a high speed clock **152** having a variable clock frequency to the bus **102** via the arbiter **110** and another high speed clock output to the CPU **104**. Further, the clock controller **150** can output a low speed clock output to a low speed bus **106**. In an exemplary embodiment, the clock controller **150** can output the high speed clock **152** directly to the bus **102**.

In an alternative embodiment, the high speed clock **152** and the low speed output can be provided to additional master or slave devices such as the device **170** based on the application requirements. In an exemplary embodiment, the clock controller **150** outputs a clock frequency that is variable or adjustable. In other words, the clock frequency of the high speed clock **152** is adjustable to meet a desired output of the device while reducing power consumed by the device. Since power consumption is proportional to the number of transitions on the logic, a decrease in the selectable clock frequency (selected during light load conditions) causes a corresponding decrease in power consumed by the devices coupled to the bus **102**, such as the master devices **120**, **122**.

In a particular embodiment, the clock frequency of the high speed clock **152** may be varied between a minimum frequency and a maximum frequency. The specific values for the upper and lower limit of the frequency range may vary and may depend on the application. In a particular embodiment, the maximum clock frequency is 100 megahertz (MHz) and the minimum clock frequency is 1000 kilohertz (kHz). In a particular embodiment, a typical value for the variable clock frequency of the high speed clock **152** may be 100 megahertz. In one embodiment, the clock frequency is selected to be at the maximum frequency divisible by a factor of 1, 2, 4, 8 or 16.

Each of the plurality of devices coupled to the bus **102** provide a corresponding trigger output. Each of the trigger outputs may be triggered or enabled in response to an event such as a desired increase in device performance. For example, an occurrence of an increase (or decrease) in output and/or an increase (or decrease) in needed performance due to loading of the device measured within a predefined time interval may trigger the event output. An example of a load or an output of a device may include a level of audio processing or signal output of an MP3 player. As another example, an occurrence of a change in power consumed by the device may trigger the event output. In a particular embodiment, the predefined time interval may vary from one microsecond to several milliseconds. In another embodiment, the trigger output is generated when the increase (or decrease) in the device output is above a threshold. As yet another example, the arbiter **10** detects change in the flow of data on the bus **102** and generates a trigger event.

The generation of the trigger output is indicative of a request to change the clock frequency of the high speed clock **152**. That is, the device provides the trigger output when a predefined change occurs in the device performance such as a variation in the load or the output of the device.

In a particular embodiment, the plurality of trigger outputs are received by the clock controller **150** as corresponding trigger signal inputs. The clock controller **150** controls and/or adjusts the high speed clock **152** by changing the clock frequency in response to the plurality of trigger signal inputs. That is, the clock frequency of the high speed clock **152** may be adjusted and provided as an output to directly control the clock frequency of other devices such as the second master device **122** and/or provided as an output to the arbiter **110** for controlling speed of the bus **102**.

In an alternative embodiment, the plurality of trigger outputs are received by the arbiter **110** as corresponding trigger signal inputs respectively. The clock controller **150** controls the arbiter **110**. The arbiter **110** communicates with the clock controller **150** to request changes in frequency. The arbiter **110** controls and/or adjusts a clock frequency of the bus **102** in response to receiving the plurality of trigger signal inputs. That is, the arbiter **110** adjusts an input clock to provide the adjusted clock frequency for controlling the speed of the bus **102**. In a particular embodiment, the input clock is the high speed clock **152** and the high speed clock **152** may be further adjusted or passed through to the bus **102**.

In a particular embodiment, the clock controller **150** processes each of the trigger signal inputs and provides the high speed clock **152** based on the particular inputs. That is, the clock controller **150** adjusts the clock frequency differently based on which ones of the trigger signal inputs have been enabled. For example, the trigger signal input from a particular or preferred master device may be viewed to have a higher priority compared to other inputs. As another example, the clock controller **150** may adjust the clock frequency when at least n inputs of the plurality of trigger signal inputs have been enabled. Preferred devices may be selected by comparing device attributes such as power consumption for a predefined clock frequency. In a particular embodiment, the preferred device may include a master device that consumes more power at a predefined frequency compared to another master device that consumes less power at the same frequency.

In a particular embodiment, the clock controller **150** may determine that a change in the high speed clock **152** may not be desired. In this embodiment, adjusting the frequency selection output may include not changing the variable clock frequency in response to the trigger inputs. For example, if the clock frequency is already at the maximum frequency then an increase in the device output may not result in a corresponding increase in the clock frequency. In a particular embodiment, the variable clock frequency is selected to be equal to the minimum clock frequency when all of the plurality of

trigger outputs are disabled. Operation in this mode results in additional power savings compared to operating modes when at least some of the plurality of trigger outputs are enabled.

In a particular embodiment, the clock controller **150** may be implemented as a programmable device having an embedded computer program **156**. The computer program **156** includes one or more instructions to perform various functions such as adjusting the high speed clock **152** in response to one or more of the trigger inputs. The high speed clock **152** is provided to at least one device for changing the clock frequency in response to a trigger input.

In a particular embodiment, the clock controller **150** is programmable to differentiate each of the trigger inputs. That is, the clock controller **150** adjusts the selected clock frequency differently based on which ones of the trigger inputs have been enabled. For example, the trigger input from a particular or preferred master device may be programmed to have a higher priority compared to other inputs. As another example, the clock controller **150** may be programmed to change the selected clock frequency when at least n inputs of the plurality of trigger inputs have been enabled.

As described earlier, in addition to and/or in lieu of controlling the clock frequency by the clock controller **150**, the arbiter **10** may be used to control the speed of the bus **102** by adjusting the clock frequency provided to the bus **102**. In a particular embodiment, the arbiter **110** may include a computer program **158** to control the clock frequency of the clock signal provided to the bus **102**. That is, the computer program **158** includes one or more instructions to selectively slow down and/or speed up certain devices coupled to the bus **102**. For example, the computer program **158** may selectively slow down the second master device **122** to match the throughput performance of a slave memory device being accessed by the second master device **122**.

In a particular embodiment, the computer program **158** may differentiate between master devices and/or slave devices coupled to the bus **102**. That is, the arbiter **110** adjusts the clock frequency of the bus **102** differently based on which ones of the master devices request communication. For example, the token request from a particular master device may be programmed to have a higher priority compared to others. As another example, the arbiter **110** may be programmed to change the clock frequency of the bus **102** when at least n master devices coupled to the bus **102** have requested communication.

FIG. **2** is a flow chart illustrating a method of setting bus speed control flags within an electronic system is shown and commences at block **200**. In a particular embodiment, the electronic system is the system **100** illustrated in FIG. **1**. Commencing at block **200**, a controller, e.g., an arbiter or clock controller, monitors one or more master devices. At block **202**, the controller receives a request to increase bus speed from a master device.

Moving to decision step **204**, the controller determines whether to enable the request to increase the bus speed. If so, the method proceeds to block **206** and the controller sets a high frequency flag for the particular device. Next, at decision step **208**, the controller determines whether the power to the system is turned off. If so, the method ends at state **210**. On the other hand, if the power to the system remains on, the method returns to block **200** and continues as described herein.

Returning to decision step **204**, if the controller determines not to enable the request to increase the bus speed, the method moves to block **212** and the controller clears the high frequency flag for the particular device. The method then proceeds to decision step **208** and continues as described herein.

Referring to FIG. **3**, a flow chart illustrating an alternative method of setting bus speed control flags within an electronic system is shown. Beginning at block **300**, a controller, e.g., an arbiter or a clock controller, monitors one or more master devices. At block **302**, the controller receives a bus master request from a master device. Moving to decision step **304**, the controller determines whether the master device is a preferred device. In a particular embodiment, the arbiter may make this determination by comparing the master device to a predefined list of preferred devices.

At decision step **304**, when the controller determines that the master device that sent the bus master request is a preferred device, the method proceeds to step **306** and the controller sets a high frequency flag for the particular master device. Next, at decision step **308**, the controller determines whether the power to the system is turned off. If so, the method ends at state **310**. On the other hand, if the power to the system remains on, the method returns to block **300** and continues as described herein.

Returning to decision step **304**, if the controller determines that the master device is not a preferred device, the method proceeds to block **312** and the controller clears the high frequency flag for the particular master device. The method then proceeds to decision step **308** and continues as described herein.

FIG. **4** is a flow chart illustrating another alternative embodiment of a method of setting bus speed control flags within an electronic system is shown. Starting at step **400**, a controller, e.g., an arbiter or a clock controller, monitors each one of a plurality of master devices coupled to a bus. Next, at step **402**, the controller receives a bus master request from a master device. Moving to step **404**, the controller determines the number of master devices requesting bus access.

At decision step **406**, the controller determines whether the number of master devices requesting bus access is greater than a threshold. If so, the method proceeds to block **408** and the controller sets a high frequency flag for master activity level. Next, at decision step **410**, the controller determines whether the power to the system is turned off. If so, the method ends at state **412**. On the other hand, if the power to the system remains on, the method returns to block **400** and continues as described herein.

Returning to decision step **406**, if the controller determines that the number of master devices requesting bus access is not greater than the threshold, the method continues to block **414**. At block **414**, the controller clears the high frequency flag for master activity level. The method then proceeds to decision step **410** and continues as described herein.

Referring to FIG. **5**, a flow chart illustrating yet another alternative of a method of setting bus speed control flags within an electronic system is shown. Beginning at block **500**, a controller monitors one or more slave devices. At block **502**, the controller receives a bus master request from a slave device. Moving to decision step **504**, the controller determines whether the slave device is a preferred device. In a particular embodiment, the arbiter may make this determination by comparing the slave device to a predefined list of preferred devices.

At decision step **504**, when the controller determines that the slave device that sent the bus master request is a preferred device, the method proceeds to step **506** and the controller sets a high frequency flag for the particular slave device. Next, at decision step **508**, the controller determines whether the power to the system is turned off. If so, the method ends at state **510**. On the other hand, if the power to the system remains on, the method returns to block **500** and continues as described herein.

Returning to decision step **504**, if the controller determines that the slave device is not a preferred device, the method proceeds to block **512** and the controller clears the high frequency flag for the particular slave device. The method then proceeds to decision step **508** and continues as described herein.

Referring to FIG. **6**, a method of monitoring one or more speed control flags within an electronic system is shown and commences at block **600**. At block **600**, a controller, e.g., an arbiter or clock controller, monitors all speed control flags within the electronic system. Moving to decision step **602**, the controller determines whether any flag is set. If so, the method proceeds to block **604** and the controller increases the clock frequency to a normal mode. Thereafter, the method proceeds to decision step **606** and the controller determines whether the power to the system is turned off. If so, the method ends at state **608**. On the other hand, if the power to the system is not turned off, the method returns to block **600** and continues as described herein.

Returning to decision step **602**, when the controller determines that the speed control flags are not set, the method proceeds to block **610** and the controller decreases the clock frequency to a slow mode. The method then continues to decision step **606** and continues as described herein.

In each of the methods described herein, various steps described above may be added, omitted, combined, altered, or performed in different orders.

For purposes of this disclosure, the disclosed system may include any instrumentality or aggregate of instrumentalities operable to perform functions such as transmit, receive, compute, classify, process, retrieve, originate, switch, store, display, manifest, detect, record, reproduce, handle, or utilize any form of information, intelligence, or data for consumer, business, scientific, control, or other purposes. For example, the system **100** may be implemented as one or more integrated circuits, a printed circuit board, a processor, or any other suitable device and may vary in size, shape, performance, functionality, and price. It should be understood that the term "computer system" or "program" is intended to encompass any device having a logic circuit that executes instructions from a memory medium.

Although illustrative embodiments have been shown and described, a wide range of modification, change and substitution is contemplated in the foregoing disclosure and in some instances, certain features of the embodiments may be employed without a corresponding use of other features. For example, while certain aspects of the present disclosure have been described in the context of the system **100** having one or more devices, those of ordinary skill in the art will appreciate that the processes disclosed are capable of being implemented using discrete components and/or SoC. As an additional example, it is contemplated that additional clocks used within the system may be similarly controlled to gain additional savings in power consumption.

The above-disclosed subject matter is to be considered illustrative, and not restrictive, and the appended claims are intended to cover all such modifications, enhancements, and other embodiments, which fall within the true scope of the present invention. Thus, to the maximum extent allowed by law, the scope of the present invention is to be determined by the broadest permissible interpretation of the following claims and their equivalents, and shall not be restricted or limited by the foregoing detailed description.

What is claimed is:

1. A method comprising:

monitoring a plurality of master devices coupled to a bus;

receiving a request, from a first master device of the plurality of master devices, to change a clock frequency of a high-speed clock, the request sent from the first master device in response to a predefined change in performance of the first master device, wherein the predefined change in performance is due to loading of the first master device as measured within a predefined time interval; and

in response to receiving the request from the first master device:

providing the clock frequency of the high-speed clock as an output to control a clock frequency of a second master device coupled to the bus; and

providing the clock frequency of the high-speed clock as an output to control a clock frequency of the bus.

2. The method of claim **1**, wherein the first master device performs a clock-frequency evaluation prior to generating the request.

3. The method of claim **2**, wherein the clock-frequency evaluation results in setting a high-speed clock flag.

4. The method of claim **1**, wherein the predefined time interval is from one microsecond to several milliseconds.

5. The method of claim **1**, wherein the loading of the first master device includes a level of audio processing.

6. The method of claim **5**, wherein the audio processing comprises audio processing of a Moving Picture Experts Group Phase 1 (MPEG-1) Audio Layer-3 (MP3) player.

7. The method of claim **1**, wherein controlling the clock frequency of the bus comprises adjusting the clock frequency of the bus.

8. The method of claim **1**, wherein the request to change the clock frequency of the high-speed clock comprises a request to increase the clock frequency of the high-speed clock.

9. The method of claim **1**, wherein the predefined change in performance comprises a variation in output of the first master device.

10. The method of claim **9**, wherein the output of the first master device comprises a signal output.

11. The method of claim **10**, wherein the signal output comprises a signal output of a Moving Picture Experts Group Phase 1 (MPEG-1) Audio Layer-3 (MP3) player.

12. The method of claim **1**, wherein the predefined change in performance comprises a change in power consumed by the first master device.

13. The method of claim **7**, wherein adjusting the clock frequency of the bus comprises adjusting the variable clock frequency of the bus from a non-zero value to another non-zero value without stopping a clock.

14. A system comprising:

a bus capable of operation at a variable clock frequency;

a first master device coupled to the bus, the first master device configured to provide a request to change a clock frequency of a high-speed clock in response to a predefined change in performance of the first master device, wherein the predefined change in performance is due to loading of the first master device as measured within a predefined time interval; and

a programmable clock controller having an embedded computer program therein, the computer program including instructions to:

receive the request provided by the first master device;

provide the clock frequency of the high-speed clock as an output to control a clock frequency of a second master device coupled to the bus in response to receiving the request provided by the first master device; and

provide the clock frequency of the high-speed clock as an output to control the variable clock frequency of the bus in response to receiving the request provided by the first master device.

15. The system of claim **14**, wherein the computer program further includes instructions to adjust the variable clock frequency of the bus to a predetermined frequency when no request is received from the first master device.

16. The system of claim **14**, wherein the first master device performs a clock-frequency evaluation prior to generating the request, and wherein the loading of the first master device includes a level of audio processing of a Moving Picture Experts Group Phase 1 (MPEG-1) Audio Layer-3 (MP3) player.

17. The system of claim **14**, wherein the instructions to provide the clock frequency of the high-speed clock as an output to control the variable clock frequency of the bus include instructions to adjust the clock frequency of the bus.

18. A system comprising:

a bus capable of operation at a variable clock frequency;

a first master device coupled to the bus;

an arbiter coupled to the bus and coupled to the first master device, the arbiter configured to control flow of data on the bus; and

a clock controller coupled to the arbiter and coupled to the first master device, the clock controller configured to output a clock frequency of a high-speed clock to control the variable clock frequency of the bus and to control a clock frequency of a second master device coupled to the bus, the clock controller configured to receive a request to change the clock frequency of the high-speed clock from the first master device, the request sent from the first master device in response to a predefined change in performance of the first master device, wherein the clock controller is configured to adjust the variable clock frequency of the bus in response to receiving the request from the first master device, and wherein the predefined change in the performance is due to loading of the first master device as measured within a predefined time interval.

19. The system of claim **18**, wherein the first master device performs a clock-frequency evaluation prior to generating the request and wherein the change in performance comprises a change in power consumed by the first master device.

20. The system of claim **18**, wherein the clock controller automatically adjusts the variable clock frequency of the bus to a predetermined frequency when no requests are received from the first master device.

21. The system of claim **18**, wherein adjusting the variable clock frequency of the bus comprises decreasing the clock frequency of the bus.

22. The system of claim **18**, wherein adjusting the variable clock frequency of the bus comprises selecting the variable clock frequency to be a frequency divisible by a factor of 1, 2, 4, 8, or 16.

23. The system of claim **18**, wherein the predefined change in the performance of the first master device comprises a variation in a signal output of a Moving Picture Experts Group Phase 1 (MPEG-1) Audio Layer-3 (MP3) player.

24. The system of claim **18**, wherein the predefined change in the performance of the first master device comprises a variation in load of the first master device.

25. The system of claim **24**, wherein the load of the first master device includes a level of audio processing of a Moving Picture Experts Group Phase 1 (MPEG 1) Audio Layer-3 (MP3) player.

26. The system of claim **18**, wherein the predefined change in the performance of the first master device comprises a change in power consumed by the first master device and wherein the request to change the variable clock frequency of the bus comprises a request to increase the variable clock frequency of the bus.

27. The system of claim **18**, wherein adjusting the variable clock frequency of the bus comprises adjusting the variable clock frequency of the bus from a non-zero value to another non-zero value without stopping a clock.

* * * * *

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UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATIONS

Case Number: 2023-2158, 2023-2159

Short Case Caption: VLSI Technology LLC v. OpenSky Industries, LLC

Instructions: When computing a word, line, or page count, you may exclude any items listed as exempted under Fed. R. App. P. 5(c), Fed. R. App. P. 21(d), Fed. R. App. P. 27(d)(2), Fed. R. App. P. 32(f), or Fed. Cir. R. 32(b)(2).

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Date: 10/24/2024

Signature: /s/ Jeffrey A. Lamken

Name: Jeffrey A. Lamken

FORM 31. Certificate of Confidential Material **Form 31**
July 2020

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

CERTIFICATE OF CONFIDENTIAL MATERIAL

Case Number: 2023-2158, 2023-2159

Short Case Caption: VLSI Technology LLC v. OpenSky Industries, LLC

Instructions: When computing a confidential word count, Fed. Cir. R. 25.1(d)(1)(C) applies the following exclusions:

- Only count each unique word or number once (repeated uses of the same word do not count more than once).
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☐ This number exceeds the maximum permitted by Federal Circuit Rule 25.1(d)(1), and the filing is accompanied by a motion to waive the confidentiality requirements.

Date: 10/24/2024

Signature: /s/ Jeffrey A. Lamken

Name: Jeffrey A. Lamken