

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HP INC., DELL TECHNOLOGIES INC., DELL INC.,
LENOVO (UNITED STATES) INC
Petitioner,

v.

UNIVERSAL CONNECTIVITY TECHNOLOGIES, INC.,
Patent Owner.

IPR2024-01428
Patent 7,154,905 B2

Before KARL D. EASTHOM, THOMAS L. GIANNETTI, and
MIRIAM L. QUINN, *Administrative Patent Judges*.

Opinion for the Board filed by QUINN, *Administrative Patent Judge*.

Opinion Dissenting filed by EASTHOM, *Administrative Patent Judge*.

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

I. INTRODUCTION

This proceeding involves claims 1–3, 5, 7–10, 12, 14–17, 20–23, and 26 of U.S. Patent No. 7,154,905 B2 (Ex. 1001, “the ’905 patent”) which describes using out-of-band symbols to transmit control information. Ex. 1001, [57]. The Petitioner here is HP Inc., Dell Inc., Dell Technologies Inc., and Lenovo (United States) Inc. Paper 1 (“Pet.”). The Patent Owner is Universal Connectivity Technologies, Inc. Paper 9 (“Prelim. Resp.”). Patent Owner argues that we deny the Petition based on discretionary denial under 35 U.S.C. § 314. Institution of inter partes review is discretionary. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”). Because we agree with Patent Owner that we should discretionarily deny institution due to the state of parallel district court litigation, and as explained more fully below, we do not institute *inter partes* review.

II. BACKGROUND

After the Petition and Preliminary Response were filed, the Office rescinded the June 2022 memorandum entitled “Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation.” Based on the change of binding guidance, we permitted additional briefing. Thus, Petitioner filed a Reply to the Preliminary Response (“Reply”) (Paper 10) and Patent Owner filed a corresponding Sur-reply (“Sur-reply”) (Paper 11) addressing discretionary denial.

A. *Related Matters*

This proceeding is one of seven involving the same parties and the same underlying district court litigation that is the focus of our analysis. The '905 patent at issue here, as well as the patents in the other proceedings, are involved in three parallel district court cases (Paper 7):

- 1) *Universal Connectivity Technologies Inc. v. Dell Technologies Inc., et al.*, No. 1:23-cv-01506-RP (W.D. Tex.) (“the Dell litigation”);
- 2) *Universal Connectivity Technologies Inc. v. HP Inc.*, No. 4:24-cv-04097-YGR (N.D. Cal.) (“the HP litigation”); and
- 3) *Universal Connectivity Technologies Inc. v. Lenovo Group Limited*, No. 2:23-cv-00449-JRG (E.D. Tex.) (“the Lenovo Group litigation”).

According to Patent Owner, there is a fourth litigation concerning a U.S. based, wholly-owned subsidiary of Lenovo Group, Lenovo US, and that action for declaratory judgment is pending in Delaware, No. 1:24-cv-01126-RGA. Prelim. Resp. 41 n.1. The subject matter of this fourth litigation does not appear to involve invalidity of any patent, so it is not relevant to our exercise of discretion.

III. ANALYSIS

In exercising the Director’s discretion under § 314(a), the Board may consider “events in other proceedings related to the same patent, either at the Office, in district court, or the ITC.” Patent Trial and Appeal Board Consolidated Trial Practice Guide, 58 & n.2 (Nov. 2019) (“CTPG”). *NHK Spring* explains that the Board may consider the advanced state of a related district court proceeding, among other considerations, as a “factor that

weighs in favor of denying the Petition under § 314(a).” *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential). Additionally, the Board’s precedential order in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–16 (PTAB Mar. 20, 2020) (precedential) (“the *Fintiv Order*” or “*Fintiv*”) identifies several factors for analyzing issues related to the Director’s discretion to deny institution in view of related litigation, with the goal of balancing efficiency, fairness, and patent quality.

When considering related litigation, the Board evaluates the following factors (“*Fintiv* factors”):

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Fintiv Order at 5–6.

A. Evidence of Stay (Factor 1)

Of the three district court proceedings, the Lenovo Group litigation, pending in the Eastern District of Texas, is the most significant to our analysis here. In the Lenovo Group litigation, the parties have not requested

a stay. Prelim. Resp. 41–42. Patent Owner argues that the Lenovo Group litigation is not likely to be stayed based on that court’s low grant rate in other cases and the progress of that case in particular. *Id.* at 43–45. The court in the HP litigation denied a stay without prejudice, and stated that a stay could be reconsidered in the future depending on the outcome at the PTAB. Reply 4. The Dell litigation has been stayed. *Id.*

On this record, we decline to speculate as to how any of the involved district courts where no stay is pending might rule on any future motion to stay. Thus, we determine that, while one stay has been granted, the lack of a stay in the other underlying district court cases, especially the Lenovo Group litigation, is not sufficiently persuasive to weigh this factor against exercising discretion. Therefore, this factor has a neutral effect on the overall balancing of the *Fintiv* factors.

B. District Court Trial Date (Factor 2)

The scheduled trial date for the Lenovo Group litigation is November 3, 2025, which is about six months prior to the expected date for the final written decision here (i.e., late April 2026). *See* Prelim. Resp. 45; IPR2024-01429, Ex. 2002 (Lenovo Group litigation Case Docket Control Order), 1 (listing trial date as Nov. 3, 2025). Petitioner argues this trial date is speculative. Reply 4. Further, Petitioner focuses its argument on what it terms a “growing backlog” in the Eastern District of Texas and the status of the HP litigation, which is currently set for trial on September 21, 2026. *Id.*

Patent Owner argues that “both the scheduled trial date and the date of trial based on median time-to-trial statistics occur many months before a final written decision would be expected in this forum.” Sur-reply 2. Patent Owner asserts that the time-to-trial statistics for the Eastern District of Texas

project a median time-to-trial of 21.9 months. This projection yields a trial date of July 2025, which is about 9 months prior to the expected final written decision date of April 2026. *See* Prelim. Resp. 46 (citing Ex. 2001 (U.S. District Courts—Federal Court Management Statistics—Profiles—September 30, 2024 Reporting)).

As with the previous factor, the status of the Lenovo Group litigation is our focus here. As stated, that trial is set to occur about six months before a final written decision would issue in this proceeding. The District Court has stated that this trial date setting “cannot be changed without an acceptable showing of good cause.” Prelim. Resp. 46. We are not persuaded by Petitioner’s unsupported argument that the trial date is speculative. We also consider the fact that the median time-to-trial statistic discussed by both parties projects a trial date of July 2025, earlier than the actual date set by the District Court. Ex. 2001; Prelim. Resp. 46; Reply 5. The fact that the time-to-trial statistic is earlier than the trial date set by Judge Gilstrap confirms that the schedule set by the District Court is credible and should be given weight. From this evidence, we are persuaded that we should rely on the trial date in the Lenovo Group litigation as the main indicator of a trial court reaching the merits of the invalidity of the patent-at-issue before we issue a final written decision.

Accordingly, this factor strongly favors exercising discretionary denial.

C. Investment in Parallel Litigation (Factor 3)

This factor relates to the “amount and type of work already completed in the parallel litigation by the court and the parties at the time of the institution decision.” *Fintiv* at 9.

As for the amount and type of work expended by the parties, we understand that Patent Owner has “conducted extensive third party discovery from [Lenovo Group Limited]’s suppliers.” Prelim. Resp. 47. By the time the institution decisions issue, the parties would have completed the claim construction briefing, with a Markman hearing scheduled soon, *i.e.* for May 20, 2025. *See id.*; Sur-reply 3.¹ This activity is all in connection with the Lenovo Group litigation; the Dell and HP litigations have had no significant activity of note. Reply 5. As for the District Court’s work in the Lenovo Group litigation, although there have been discovery motions and other activity in connection with claim construction², the amount of work that has been performed to date does not support a concern for the investments made in that litigation.

Balancing the evidence before us, we are persuaded that the Lenovo Group litigation activity by the court and the parties has little to no impact on the analysis of the third factor. Accordingly, this factor is neutral.

D. Overlap of Issues (Factor 4)

Under the fourth *Fintiv* factor, we consider “overlap between issues raised in the petition and in the parallel proceeding.” *Fintiv Order* at 12. Petitioner stipulates that if we institute trial, Petitioner “will not to pursue in District Court litigation the specific grounds asserted in *inter partes* review [], or on any other ground that was raised or could have been reasonably raised in an IPR.” Ex. 1017 (stipulation by Dell Technologies Inc., and Dell

¹ The District Court recently re-scheduled the Markman hearing to May 20, 2025, from its originally scheduled date of May 12, 2025.

² As noted *supra*, a *Markman* hearing has not been held, and there is no *Markman* order that would have required efforts by the district court.

Inc., and citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential)); Ex. 1018 (identical stipulation by HP Inc.); Ex. 1019 (identical stipulation by Lenovo (United States) Inc.); Ex. 1020 (identical stipulation by Lenovo Group Limited).

In its Sur-reply, Patent Owner contends that the *Sotera* stipulations do not mitigate concerns of overlap because the stipulations state that Petitioner “expressly reserved the right to challenge invalidity at the district court based on the same references relied upon here in combination with ‘any system, product, or public knowledge or use that embodies’ any of the identified prior art patents or printed publications.” *See* Sur-reply 3–4 (quoting Exs. 1018–21). We do not agree with Patent Owner. The overlap of claims between this proceeding and the litigation is complete, and the prior art references involved here are the same as some of the prior art involved in the litigation. Prelim. Resp. 48. Although we acknowledge Patent Owner’s concern about lack of overlap stemming from Petitioner’s reservation of rights in its *Sotera* stipulation, our evaluation at this juncture is based on the facts before us, not on how Petitioner *might* challenge the validity of the patent at trial. Further, Patent Owner does not identify any art asserted by Petitioner in the litigation that might fall within this reservation. On the present record, Petitioner’s broad stipulation mitigates certain concerns of duplicative efforts between the District Court and the Board, as well as concerns of potentially conflicting decisions. *Sotera*, Paper 12 at 19.

Accordingly, factor 4 strongly favors not exercising discretionary denial.

E. Defendants in District Court (Factor 5)

Under the fifth *Fintiv* factor, we consider “whether the petitioner and the defendant in the parallel proceeding are the same party.” *Fintiv Order*, Paper 11 at 13. “[I]f the parties are the same in the *inter partes* proceeding and in the parallel proceeding. . . . this factor supports denying institution.” *Sotera* at 19 (citations omitted). Patent Owner states that “there is no dispute that Petitioners are defendants” in the Lenovo Group litigation, and the Dell litigation and the HP litigation are the same in that respect. Prelim. Resp. 50.

Petitioner contends that Factor 5 “is at worst, neutral.” Reply 5. Petitioner contends that “*Fintiv* did not suggest Factor 5 favors denial when the petitioner is the defendant, instead noting that ‘if a petitioner is unrelated’ this fact weighs ‘against exercising discretion.’” *Id.* (quoting *Fintiv* at 13–14). Petitioner notes that “neither Dell nor HP is a party” in the Lenovo Group litigation, upon which Patent Owner relies, and the fact “that Dell and HP are parties to [the Dell litigation and the HP litigation] has no bearing on Factor 5.” *Id.*

Patent Owner argues that “Petitioner[] provide[s] no support for [its] contention that this factor is neutralized when less than all parties to the IPR proceeding are also parties to a district court litigation involving the same patent.” Sur-reply 4. Patent Owner contends that “[b]ecause the [P]etitioner and the defendant in the parallel proceeding are the same party, this factor weighs in favor of discretionary denial.” Prelim. Resp. 42.

On the record before us, we discern no reason to treat Petitioner Lenovo (US) and its parent as separate parties for the purpose of this *Fintiv* analysis. Petitioner identifies Lenovo Group Limited as a real party in

interest. Pet. 83 (“Petitioners hereby name Dell Inc., Dell Technologies Inc., HP Inc., and Lenovo (United States) Inc. as real parties-in-interest and, solely because it is named as a defendant in a co-pending district court case listed below, further identify Lenovo Group Ltd. as a real party-in-interest.”). Lenovo Group Limited has submitted a *Sotera* stipulation in this case. Therefore, all the parties comprising Petitioner are involved as defendants or as a real party-in-interest to a defendant in the parallel district court litigations.

Accordingly, factor 5 weighs in favor of discretionary denial.

F. Other Circumstances, Including the Merits (Factor 6)

This sixth factor takes into account other circumstances that may bear on the decision to exercise discretion to deny, such as the merits of the patentability challenges. *Fintiv Order*, at 14–16. This factor also supports the exercise of discretion because on the merits of the case, on the present record, there are significant weaknesses that call into question the strength of the Petition. *Fintiv Order*, at 15 (“[I]f the merits of the grounds raised in the petition are a closer call, then that fact has favored denying institution when other factors favoring denial are present. . . there may be strengths or weaknesses regarding the merits that the Board considers as part of its balanced assessment”). We therefore turn to a discussion of the merits.

1. The '905 patent

The '905 patent describes a serial communications link for communicating between hosts and data store devices. Ex. 1001, 6:43–47. The link involves a hierarchy of communication layers: transport, link, and physical layers. *Id.* at 6:60–64. The link layer receives codes from the transport layer, and encodes them into symbols. *Id.* at 8:60–62. The

physical layer receives the symbols from the link layer, symbolizes the symbols, and transmits them via the communication link. *Id.* at 9:2–5. The link layer also generates control symbols, which a data selector inserts into the sequence of symbols that are to be transmitted. *Id.* at 9:35–46.

The serial communication link also transmits data packets, typically comprising in-band symbols “with certain desirable characteristics, such as with its number of bit transitions optimized.” *Id.* at 11:49–52. The physical layer continually transmits symbols onto the serial communication link. *Id.* 11:52–54. The link layer provides IDLE symbols to the physical layer for transmission when no packets are available to be transmitted. *Id.* at 54–56.

An IDLE symbol is an out-of-band symbol, “which is a symbol that does not normally appear within a packet because it may not have the same desirable characteristic as an in-band symbol (e.g., bit transitions are not optimized).” *Id.* at 11:56–60. A transition from receiving IDLE symbols (or out-of-band symbols) to receiving in-band symbols is how a receiving link layer identifies the start of a packet. *Id.* at 11:60–62. The end of a packet is similarly detected, via identifying a transition from receiving in-band symbols to receiving IDLE symbols (out-of-band) symbols. *Id.* at 11:62–64. “Because control information is encoded as out-of-band symbols, the control symbols can be inserted into a sequence of in-band symbols and readily detected as control symbols when received.” *Id.* at 12:3–6. Therefore, control symbols can be “interspersed with the transmission of symbols of a packet” so that link control information can be provided while packets are being transmitted in both directions. *Id.* at 12:7–11.

2. *The Claims*

The independent claims of the '905 patent plainly recite a sequence of “indicator” transmissions to preempt a data packet so that a second packet may be transmitted. These claims require that the “packets include in-band symbols and the indicators include one or more out-of-band symbols.”

Ex. 1001, 38:13–14, 38:41–43, 39:1–5. At the heart of a dispute between the parties is how to distinguish “packets” from “indicators”—in other words, what is an in-band symbol versus an out-of-band symbol. From the context of the specification and the claim language we come to understand that the claimed “packets” are distinct from the “indicators” and that an “indicator” cannot be inserted or be part of a packet.

Our reasoning for this understanding stems from the words “in-band” and “out-of-band,” which denote that the configuration of the symbols is significant in telling the difference between a “packet” and an “indicator.” The '905 specification supports this because it describes non-optimized bit transitions as a characteristic of an “in-band symbol,” (Ex. 1001, 11:50–52, 59–60) while the “out-of-band symbol” is one with non-optimized bit transitions (*id.* at 11:56–60). Because of this characteristic, the packet is distinguishable from the indicators. As the specification describes, the “out-of-band symbol” is one that does not normally appear within a packet. *Id.* And therefore, transmission of out-of-band symbols can be interspersed with transmission of in-band symbols, and they can be readily detected because they are encoded as such. *Id.* at 12:3–1. In the end, the independent claims separately recite packets and indicators, and the specification discloses that the symbols in each are different, the essence of this difference stemming from how they are encoded.

Petitioner took the position in its Petition that no claim term required construction. Pet. 6. However, when addressing the various grounds, it became clear to us that the scope of “in-band” or “out-of-band” symbols is a significant issue by the manner in which Petitioner mapped the prior art to the claim. Pet. 18–21, 55–57. In short, the Petition maps the “out-of-band symbols” to portions of data packets, relying on its interpretation of portions of the ’905 patent specification. *Id.* Patent Owner challenges Petitioner’s interpretation and how it applies the prior art with respect to the claimed “indicators.” Prelim. Resp. 18–22, 25–28. We are persuaded that the arguments presented by Patent Owner show considerable weaknesses in Petitioner’s positions. And Petitioner’s response to those arguments, submitted in Reply (Reply 1–3), further highlight a fundamental problem with Petitioner’s case: the claim language, enlightened by the context of the specification does not support the contention that an “indicator” may be transmitted within a data packet and be considered an “out-of-band symbol.”

3. *Discussion of Grounds*

Petitioner presents four grounds that rely primarily on two prior art references Banes³ and Calvignac.⁴ Pet. 7. For the Banes grounds, Petitioner relies on Banes’s disclosure of a “spare” or “unused” code that is inserted into the payload of the data packet. Pet. 20–21. Ex. 1005, Fig 4 (data portion of data packet 102a), 11–12. As to the Calvignac grounds, Petitioner relies on the transmission of a trailer byte and an X7E flag that are inserted

³ U.K. Patent Application No. GB 2344029, published on May 24, 2000. (Ex. 1005, “Banes”).

⁴ U.S. Patent No. 5, 557, 608, filed on May 22, 1995. (Ex. 1004, “Calvignac”).

into Calvignac's data packet. Pet 55–57; Ex. 1004, 5:45–49 (inserting “a 1-byt trailer into the current [Non-Real-Time] packet which indicates that this packet will be preempted b at least one R[eal-]T[ime] packet”). Petitioner's reliance on inserting a special code or flag into a data packet does not explain the distinction that “packets include in-band symbols” and the “indicators include out-of-band symbols.” And an argument that these codes or flags may be recognized as having a specific preempt function does not alone make them “out-of-band symbols.”

The testimony of Mr. Wolfe is not entirely persuasive on this point, either. The testimony presumes that a symbols is “out-of-band” because an unused code is one that does not fit the parameters of the in-band coding scheme. Ex. 1003 ¶ 95. Therefore, a code that is unused and not “in-band” must be “out-of-band.” *Id.* But this assertion is unsupported by Banes, which does not describe the spare code in any meaningful way—especially not with regard to how the encoding for the spare code's symbols differs in any way from the encoding from other non-spare symbols. Ex. 1005, 11–12.

The testimony of Mr. Wolfe regarding Calvignac fares no better. It presumes that the trailer byte and X7E code are “out-of-band” simply because they are inserted into the packet, and therefore, not “typically” contained within a packet. Ex. 1003 ¶ 222. The testimony also concludes that Calvignac discloses the “indicators” just because the byte and flag serve the same purpose as the “out-of-band” symbols. *Id.* ¶ 223. Furthermore, the testimony alludes to the flag forming a sequence of seven 1's as evidence that the number of bit transitions indicates the flag is an “out-of-band” symbol. *Id.* ¶ 224. This explanation seems to be form over substance.

Calvignac details how its flag detector monitors the bit stream. Ex. 1004, 9:14–54. The X7E flag is a flag that Calvignac uses to indicate the beginning and the end of a packet. Ex. 1004, 4:15–22. And it is detected by counting how many one’s in a row are received in sequence. *Id* at 4:28–33, 9:18–23. Calvignac is not about detecting a number of transitions, it is about a specific sequence of 1s. This presents a considerable weakness in Petitioner’s anticipation challenge of the claims.

Finally, Petitioner argues obviousness over each of Banes and Calvignac. These assertions of obviousness rely on testimony on the understanding of a person of ordinary skill in the art of the “spare” code and flags as “out-of-band symbols.” Pet. 20–21. Petitioner also argues that it was “well-known” to include in-band symbols in data packets and to include out-of-band symbols in control indicators to obtain the benefit of allowing data payload information to be readily distinguished from control information. Pet. 63–64. The testimony cited in support relies on the disclosure of Shin ’464 for this statement.⁵ Ex. 1003 ¶ 225. The exact same disclosure of an 8-bit encoding technique that uses in-band and out-of-band symbols within a transmission is found in another Shin patent that is incorporated by reference in the ’905 patent and has overlapping inventors. Ex. 1006, 9:60–10:8, Ex. 1008, 5:15–28, Ex. 1001, 24:50–55. In other words, the alleged benefit may be better characterized as part of the inventor team’s work rather than a technique “well-known” in the art. And for this reason, Petitioner’s obviousness contentions are less persuasive.

⁵ U.S. Patent No. 5,974,464, filed September 30, 1996. (Ex. 1006, “Shin ’464”).

4. *Conclusion Regarding the Merits*

The discussion above identifies weaknesses that we have considered in our evaluation of the *Fintiv* factors. For the reasons given, we determine that this Petition does not present particularly strong merits.

G. *Conclusion of Fintiv Factor Balancing*

We have considered the circumstances and facts before us in view of the *Fintiv* factors. We take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review” when evaluating these factors. *Fintiv Order*, at 6. Because of the *Sotera* stipulation, factor 4 weighs strongly in favor of not exercising discretion. However, two other factors weigh in favor of exercising discretion, especially the trial date factor. The merits of Petitioner’s challenge are not particularly strong. A balanced assessment of the factors leads us to exercise discretion to deny the Petition.

Therefore, we conclude that the evidence of record favors exercising our discretion under 35 U.S.C. § 314(a) to deny institution of an *inter partes* review challenging claims.

IV. CONCLUSION

Upon consideration of the Petition, the Preliminary Response, and the evidence presented, we exercise our discretion under 35 U.S.C. § 314(a) to deny institution of an *inter partes* review challenging claims 1–3, 5, 7–10, 12, 14–17, 20–23, and 26 of the ’905 patent.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied*, and no trial is instituted

UNITED STATES PATENT AND TRADEMARK OFFICE

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HP INC., DELL TECHNOLOGIES INC., DELL INC.,
LENOVO (UNITED STATES) INC
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UNIVERSAL CONNECTIVITY TECHNOLOGIES, INC.,
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IPR2024-01428
Patent 7,154,905 B2

Before KARL D. EASTHOM, THOMAS L. GIANNETTI, and
MIRIAM L. QUINN, *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*,

I respectfully disagree with the conclusion that we should exercise discretion to deny institution under 35 U.S.C. § 314(a), based upon the analysis of the discretionary denial factors articulated in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential) (hereafter “*Fintiv*”). I concur with the majority’s analysis of *Fintiv* factors 1–5 but, for reasons explained below, I differ as to factor 6. I further determine that the factors, on balance, weigh against exercising discretion to deny institution.

I. CLAIM CONSTRUCTION

In the initial briefs, the parties agree that the no claim terms require express construction at this stage. *See* Pet. 6; Prelim. Resp. 5. The claims each recite an “out-of-band symbol.” In particular, limitation 1.i recites “wherein the packets include in-band symbols and the indicators include one or more out-of-band symbols.”

The parties agree “an ‘out-of-band’ symbol is a symbol that does not normally appear within a packet.” Pet. 6; Prelim. Resp. 28; Reply 2. Petitioner notes that the ’905 patent specification “plainly states that ‘an “out of-band” symbol . . . is a symbol that does not normally appear within a packet.’” Reply 2 (quoting Ex.1001, 11:57). Patent Owner initially agrees, stating that “[i]n the ’905 [p]atent, *an ‘out-of-band’ symbol is a symbol that does not normally appear within a packet.*” Prelim. Resp. 28 (emphasis added).

However, as Petitioner recognizes, Patent Owner sets up an implied claim construction by contradicting the previous statement, by asserting that “[a] symbol that appears in a packet is an ‘in-band’ symbol.” Prelim. Resp. 21. Then, in its Sur-reply, Patent Owner appears to back off its assertion that the claims preclude an out-of-band symbol from appearing in a packet: “Petitioners address a strawman argument, ignoring the [Preliminary Response’s assertions] that ‘*the process by which a symbol was placed in the packet*’ is not determinative of whether it is in-band or out-of-band . . . and Petitioners do not contend that an inserted symbol *is necessarily* ‘out-of-band.’” Sur-reply 1 (citing Prelim. Resp. 21, 27) (emphasis added).

Petitioner shows that the ’905 patent specification states the following: “Because control information is encoded as out-of-band

symbols, the control symbols *can be inserted into a sequence of in-band symbols* and readily detected as control symbols when received. The control symbols *can be interspersed with the transmission of symbols of a packet*” Reply 3 (emphasis and alteration in original) (quoting Ex.1001, 12:3–9). As Petitioner shows, this passage specifically contemplates out-of-band symbols as control symbols inserted into a packet.

To the extent an out of band packet requires more, for example, that an out-of-band symbol must contain a different number of bit transitions than an in-band symbol, Petitioner shows that the prior art renders this obvious in its showing for claim 3, as discussed below. *See* Ex. 1001, 24:41–45 (For one embodiment “[a]ll the symbols generated by alternate bit inversion encoding are referred to as ‘in-band symbols’ because they are 9-bit symbols with at least four transitions. All 9-bit symbols with three or less transitions are referred to as ‘out-of-band symbols.’”). Patent Owner does not assert that the claim construction requires in-band and out-of-band symbols to have a different number of bit transitions. Although Patent Owner argues that “[t]he ’905 [p]atent does not disclose that the number of transitions is determinative of whether a symbol is an in-band symbol or an out-of-band symbol,” this does not address the number of bit transitions of in-band symbols relative to out-of-band symbols. *See* Prelim. Resp. 28.

Based on the intrinsic record, Petitioner contends that “mere appearance within a packet does not disqualify a symbol from being an ‘out-of-band’ symbol.” Reply 3. The preliminary record supports Petitioner’s claim interpretation.⁶

⁶ Petitioner shows how Calvignac and Banes perform the remaining steps of claim 1, and Patent Owner does not challenge this showing. *See* Pet. 10–21,

II. CALVIGNAC

Petitioner contends that Calvignac discloses or renders obvious limitation 1.i. Pet. 62–64. Patent Owner need not address Petitioner’s showing. Patent Owner does not specifically address Petitioner’s obviousness showing, other than to assert it is “conclusory” without explaining why it is conclusory. *See* Prelim. Resp. 29–30.

Petitioner shows, on this limited record, that “it was well-known to include . . . in-band symbols in data packets and to include such out-of-band symbols in control indicators to obtain the well-known benefit of allowing data or payload information to be readily distinguished from control information.” *See* Pet. 63 (citing Ex. 1003 ¶ 225 (relying on prior art to Shin ’464 “as discussed above” (Ex. 1006)); Ex. 1003 ¶ 105 (“Shin ’464 is another example, as it teaches that ‘each character corresponding to one of these ‘out-of-band’ characters associated with the high transition set includes

50–64. On this preliminary record, claim 1 does not preclude the claimed first packet from including the claimed indicators. *See* Ex.1001, 12:3–12:9 (discussed above). Limitation 1.d recites “stopping the transmitting of the first packet so that not all of the first packet has been transmitted,” followed by limitations 1.e–1.h, which recite [1.e] transmitting a preempt indicator; [1.f] transmitting the second packet; and [1.g] upon completion of transmitting the second packet, transmitting a continue indicator; and [1.h] transmitting the portion of the first packet that has not yet been transmitted. On this preliminary record, consistent with the specification, claim 1 does not preclude inserting a preempt indicator into the packet after stopping transmission of a first portion of the packet, and then transmitting that portion (with the preempt indicator) of the packet. Similar remarks apply to limitations 1.g and 1.f, namely, the limitations do not preclude transmitting the continue indicator as part of the first packet and also transmitting the (original) portion of the first packet that has not yet been transmitted.

less than four logical transitions,” and “[t]he difference in the number of transitions between in-band and out-of-band characters allows selected out-of-band characters to serve as control characters, and to be readily distinguished from in-band characters within the transmitted data stream.” (quoting Ex.1006, 9:66-10:8)).⁷ The record supports this un rebutted showing. That is, the preliminary record shows that such a feature was well-known and Petitioner provides rationale supported by a factual underpinning for implementing in-band and out-of-band characters in Calvignac’s similar packet preemption system.

To support its showing, Petitioner notes that Calvignac’s system seeks to distinguish control or trailer bytes as separate from packet data. Pet. 63 (citing Ex.1004, 9:14–18, 9:39–42; Ex. 1003 ¶¶ 222–223). It appears on this preliminary record that there are two options at the sole point of novelty for purposes of institution, either the control symbols and the data symbols are in the same band (i.e., both in-band), or the data symbols are in-band and control symbols are out-of-band (i.e., in different bands). *See Google LLC v. Koninklijke Philips N.V.*, 795 F. App’x 840, 844 (Fed. Cir. 2020) (“[T]he Court’s declarations about ‘mere substitution of one element for another known in the field,’ with ‘predictable results,’ . . . , indicate that the obvious-to-try inquiry at least sometimes must focus on known options at what is undisputedly the sole point of novelty in the claim at issue (quoting *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007)).

⁷ Shin ’464 is a § 102(b) prior art patent. *Compare* Ex. 1006, code 45 (issued Oct. 26, 1999), *with* Ex. 1001, code (60) (provisional application filed Nov. 22, 2000).

Moreover, Petitioner shows that Calvignac’s symbols are out-of-band and transition optimized to have minimal changes relative to the in-band symbols. That is, Calvignac at least suggests that its in-band symbols are not optimized and therefore do not have less than three transitions (except by chance) because Calvignac does not mention optimizing the in-band symbols. As discussed above, Petitioner also shows that it would have been obvious to employ both types at least as a suitable option to readily distinguish desired control and packet data, where packet data is normally in a packet. *See Intel Corp. v. PACT XXP Schweiz AG*, 61 F.4th 1373, 1379–80 (Fed. Cir. 2023) (“[I]f there’s a known technique to address a known problem using ‘prior art elements according to their established functions,’ then there is a motivation to combine . . . [and] ‘[i]t’s not necessary to show that a combination is the best option, only that it be a suitable option.’”) (emphasis omitted).

For the above reasons, Petitioner’s showing is particularly strong as to *Fintiv* factor 6. Accordingly, on balance, the *Fintiv* factors weigh against exercising discretion to deny institution.

III. BANES

As Patent Owner acknowledges, Banes teaches “packet preemption using an interrupt code and a resumption code in a[] . . . network.” Prelim. Resp. 8. Similar to the dispute with respect to Calvignac, the only reasonable dispute for purposes of institution is whether Banes discloses or suggests implementing the known prior art method of implementing in-band and out-of-band indicators in a packet preemption system.

Claim 3 depends from claim 1 and recites “[t]he method of claim 1 wherein the in-band symbols are transition optimized and the out-of-band

symbols are not transition optimized.” On this preliminary record, Petitioner shows that “Banes discloses transition optimized data blocks, and thus, in-band symbols [that] are transition optimized, because it discloses that the packets may be ‘Ethernet data packets,’ which use an 8b/10b coding scheme.” Pet. 22 (citing Ex.1005, code (57), 2:17–20, 9:21–24, 12:5–13, 12:18–19).

Similar to its showing for claim 1 based on Calvignac, Petitioner asserts that a person of ordinary skill in the art:

would have . . . been motivated to use non-transition optimized out-of-band symbols, because such was well known in the art at the time of the ’905 patent for providing the benefit of allowing such out-of-band symbols to be distinguishable from in-band symbols as taught by Shin ’571 [(Ex. 1008)] and Shin ’464 [(Ex. 1006)].

Pet. 23 (citing Ex.1006, 9:66–10:8; Ex. 1008, 5:15–27; Ex. 1003 ¶¶ 104, 105).⁸ Based on this well-known in-band and out-of-band scheme as reflected in prior art patents to Shin ’571 and Shin ’464, Petitioner also asserts that a person of ordinary skill in the art:

would have known that Banes’ out-of-band interrupt and resume codes would need to be distinguishable from the in-band data to be able to perform their function of indication interruption and resumption, and, as such, would have been motivated to use the well-known technique of using out-of-band symbols that are not transition optimized to provide the well-known benefit of making such out-of-band symbols distinguishable from such transition-optimized in-band symbols.

⁸ As noted above, Shin ’464 is a § 102(b) prior art patent. Shin ’571 is a § 102(a) prior art patent. *See* Ex. 1008, code 45 (issued Dec. 7, 1999), code 75 (listing overlapping and different inventors as compared to the ’905 patent).

Pet. 24 (citing Ex. 1003 ¶¶ 106–108). The cited references support Petitioner on this preliminary record. For example, at the cited passage, the prior art patent to Shin '464 (Ex. 1006), states as follows:

In accordance with another aspect of the invention, various synchronization and other special characters are defined using the high-transition and low-transition sets of out-of-band characters. Each character corresponding to one of these "out-of-band" characters associated with the high-transition set includes less than four logical transitions, and each of the out-of-band characters associated with the low-transition set of code characters includes more than four logical transitions. *The difference in the number of transitions between in-band and out-of-band characters allows selected out-of-band characters to serve as control characters, and to be readily distinguished from in-band characters within the transmitted data stream.*

Ex. 1006, 9:63–10:8 (emphasis added). That is, Petitioner's unrebutted contention shows on this preliminary record that it was well-known to implement in-band and out-of-band symbols to readily distinguish control characters from other characters of a packet preemption system, like the system of Banes.

For the above reasons, Petitioner's showing is particularly strong as to *Fintiv* factor 6. Accordingly, on balance, the *Fintiv* factors weigh against exercising discretion to deny institution.

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