

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CHARTER COMMUNICATIONS, INC. AND PLUME DESIGN, INC.
Petitioner

v.

ADAPTIVE SPECTRUM AND SIGNAL ALIGNMENT, INC.
Patent Owner

Case IPR2025-00087
Patent 11,477,108

**PATENT OWNER'S PRELIMINARY RESPONSE
UNDER 37 C.F.R. § 42.107(a)**

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Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

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PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	U.S. Patent No. 10,757,003 to Chow et al
2002	First Amended Docket Control [40], <i>Adaptive Spectrum and Signal Alignment, Inc. v. Charter Communications, Inc. et al.</i> , Case No. 2:24-cv-00124 (E.D. Tex.) filed October 10, 2024
2003	Defendant's Invalidity Contentions and Subject Matter Eligibility Contention, <i>Adaptive Spectrum and Signal Alignment, Inc. v. Charter Communications, Inc., et al.</i> , Case No. 2:24-cv-00124, (E.D. Tex.) November 1, 2024
2004	U.S. Patent Application Publication No. 2014/0321298
2005	U.S. Patent Application Publication No. 2008/0095049
2006	Instructions for Application Data Sheet (ADS) 37 CFR 1.76

I. Introduction

The Board should deny the Petition because Petitioner does not meet its burden to show that claims 1-20 (the “challenged claims”) of U.S. Patent 11,477,108 (“the ’108 patent”) are unpatentable over the applied references. The Petition presents two invalidity grounds, neither of which presents compelling reasons as to why the claims of the ’108 patent should be found unpatentable. As explained herein, despite Petitioner’s best efforts and abundant resources, Petitioner was unable to find any viable prior art beyond one of Patent Owner’s own applications (which does not qualify as prior art) and a reference that has already been thoroughly examined and found to be deficient. This reality, combined with the fact that the ’108 patent has been cited well over 50 times during the prosecution of other companies’ patents, including being cited by Petitioner (Charter Communications) itself, highlights the novelty of the inventions recited in the ’108 patent.

In addition to these overarching deficiencies, the Petition suffers from a multitude of additional statutory, procedural, and substantive deficiencies. Patent Owner addresses the following five Petition defects herein.

First, as mentioned, the sole reference presented in Ground 1 in the Petition does not qualify as prior art. Ground 1 is premised on a legally and factually unsupportable theory that the ’108 patent fails to properly claim priority to Chow-

669. This theory is built around a mischaracterization of the record, one which seeks to hide from the Board the fact that the entire, correct priority chain was identified in at least four different places either during prosecution, in the specification, or on the face of the '108 patent itself. When the '108 patent, its prosecution history, and the priority claims laid out therein are properly considered, the '108 patent meets every legal requirement to be afforded its earliest possible priority. When the correct priority date is applied, Chow-669 does not qualify as prior art, and Ground 1 fails.

Second, the Board should exercise its discretion to deny the Petition in view of the parallel litigation. Indeed, five of the six *Fintiv* factors either favor or strongly favor denial (and the sixth is neutral).

Third, Petitioner's apparent best attempt at finding prior art beyond Patent Owner's own application is reflected in Ground 2 in the Petition. Ground 2 relies on a primary reference (Werner) that was cited, applied, and overcome at every turn during prosecution of the '108 patent and its related family members. The combination of Wiley and Werner in Ground 2 does nothing to change the scope of the system already disclosed in Werner. As such, Ground 2 is cumulative of grounds that were already found to be deficient during prosecution. Specifically, Petitioner indicates in the Petition that it disagrees with the Examiner's findings concerning Werner's deficiencies and believes that Wiley discloses the allegedly

missing features. Pet., 7, 26-27. By combining Wiley with Werner in Ground 2, Petitioner merely attempts to reiterate the teachings that it alleges to already be present in Werner. Pet., 59-60. This is the epitome of redundancy, and renders it abundantly clear that there are no substantial differences between Ground 2 and the grounds already considered and overcome during prosecution. Because Ground 2, which is the only ground based on a reference that qualifies as prior art, is improperly cumulative, the Petition should be denied under 35 U.S.C §325(d).

Fourth, Petitioner has failed to establish a *prima facie* case of obviousness for the combination of references presented in Ground 2. This is not only because of the deficiencies of the applied references (discussed separately, and in detail below), but also because of Petitioner’s confusing and inconsistent approach to identifying its challenge and addressing the factual inquiries from *Graham*. See *Graham v. John Deere co.*, 383 U.S. 1 (1966) (“*Graham*”). This leaves Patent Owner, and the Board, having to make guesses about Petitioner’s challenge and to fill the gaps in Petitioner’s analysis.

Fifth, the combination of Werner and Wiley in Ground 2 also does not teach or suggest the each and every feature recited in the challenged claims. For example, and as explained below, the combination of Werner and Wiley fails to disclose or render obvious at least the claimed: (i) “*management device, comprising: a Local Area Network (LAN) interface*” and “*a Wide Area Network*

*(WAN) interface;” and (ii) “identifying one or more operational conditions within the WAN in a different communication layer from the one or more communication layers on the LAN by analyzing at least the collected LAN information.”*¹

As illustrated by the above cornucopia of defects, Petitioner has not met—and cannot meet—its burden of establishing the unpatentability of the challenged claims of the ’108 patent. Accordingly, the Board should deny the Petition.

II. Ground 1 Improperly Relies on a Reference That Does Not Qualify as Prior Art

Ground 1 in the Petition is a §102 ground that relies exclusively on Chow-669. Ground 1 is fatally flawed, however, as Chow-669 does not qualify as prior art.

Chow-669 refers to U.S. Patent Application Publication No. 2016/0294669, which published from U.S. Patent Application No. 15/182,513 (“the ’513 application”). Chow-669 is one of Patent Owner’s own applications, and is in the same patent family as the ’108 patent. In fact, Chow-669 is explicitly listed in the priority chain of the ’108 patent—being listed as the ’513 application. As such,

¹ For ease of reference, Patent Owner will identify claim language from the ’108 patent using *italics*, and will identify language quoted from other exhibits using regular font.

Petitioner's only hope to establish Chow-669 as prior art to the '108 patent is to lodge an attack on the '108 patent's priority chain. And when left with only prior art that is fraught with deficiencies, this is exactly what Petitioner did. However, Petitioner's attempt to break the '108 patent's priority chain is flawed for at least three reasons. First, Petitioner mischaracterizes the facts relating to the '108 patent's priority chain. Second, the relevant statutes and case law show that the '108 patent's priority chain is sufficiently identified. Third, Petitioner's cited case law is of little value as it is based on significantly different fact patterns. Each of these deficiencies are discussed in more detail below.

A. Petitioner mischaracterizes the facts relating to the '108 patent's priority chain

Petitioner's entire priority chain break argument is premised on a single notion—that the first priority claim listed on the two ADSs filed during prosecution of the '108 patent, which includes an incorrect priority claim to the '513 application, is the only priority information that should be considered. Pet., 8-9. Every one of Petitioner's arguments to follow rests on this implausible premise. Patent Owner does not dispute that there is indeed a single erroneous priority claim in the as-filed ADSs. However, what Petitioner fails to appropriately address is the fact that immediately following the erroneous claim, **the entire priority chain is correctly listed**, including all intermediate applications and statuses on both ADSs. *See* EX1002, 78-79, 92-93. Shown below is an example of one of these two

ADSs listing the correct priority chain for the '108 patent. EX1002, 92-93 *see also* 78-79 (showing same).

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78. When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	15182513	2016-06-14

Erroneous Priority Claim

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	~~20145-049USC2~~ 20145-049USC3
		Application Number	
Title of Invention	SYSTEMS AND METHODS FOR JOINTLY OPTIMIZING WAN AND LAN NETWORK COMMUNICATIONS		

Prior Application Status		Pending		Remove	
Application Number		Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
		Continuation of		16432364	2019-06-05
Prior Application Status		Pending		Remove	
Application Number		Continuity Type		Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16432364		Continuation of		15182513	2016-06-04
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15182513	Continuation of	13995900	2014-07-08	10333819	2019-06-25
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13995900	a 371 of international	PCTUS11021003	2011-01-12	9369370	2016-06-04

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Correct/Entire Priority Chain

EX1002, 78-79, 92-93 (annotated).

As shown above, the lone erroneous priority claim references the '513 application and incorrectly identifies its status as "Pending." But as also shown

above, the correct priority chain includes the proper priority claim to the '513 application (highlighted in yellow), including properly identifying the '513 application as "Patented." As such, the ADSs themselves unquestionably contain the entire correct priority chain, and therefore the fact that the ADSs **also include** a single erroneous priority claim is irrelevant.² This is a fact that Petitioner chose not to grapple with.

The face of the '108 patent also evidences the fact that the Patent Office correctly recognized not only the existence of the entire accurate priority chain (shown in green in the above-annotated ADS), but also that this priority chain was separate and distinct from the erroneous priority claim (shown in red in the above-annotated ADS). Indeed, as shown below, the face of the '108 patent lists the entire correct priority chain, in addition to, but separately from the erroneous priority claim to the '513 application.

² Note that the ADS instructs that the Application Number field should be left blank when referring to the current application. EX2006, 3. Thus, because the Application Number field is blank in both the first and second lines of the ADS shown above, these represent two different priorities chains.

Related U.S. Application Data

- (63) Continuation of application No. 15/182,513, filed on Jun. 14, 2016, now Pat. No. 10,333,819, and a
(Continued)

Related U.S. Application Data

continuation of application No. 16/432,364, filed on Jun. 5, 2019, now Pat. No. 10,757,003, which is a continuation of application No. 15/182,513, filed on Jun. 4, 2016, now Pat. No. 10,333,819, which is a continuation of application No. 13/995,900, filed as application No. PCT/US2011/021003 on Jan. 12, 2011, now Pat. No. 9,369,370.

EX1001, (63) (annotated).

In addition to the entire correct priority chain being listed on both ADSs immediately following the error in the first line, and on the face of the patent, the entire correct priority chain is also listed—**without any errors**—in the Cross Reference to Related Application section of the '108 patent immediately following the title. EX1001, 1:8-25. This section of the '108 patent, listing the entire correct priority chain without any errors, is reproduced below.

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation of and claims priority to U.S. patent application Ser. No. 16/432,364, filed on 5 Jun. 2019, and titled “SYSTEMS AND METHODS FOR JOINTLY OPTIMIZING WAN AND LAN NETWORK COMMUNICATIONS”, which is a continuation of U.S. patent application Ser. No. 15/182,513, filed on 14 Jun. 2016, and titled “SYSTEMS AND METHODS FOR JOINTLY OPTIMIZING WAN AND LAN NETWORK COMMUNICATIONS”, which is a continuation of U.S. patent application Ser. No. 13/995,900, filed on 8 Jul. 2014, titled “SYSTEMS AND METHODS FOR JOINTLY OPTIMIZING WAN AND LAN NETWORK COMMUNICATIONS,” which claims priority to PCT Patent Application Serial No. PCT/US2011/021003, filed on 12 Jan. 2011, titled “SYSTEMS AND METHODS FOR JOINTLY OPTIMIZING WAN AND LAN NETWORK COMMUNICATIONS,” all of which are incorporated herein by reference in their entirety for all purposes.

EX1001, 1:5-25 (annotated).

Therefore, despite Petitioner’s attempt to gloss over these correctly-identified priority chains, the fact is that the entire priority chain was identified in no fewer than four different places in either the ’108 patent itself (*see* EX1001,

(63), 1:8-25) or during prosecution of the '108 patent (*see* EX1002, 78-79, 92-93).³

As such, the '108 patent should be afforded its earliest possible priority date of January 12, 2011, such that Chow-699 simply cannot constitute prior art.

B. The '108 patent's priority chain is properly identified

35 U.S.C. §120 governs the requirements for priority claims in patent applications. In relevant part, §120 provides that an application is entitled to an earlier priority date “if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.” 35 U.S.C. §120. Thus, §120 includes a co-pendency requirement and a specific reference requirement. Petitioner's analysis only partially address the co-pendency requirement, and largely ignores the specific reference requirement. Nonetheless, both requirements are addressed here.

³ Petitioner's lone reference to these correctly-identified priority chains is the following unsupported statement: “Even if the correct priority chain is embedded somewhere in the ADS and in the patent separate from the error, the error in claiming priority to the '513 application at the time of filing renders the priority claim defective.” Pet., 11.

First, Petitioner alleges that the '108 patent's priority chain is incorrect because it "erroneously attempts to claim priority as a continuation to the '513 application without co-pendency." Pet., 11. While Petitioner's statement ignores the '108 patent's correct priority chain as discussed above, even if the statement were accurate, it ignores a key portion of §120—that the application may also be co-pending with **either** "the first application" **or** "an application similarly entitled to the benefit of the filing date of the first application." The '108 patent was filed on July 11, 2020, which is **before** U.S. Patent No. 10,757,003 ("the '003 patent")—to which the '108 patent claim priority—was issued. *See* EX2001, U.S. Patent No. 10,757,003, (45) (showing an issue date of August 25, 2020). The '108 patent was thus co-pending with the '003 patent ("an application similarly entitled to the benefit of the filing date of the first application"), and Petitioner failed to even address this fact. Therefore, the priority chain of the '108 patent satisfies the co-pendency requirement of §120.

Second, the priority chain of the '108 patent also satisfies the specific reference requirement of §120. As discussed above, the entire priority chain of the '108 patent was identified in no fewer than four different places in either the '108 patent itself (*see* EX1001, (63), 1:8-25) or during prosecution of the '108 patent (*see* EX1002, 78-79, 92-93). Each of these priority chain listings include specific references to all applications in the priority chain, and identifies each application

by application number, patent number, filing date, and/or current status. Again, Petitioner largely ignores these facts. Thus, the priority chain of the '108 patent also satisfies the specific reference requirement of §120.

For at least these same reasons, the priority chain of the '108 patent also satisfies the specific reference requirement of 37 CFR 1.78(d)(2), which recites that an application claiming an earlier priority date “must contain or be amended to contain a reference to each such prior-filed application, identifying it by application number ...”

The priority chain of the '108 patent therefore satisfies the requirements of both §120 and Rule 1.78, and the error in the first priority claim in the as-filed ADSs does not change this fact. As such, the '108 patent should again be afforded its earliest possible priority date of January 12, 2011.

C. Petitioner’s cited case law is based on significantly different fact patterns

Petitioner primarily relies on *Droplets, Inc. v. E*TRADE Bank*, 887 F.3d 1309, 1315-16 (Fed. Cir. 2018) in support of its priority chain break arguments. There are two primary issues with *Droplets*. First, *Droplets* is of little value as it is based on a significantly different fact pattern than the facts at issue here. *Droplets* addresses a situation where an Applicant referred to a previous application in the ADS as a continuation and tried to incorporate the rest of the priority chain by reference. Incorporation of a portion of the priority chain by reference is not at

issue here. As such, *Droplets* is based on an inapposite fact pattern. Second, *Droplets* does nothing more than confirm that priority claims are governed by §120 and Rule 1.78. Therefore, *Droplets* does not change the analysis performed in the prior section.

Petitioner also relies on *Apple Inc. v. e-Watch, Inc.*, IPR2015-00414, Paper 34 (June 22, 2016), in support of its priority chain break arguments. *Apple* is likewise of little value as it is also based on a significantly different fact pattern. In *Apple*, the patentee’s priority claim was found to be so fraught with issues that “[a]t a minimum, any investigation would require a review of each of the ’509, ’470, and ’073 applications.” Pet., 12-13 *citing Apple*, 18-19. Additionally, the priority claim was “not identified correctly in **any** of the documents of record and cited by the parties.”⁴ *Apple*, 18. Such is not the case here. As discussed above, despite the error in the first claim to priority in the as-filed ADSs, the entire correct priority chain was also identified in no fewer than four different places in either the ’108 patent itself (*see* EX1001, (63), 1:8-25) or during prosecution of the ’108 patent (*see* EX1002, 78-79, 92-93). Therefore, here, unlike the situation in *Apple*, a reasonable person of ordinary skill in the art (“POSA”) would not have needed to “cobble[] together the various documents relied upon by the Patent Owner in order

⁴ Emphasis added unless otherwise noted.

to establish the correct chain of priority.” Pet., 12-13 *citing Apple*, 18-19. Indeed, the proper chain of priority exists on the face of the patent; Petitioner simply ignores this fact. Consequently, *Apple* also does not change the fact that the priority chain of the ’108 patent satisfies the requirements of §120 and Rule 1.78.

* * *

For at least the above reasons, the priority chain of the ’108 patent satisfies the requirements of §120 and Rule 1.78, and should thus be afforded its earliest possible priority date of January 12, 2011. When given its proper 2011 priority date, Chow-669 (an earlier application in the ’108 patent priority chain) does not qualify as prior art. Therefore, Ground 1, which solely relies on Chow-669, is fatally flawed and should not be found to render the challenged claims unpatentable.

III. The Board Should Exercise Its Discretion to Deny Institution

Additionally, the Board should deny the Petition without looking to the merits based on its discretion, under the *Fintiv* factors.

In *Apple Inc. v. Fintiv, Inc.*, the Board articulated six nonexclusive factors for determining whether to institute an AIA post-grant proceeding where there is parallel district-court litigation. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (P.T.A.B. Mar. 20, 2020) (“*Fintiv*”). On June 21, 2022, Director Vidal issued a Memorandum re: Interim Procedure for Discretionary Denials in AIA Post-Grant

Proceedings with Parallel District Court Litigation (“*Fintiv* Memo”) clarifying the procedure that the Board should follow when evaluating the six *Fintiv* factors.

Here, the Board should exercise its discretion to deny the Petition because (1) *Fintiv* factors two through five support discretionary denial; and (2) the Petition does not provide a compelling, meritorious challenge (*Fintiv* factor six).

A. Factor 1 is neutral as no stay has been requested

As Petitioner acknowledges, no stay has been requested in the parallel litigation, and there is no indication that the court would grant such a request in the event this proceeding were instituted. Pet., 5. Factor one, therefore, is neutral. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 12 (P.T.A.B. May 13, 2020) (“*Fintiv II*”) (in similar circumstances finding that “[t]his factor does not weigh for or against discretionary denial”).

B. Factor 2 strongly favors denial because trial will begin nearly eight months before the FWD deadline

Factor two weighs heavily in favor of discretionary denial. The projected statutory deadline for issuing a Final Written Decision (FWD) in this IPR is May 19, 2026. Jury selection in the parallel litigation is scheduled to begin September 22, 2025, which is nearly eight months before the projected FWD deadline.

EX2002 1. The *Fintiv* Memo also authorizes panels to “consider the median time from filing to disposition of the civil trial for the district in which the parallel litigation resides” as reported on the uscourts.gov website. *Fintiv* Memo, 3 n.4.

According to the latest report (September 2024) on the uscourts.gov website, the median time-to-trial for civil actions in the Eastern District of Texas is 21.9 months. The complaint in the parallel litigation was filed February 21, 2024. Applying the median time-to-trial, the estimated trial date would be in mid-December 2025 (about December 18, 2025), which is more than five months before the projected FWD deadline.

Additionally, citing a Lex Machina report,^{5,6} Petitioner alleges that “the Eastern District of Texas’ median time-to-trial for patent cases is 727 days, which would result in a trial date of February 17, 2026.” Pet., 21 (*citing* EX1015). Even applying this date, which is most favorable to Petitioner, the trial in the parallel litigation would begin more than three months before the projected FWD deadline. The table below summarizes the various projections and demonstrates that, regardless of the source of the projection, the Board should reach a final decision

⁵ The *Fintiv* memo authorized the Board to consider the median time-to-trial statistics that are published by US Courts, not by Lex Machina.

⁶ The Exhibit List in the Petition mistakenly identifies the report as being from Docket Navigator.

in this IPR between about three to eight months **after** jury trial in the parallel litigation:

Eastern District of Texas	Projected Trial Date	Months Before FWD
Current Case Schedule	September 22, 2025	Nearly eight
US Courts (Civil)	Mid-December 2025	More than five
Lex Machina (Patents)	February 17, 2026	More than three

Petitioner identifies that Charter has filed a “motion to transfer the co-pending litigation to the District of Colorado,” and the motion is pending. Pet., 21. Petitioner alleges that, if transferred, the expected trial date would be March 22, 2027. *Id.* Like a motion for stay, a judge determines whether to grant a motion to transfer “based on the facts of each specific case as presented in the briefs by the parties.” *See Fintiv II* at 12. The Board should not speculate on how a court will rule on a pending motion to transfer. *See id.* Under the current facts, trial in EDTX is scheduled to begin nearly eight months before the FWD deadline, and thus Factor two weighs heavily in favor of denying institution.

C. Factor 3 favors denial because the parties and the district court already have and will continue to make significant investment in the parallel litigation

Factor three weighs in favor of denying institution. Here, the Board “consider[s] 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*,

9 (emphasis added). The deadline for issuing a Decision on Institution (DI) in this IPR is May 19, 2025. The parties have already exchanged invalidity and infringement contentions and are engaged in fact discovery. By the May 19, 2025 DI deadline, the court will have conducted a Claim Construction Hearing (on March 19, 2025), and the parties will have completed fact discovery (by April 15, 2025) and be engaged in expert discovery. EX2002, 4-7.

Petitioner’s arguments that factor three favors institution are not persuasive because they consider the state of the parallel litigation at the time the Petition was filed, not at the time of the DI. *See* Pet., 21 (arguing that the case “is in its early stages” without considering the then-current case schedule (Dkt. 20 issued July 22, 2024), which Petitioner filed as Exhibit 1014⁷). Nor was Petitioner diligent in filing the Petition, as it alleges. *See* Pet., 22. Petitioner makes no mention of the fact that it waited over eight months after the district court complaint in the parallel litigation was filed to file the instant Petition. *Cf. Fintiv* at 11 (“If the evidence shows that the petitioner filed the petition expeditiously, such as promptly after

⁷ The current schedule, issued October 4, 2024, and filed as Exhibit 2002, shows that only minor updates have been made to the schedule since the July 22, 2024 schedule (EX1014).

becoming aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution under *NHK.*”).

While the Petition challenges all 20 claims of the ’108 patent, there are only seven unique claims.⁸ Taking more than eight months to challenge a single independent claim and six dependent claims is not diligent. This is even more true considering the fact that Petitioner’s Ground 1 relies (improperly) on Patent Owner’s own application having the same specification as the ’108 patent, and Ground 2 merely rehashes the primary reference applied by the Examiner during prosecution. Petitioner does not provide any explanation for its delay in filing the Petition.

Because the parties and the court will have expended significant resources by the May 19, 2025 DI deadline and because Petitioner was not diligent in filing the Petition, factor three weighs in favor of denying institution.

D. Factor 4 strongly favors denial because there is complete overlap between the issues that will be tried in the different tribunals

Factor four weighs in favor of denying institution. “Fintiv factor four looks at the overlap between the issues raised in the IPR petition and in the parallel proceeding in order to evaluate ‘concerns of inefficiency and the possibility of

⁸ Claims 8-14 mirror claims 1-7, and claims 15-20 mirror claims 1-6, respectively.

conflicting decisions.” *Fintiv* Memo, 7; *Fintiv*, 12. Here, there is complete overlap between the invalidity issues: the Petition challenges the validity of claims 1-20 of the ’108 patent based on (i) Chow-669 and (ii) Werner and Wiley (Pet., 3); and in the parallel litigation, Petitioner challenges the validity of claims 1-20 using the same three references. EX2003, 4, 27-29, 86-99.

Petitioner’s stipulation—to “not pursue the invalidity references relied on in the Grounds of this Petition in the litigation” (*see* Pet., 22-23)—is not a *Sotera* stipulation and does not allay the concerns undergirding factor four. In fact, Petitioner’s stipulation is essentially meaningless. It includes only three patents, one of which (Chow-669) is part of the priority chain, another (Werner) was already applied during prosecution, and two of which have at least one counterpart or related patent/publication that is not included in the stipulation. Chow-669 is a grandparent to the ’108 patent, and also a continuation of an earlier-filed application that was similarly published (as U.S. Patent Application Publication No. 2014/0321298) more than a year before the filing date of the ’108 patent. *See* EX2004. Wiley is related to at least one other application that was similarly published (as U.S. Patent Application Publication No. 2008/0095049) prior to the earliest possible priority date of the ’108 patent. *See* EX2005. But even if Petitioner stipulated not to use these related references, that still does not prevent Petitioner from using other references that have cumulative teachings, which

Petitioner has already shown a propensity for doing as explained in Section VII below.

Accordingly, because there is complete overlap in validity issues and Petitioner's stipulation does nothing to reduce this overlap, factor four weighs in favor of denying institution.

E. Factor 5 strongly favors denial because the parties involved in this IPR and the district court proceeding overlap

Factor five weighs in favor of denying institution because, as Petitioner acknowledges, "Charter is the defendant in the ASSIA Litigation." Pet., 7; *Fintiv II*, 15 ("Because the petitioner and the defendant in the parallel proceeding are the same party, this factor weighs in favor of discretionary denial."). While additional Petitioner, Plume, is not a party in the ASSIA litigation, they are nonetheless involved that litigation. Indeed, Patent Owner has served third party subpoenas on Plume for information highly relevant to infringement, and Plume is obligated to indemnify Charter against the infringement accused in the parallel litigation. Moreover, inclusion of Plume as a party to the instant Petition does nothing to mitigate concerns relating to Charter being involved in both proceedings.

F. Factor 6 strongly favors denial because the Petition fails to demonstrate that one or more of the claims are unpatentable

The *Fintiv* Memo explains that "[c]ompelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would plainly lead to a

conclusion that one or more claims are unpatentable by a preponderance of the evidence.” *Fintiv* Memo, 4. As explained herein, the Petition fails to establish that the applied references are unpatentable at least because: (i) the lone reference applied in Ground 1 does not qualify as prior art (*see* Section II); (ii) Ground 2 is cumulative of the art and arguments presented by the Examiner during prosecution (*see* Section IV); and (iii) the combination of Werner and Wiley, as set forth in Ground 2, fails to teach or suggest multiple limitations of the challenged claims (*see* Section IX) Therefore, factor six favors denying institution. *Fintiv*, 15.

* * *

At bottom, five of the *Fintiv* factors either favor or strongly favor denial, and the sixth is neutral. As such, the Board should exercise its discretion to deny the Petition in view of the parallel litigation.

IV. The ’108 Patent Technology

In addition to the fatal deficiency in Ground 1 and Petitioner’s missteps under *Fintiv* outlined above, Ground 2 is also deficient for numerous reasons, each of which also warrant denial of the Petition. But before Patent Owner addresses the deficiencies for Ground 2, a brief discussion of the ’108 patent, its unique innovations, and the benefits provided by those innovations is in order.

A. Background that led to the '108 patent

Generally, at the time of the priority date of the invention, WANs were controlled, managed, and maintained by service providers, such as Internet Service Providers, while LANs were comparably owned and operated by end users. *See* EX1001, 2:3-8. Service providers traditionally refrained from rectifying LAN performance issues, even in instances when such performance issues stemmed from the configurations and settings of the WAN. *Id.*, 2:8-10. Some service providers would also “not have access to all management functionalities (such as monitoring, provisioning, control) to which the owner or the wholesaler of the WAN system may have access.” *Id.*, 2:15-19. This separation between LAN and WAN maintenance and optimization could not remedy inter-network performance issues spanning across different and independent communication layers. *Id.*, 17:33-35.

The inability to jointly analyze and optimize LAN and WAN network communications was quite pervasive across network fabrics. *See id.*, 17:32-35 (indicating that jointly performing such operations were “not otherwise feasible.”). Indeed, it is a side-effect of the foundational architecture of communication networks. A service provider controlling a WAN and an end-user controlling a LAN did not have inter-network operational visibility for a variety of practical reasons. For example, the distinct control mechanisms and control channels

between the two network types may be used to prevent the unauthorized access of private information by third-party network owners or bad actors. *See, e.g., id.*, 2:20-24, 17:25-31. Additionally, these control mechanisms also mitigate errors occurring in one network segment from identically propagating into another network segment. *See id.*, 19:61-20:13 (describing an example of a control mechanism used for preventing inter-network errors). For these reasons, the only means of collecting and implementing inter-network segment information was through the consent, knowing or unknowing, of the network owner. *See id.*, 2:15-24. This, however, was often complicated and impractical given the scattered landscape of network ownership. *See id.*, 2:3-16.

As a result, the segregation of WAN and LAN analyses prior to the '108 patent made it impossible “to optimize or monitor the performance of the LAN, based on information from the WAN or to optimize or monitor the performance of the WAN, based on information from the LAN.” *Id.*, 17:27-30. Specifically, traditional systems preceding the '108 patent could not collect network information from one or more communication layers on the LAN to identify and alter operational conditions on a **different** one or more communication layers on the WAN. *See, e.g., id.*, 17:65-67. These limitations—despite being rooted in foundational network architectures—hindered the efficiency and effectiveness of both LAN and WAN environments, drastically impairing communications

operations spanning a variety of networks. *See, e.g., id.*, 10:24-29, 17:42-47

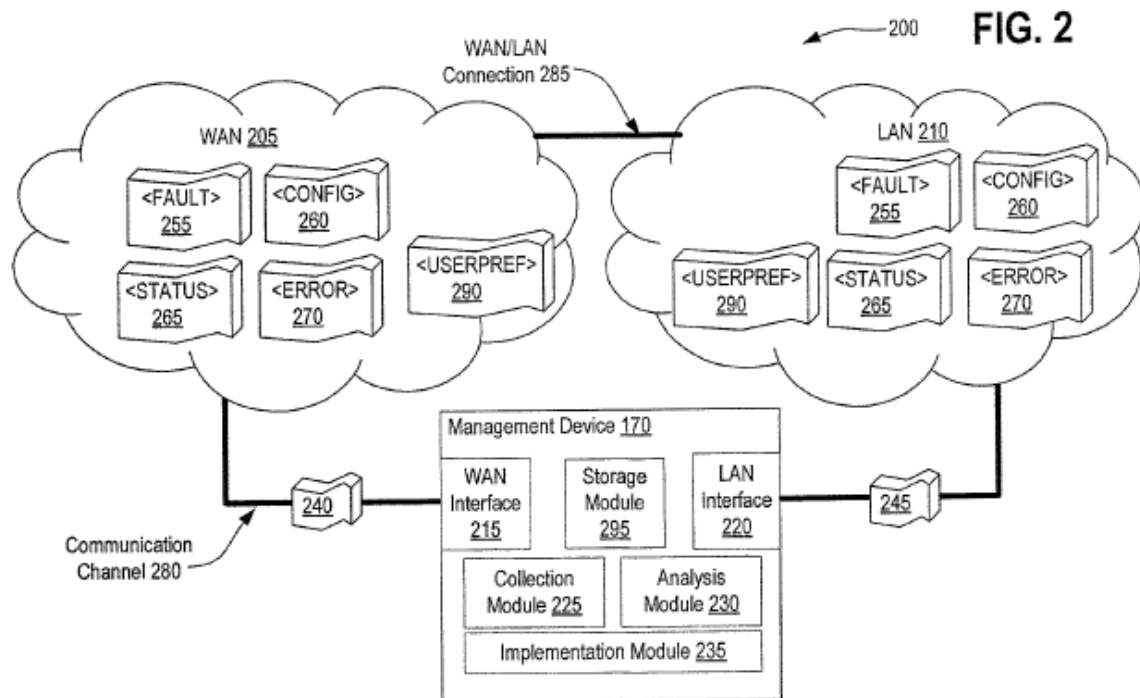
(describing network efficiency and performance issues, respectively, between the LAN and WAN).

B. Innovations of the '108 patent

The '108 patent specification discloses multiple innovations related to jointly optimizing WAN and LAN network communications. *Id.*, 1:39-42. In particular, the claims of the '108 patent are directed to a management device (claims 1-7), a method (claims 8-14), and a non-transitory computer-readable medium (claims 15-20) that collect LAN information from one or more communication layers on the LAN and identify one or more operational conditions within the WAN in a **different** one or more communication layers on which LAN information was collected.

The systems and methods disclosed in the '108 patent address and solve the limitations of prior network monitoring and optimization solutions by “having access and authority to collect information from a WAN connected network and also a LAN connected network [that] is capable of collecting and jointly analyzing information from the WAN and LAN networks to jointly optimize WAN and LAN network communications.” *Id.*, 4:6-10. FIG. 2 of the '108 patent (reproduced below) illustrates the exemplary architecture that “may carry out WAN/LAN optimizations and communicate with various networked devices in the WAN or in

the LAN or both, without serving as an interfacing gateway or as the sole communication link between the LAN and the WAN.” *Id.*, 7:58-62.



EX1001, FIG. 2.

FIG. 2 illustrates that WAN 205 and LAN 210 can be jointly analyzed and optimized by management device 170. *Id.*, 2:49-50. Specifically, WAN 205 and LAN 210 may both be communicatively interfaced with management device 170 fitted with WAN interface 215 and LAN interface 220. *Id.*, 7:63-8:4. Management device 170 and the modules contained therein—such as collection module 225, analysis module 230, implementation module 235, and storage module 295—collect LAN performance information to identify operational conditions within the WAN across different and independent communication layers. *See id.*, 8:21-36.

Importantly, the '108 patent's exemplary architecture improves upon traditional network optimization solutions by reconciling the distinct and separate control mechanisms and control channels among the various communication layers of LAN and WAN. *See, e.g., id.*, 17:25-35. By reconciling these control aspects, the '108 patent describes an exceptional means of utilizing “information from one layer on the WAN 205 . . . to diagnose or improve the performance on a different layer on the LAN 210, or vice versa.” *Id.*, 17:5-7.

For example, management device 170 may collect information via LAN interface 220 “at a networking layer, or TCP/IP layer from the LAN.” *Id.*, 17:35-36. In turn, the collected LAN information—such as packet data rate or packet error rate—can suggest that the TCP/IP layer of the LAN is “experiencing excessive dropped packets or a lower than expected throughput [despite] no known issues with the LAN [being] detected.” *Id.*, 17:39-46. Management device 170, via WAN interface 215, may determine that DSL connection settings at the physical layer of the WAN could be changed by “initiating . . . a management event responsive to the [LAN] analysis.” *Id.*, 17:47-51. In the present example, the management event may reconfigure the physical layer of the WAN by decreasing its corresponding DSL rate to improve link stability and quality. *Id.*, 17:54-55.

As such, the '108 patent describes jointly analyzing and optimizing network communications between the LAN and the WAN, across different communication

layers, in a manner that was previously thought to be impossible given the state of traditional network maintenance and operation solutions. *See, e.g., id.*, 17:25-35.

The '108 patent thereby discloses systems and methods that significantly improved the efficiency and effectiveness of network communications systems as a whole despite the inherent limitations of foundational network architectures.

V. Primary Reference Person of Ordinary Skill in the Art

For purposes of this Preliminary Response, Patent Owner applies Petitioner's level of skill for a person of ordinary skill in the art ("POSA").
Pet., 14.

VI. Claim Construction

For purposes of this Preliminary Response, Patent Owner agrees with Petitioner that the claims should be given their ordinary and customary meanings. *See* Pet., 14-15. Patent Owner reserves the right to contest Petitioner's implicit or explicit constructions during any instituted proceeding.

VII. Ground 2 Is Based on a Primary Reference That Was Previously Applied and Found Deficient During Prosecution

The first of the many deficiencies in Ground 2 is the fact that Ground 2 relies on art and arguments that are cumulative of art and arguments that were expressly considered and overcome during prosecution, and should thus be denied under 35 U.S.C. § 325(d).

The Board has discretion to deny review where “the same or substantially the same prior art or arguments previously were presented to the Office.” 35

U.S.C. § 325(d). Under Section 325(d), the Board uses a two-part framework:

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GMBH, IPR2019-01469, Paper 6, 8 (P.T.A.B. Feb. 13, 2020) (precedential March 24, 2020). The Board explained that the policy undergirding “this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.*, 9.

The Board will consider the *Becton, Dickinson* factors when applying the framework. *Id.* Those factors include:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;

- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which a Petitioner relies on the prior art or a Patent Owner distinguishes the prior art;
- (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8, 17-18 (P.T.A.B. Dec. 15, 2017) (informative).

As demonstrated below, the facts here support denial under 35 U.S.C. § 325(d) at least because Ground 2, which is the only ground in the Petition based on a reference that qualifies as prior art, relies on art and arguments that are cumulative of art and arguments that were expressly considered and overcome during prosecution, and because Petitioner has not identified any material error made by the Office during prosecution.

A. The first prong of the *Advanced Bionics* framework is met

Factors (a), (b), and (d) pertain to the first prong of the framework.

Advanced Bionics, Paper 6 at 10. An analysis of these three factors shows that the primary reference relied upon by Petitioner for Ground 2 (Werner) was before the

Office on at least three separate occasions during prosecution. Indeed, the same Werner reference presented in Ground 2 was cited during prosecution of the '108 patent, as well as during prosecution of parent and grandparent applications to the '108 patent—U.S. Patent Application Nos. 16/432,364 and 15/182,513 (“the '513 application”), respectively.⁹ EX1002, 120-121¹⁰; EX2001, U.S. Patent No.,

⁹ Factors (a), (b), and (d) are not limited to art or arguments presented “during examination” of the challenged patent. *Advanced Bionics*, Paper 6, 10. Rather, “these factors more broadly provide guidance as to whether the art [or arguments] presented in the petition [are] the ‘same or substantially the same’ as the prior art [or arguments] previously presented to the Office during *any* proceeding,” including during examination of a challenged patent’s parent application. *Id.* *Becton, Dickinson*, for example, denied a petition that applied prior art presented to the Office during prosecution of the challenged patent’s parent application. *Becton, Dickinson*, Paper 8, 16-17.

¹⁰ The Examiner appears to list the incorrect publication number (U.S. 2019/0245278) for the Werner reference. Despite this error, the Examiner is referring to the same Werner reference cited in the other '108 patent family

10,757,003, (56); EX1012, (56). Moreover, the same Werner reference was also applied in multiple rejections by the Examiner during prosecution of the '513 application. EX1010, 215-219, 276-280. The following charts illustrate how Werner was substantively applied and/or discussed during prosecution of the '108 patent and the '513 application, and compare each instance to how Petitioner applies Werner in Ground 2 of the Petition.

Prosecution of the '108 Patent vs. Ground 2 ¹¹		
Independent Claim 1 of the '108 Patent	Prosecution of the '108 Patent	Ground 2
[1.0] A management device, comprising:	Werner, FIG. 1 (pointing to device 1400).	Werner, ¶¶[0023]-[0026], [0029] (describing FIG. 1, pointing specifically to information device (ID1400))
[1.1] a Local Area Network (LAN) interface to communicably interface the management device with a LAN;	Werner, ¶¶[0023]-[0024].	Werner, ¶[0024].

members, and the same Werner reference asserted in the Petition (U.S. Patent Application Publication No. 2006/0164978).

¹¹ See EX1002, 120-121, Pet., 47-60.

[1.2] a Wide Area Network (WAN) interface to communicably interface the management device with a WAN, wherein the WAN is to provide broadband connectivity to the LAN;	Werner, ¶¶[0023]-[0024] (pointing to element 1300) for the “<i>Wide Area Network (WAN) interface.</i>” Werner, ¶[0007] for the “<i>broadband connectivity</i>”	Werner, ¶¶[0023]-[0024] (pointing to router 1300) for the “<i>Wide Area Network (WAN) interface.</i>” Werner, Abstract, ¶¶[0001]-[0002], [0007]-[0012], [0016]-[0025], [0036]-[0037] for the “<i>broadband connectivity.</i>”
[1.3] one or more processors; and a non-transitory computer-readable medium or media storing one or more sequences of instructions which, when executed by at least one of the one or more processors, cause the management device to perform operations comprising:	Werner, ¶¶[0068], [0076] (defining “memory” and “processor,” respectively).	Werner, FIG. 2, ¶¶[0007], [0025]-[0028], [0032] (describing “processors” and “memories” within ID1400)
[1.4] collecting LAN information from one or more communication layers on the LAN; and	Werner, ¶[0025].	Werner, ¶¶[0025]-[0026], [0028], [0033], [0034], [0058],

		claim 1 for “collecting LAN information” Wiley, ¶¶[0106], [0266], [0338] for “one or more communication layers.”
[1.5] identifying one or more operational conditions within the WAN in a different communication layer from the one or more communication layers on the LAN by analyzing at least the collected LAN information.	“[Werner] fails to teach or make obvious” this feature.	Werner, ¶¶[0010]-0013], [0021], [0029]- [0035], [0045], [0047]-[0048], claim 1 in view of Wiley, ¶¶[0106], [0271], [0273]- [0278].

Prosecution of the ‘513 Application vs. Ground 2 ¹²		
Independent Claim 1 of ‘513	Prosecution of the ‘513 Application	Corresponding Analysis from Ground 2

¹² See EX1010, 276-277 *see also* 215-16, Pet., 47-60.

[1.0] A management device, comprising:	Werner, FIGs. 1, 2 (device 2000, which can comprise device 1400)	Werner, ¶¶[0023]-[0026], [0029] (describing FIG. 1, pointing specifically to information device (ID1400))
[1.1] a Local Area Network (LAN) interface to communicably interface the management device with a LAN;	Werner, ¶¶[0023], [0032] (pointing to element to interface with LAN 1600).	Werner, ¶[0024] (pointing to element to interface with LAN 1600)
[1.2] a Wide Area Network (WAN) interface to communicably interface the management device with a WAN, wherein the WAN is to provide broadband connectivity to the LAN through a Digital Subscription Line (DSL) connection;	Werner, ¶[0023] (pointing to element to interface with WAN 1700) for the “ <i>Wide Area Network (WAN) interface.</i> ” Werner, ¶[0070] (describing a network interface) for the “ <i>broadband connectivity</i> ”	Werner, ¶¶[0023]-[0024] (pointing to element to interface with WAN 1700) for the “ <i>Wide Area Network (WAN) interface.</i> ” Werner, Abstract, ¶¶[0001]-

		[0002], [0007]- [0012], [0016]- [0025], [0036]- [0037] (describing a network interface for broadband services) for the <i>“broadband connectivity.”</i>
[1.3] a collection logic to collect LAN information from one or more communication layers on the LAN and WAN information from one or more communication layers on the WAN;	Werner, ¶[0025].	Werner, ¶¶[0025]- [0026], [0028], [0033], [0034], [0058], claim 1 for <i>“collecting LAN information”</i> Wiley, ¶¶[0106], [0266], [0338] for <i>“one or more communication layers.”</i>

[1.4] an analysis logic to jointly analyze the collected WAN information and the collected LAN information to identify an operational condition, the operational condition is within the LAN in a different communication layer from the one or more communication layers on the WAN, identified based at least on collected WAN information or within the WAN in a different communication layer from the one or more communication layers on the LAN, identified based at least on collected LAN information.	Communication layers not taught be Werner But Werner taught other aspects such as: “<i>identify an operational condition</i>” (Werner, ¶¶[0026]-[0031]) and “<i>within the WAN ... based at least on collected LAN information</i>” (Werner, ¶[0029]).	Werner, ¶¶[0010]-0013], [0021], [0029]-[0035], [0045], [0047]-[0048], claim 1 in view of Wiley, ¶¶[0106], [0271], [0273]-[0278].
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As illustrated above, not only was the same Werner reference applied and/or discussed multiple times during prosecution, but it was done so in substantially the same manner as in Ground 2 of the Petition.

Petitioner’s choice to use Wiley in combination with Werner in Ground 2 does not change the outcome of the analysis of factors (a), (b), and (d). In fact, the sole functionality in Wiley that Petitioner seeks to implement in Werner’s system is allegedly already present in Werner. Specifically, Petitioner seeks to implement Wiley’s performance information packets (PIP packets) in Werner’s system. *See*

Pet., 46 (“Specifically, it was obvious to use Wiley’s PIPs in Werner’s system to enable Werner’s packet sniffer (analyzer 1406) to analyze network conditions and ascertain useful network performance information”), 55, 59. In explaining Wiley’s PIP packets, Petitioner alleges that “Wiley uses PIPs to collect DPI (namely, network performance information from data packets).” Pet., 55. However, Petitioner also alleges that Werner’s system is already configured to “gather[] data packet information (‘DPI’) from packets traversing within a customer’s LAN or between a LAN and a WAN by analyzing LAN or LAN-WAN traffic.” Pet., 43.

While Petitioner also alleges that Wiley’s PIPs facilitate the collection and analysis of information from different communication layers in a network (*see* Pet., 45-46), Petitioner again alleges that such functionality was already present in Werner. Pet., 7 (“Werner discloses networks that are routinely characterized via reference to communication layers”), 55 (“Werner discloses collecting LAN information from one or more communication layers on the LAN”). Therefore, under Petitioner’s own interpretation of Werner, the addition of Wiley’s PIP packets to Werner’s system does not materially change the scope of the Werner’s system. As a result, the combined system of Werner and Wiley presented in Ground 2 of the petition is also substantially similar to what was already presented to the Office during prosecution.

Finally, in its discussion of factor (d), Petitioner alleges that “there is minimal overlap between the material issues in this Petition and the applicant’s arguments [during prosecution].” Pet., 26. Petitioner’s allegation is entirely unsupported. A simple comparison of the arguments presented in Section IX.B below and the arguments raised in Applicants’ October 10, 2018 Office Action Response during prosecution of the ’513 application illustrates the significant overlap between these arguments—namely that both Werner alone and Werner combined with the cumulative functionality of Wiley fail to disclose the claimed “*identifying one or more operational conditions within the WAN in a different communication layer from the one or more communication layers on the LAN*” for similar reasons. *Compare* EX1010, 321-324 *with* Section IX.B *infra*.

For at least these reasons, the first part of the *Advanced Bionics* framework is met.

B. The second prong of the *Advanced Bionics* framework is also met

“If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office.” *Advanced Bionics*, Paper 6 at 10.

First, with respect to factor (c), it is undisputed that the primary reference in Ground 2 of the Petition was not only cited multiple times during prosecution, but

it also was used as the basis for multiple rejections by the Examiner during prosecution of the '513 application. EX1002, 120-121; EX2001, U.S. Patent No., 10,757,003, (56); EX1012, (56), EX1010, 215-219, 276-280.

Faced with these facts, and in an attempt to meet the high threshold requirement of factor (e), Petitioner alleges that the Examiner somehow erred in its evaluation of Werner during prosecution. Pet., 28-29. Petitioner's allegations are flawed for at least two reasons. First, Petitioner's alleged error—that the “examiner should have realized that the communication layer amendments did nothing more than invoke conventional networking models in a routine and predictable way” (Pet., 29)—is nothing more than a mere statement about Petitioner's disagreement with the Examiner's conclusions. A disagreement with a finding is not an identification of an error.

Second, the prosecution history contradicts Petitioner's allegation and instead illustrates that not only was the Examiner fully aware of conventional networking models and communication layers, but the Examiner specifically searched for prior art using various search strategies that included the following search strings: “OSI or layer;” “layer;” and “different/distinct/separate layer.” EX1002, 145-148, 197-200. The prosecution history therefore evidences that the Examiner appreciated that the claims of the '108 patent (and the '513 application) do not merely require the existence of conventional networking models, or the

mere existence of different communication layers, but instead require that the claimed communication layers be used, monitored, and managed in specific ways. The prosecution history further evidences that when this proper understanding is applied to the claims of the '108 patent (and the '513 application), not only did Werner fail to disclose or render obvious the claims, but the prior art as a whole was similarly deficient.

Petitioner's arguments regarding factor (f) are similarly flawed. As discussed above, the addition of Wiley's PIP packets to Werner does not materially change the scope of Werner's system. Additionally, Dr. Houh's declaration merely parrots the Petition on issues relating to the alleged error in the Examiner's evaluation of Werner, and the application of Werner and Wiley to the challenged claims in the Ground 2. Dr. Houh's declaration also fails to cite any evidence corroborating Dr. Houh's positions on these issues. As such, Dr. Houh's declaration should be given little weight. 37 C.F.R. §42.65(a); *Elbit Sys, LLC v. Thales Visionix, Inc.*, 881 F.3d 1354, 1358 (Fed. Cir. 2018); *Upjohn Co. v. Mova Pharm. Corp.*, 225 F.3d 1306, 1311 (Fed. Cir. 2000) (quoting *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed.Cir.1985)). Therefore, contrary to Petitioner's allegations, neither Wiley nor Dr. Houh's declaration represent additional evidence that would warrant reconsideration of whether Werner's system, or substantially similar systems, discloses the challenged claims.

For at least these reasons, the second part of the *Advanced Bionics* framework is therefore also met.

* * *

In sum, a Petitioner should not be allowed to add a secondary reference that is cumulative of the teachings of a primary reference as a way to avoid §325(d). Accordingly, the Board should exercise its discretion to deny review under §325(d). *Advanced Bionics*, Paper 6, 8-9 (“If a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review.”).

VIII. The Petition Fails to Analyze the *Graham* Factors

In addition to its failure under §325(d), Ground 2 is also deficient for failing to properly analyze the *Graham* factors. The three key factual inquiries set forth in *Graham* for establishing obviousness under 35 U.S.C. § 103(a) are: (1) determining the scope and content of the prior art, (2) ascertaining the differences between the prior art and the claims at issue, and (3) resolving the level of ordinary skill in the pertinent art. *Graham* at 17-18. These factual inquiries must be tied together by “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l Co. v. Teleflex Inc.*, 550

U.S. 398 at 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977 at 988 (Fed. Cir. 2006)).

Here, Petitioner failed to set forth the differences between the art and the claims, as required by the second factual inquiry under *Graham*. The second *Graham* factor necessarily involves an analysis of what the references and claims teach, and *what is missing*, and “requires a comparison of the properly construed claim to the prior art.” *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325 at 1332 (Fed. Cir. 2010). If a proposed ground of invalidity fails to identify the differences between the prior art references and the claimed invention—i.e., identify the missing elements from the references—then such a ground has necessarily failed to establish a *prima facie* case of obviousness, and the petition should be denied. *Id.*; *see also Apple, Inc. v. ContentGuard Holdings, Inc.*, IPR2015-00355, Paper 9 at 9 (P.T.A.B June 26, 2015) (“*Apple*”) (finding no reasonable likelihood of prevailing because “the Petition does not identify sufficiently the differences between the claimed invention and the prior art, or how the prior art teachings are to be modified or combined, if at all.”).

Here, the Petition is inconsistent and ambiguous as to how it is applying Werner against the challenged claims of the ’108 patent. This inconsistency and ambiguity is due to the fact that Petitioner is attempting to advance two seemingly contradictory positions in the Petition. On the one hand, Petitioner argues that

“Werner does not explain how conventional communication layers relate to [its] disclosures [of conventional computer network features].” Pet., 44. But on the other hand, Petitioner appears to take the contradictory position that Werner discloses or renders obvious all limitations of claim 1 of the ’108 patent, including the features reciting “*communication layers*,” and that the Examiner erred in finding otherwise during prosecution. *See* Section VII *supra*; Pet., 7 (“The examiner’s Werner analysis was at best incomplete, as Werner discloses networks that are routinely characterized via reference to communication layers”), 55 (“Werner discloses collecting LAN information from one or more communication layers on the LAN”), 59-60 (“Werner also already discloses a system that collects LAN information and analyzes it to identify operational conditions in a WAN, which would encompass Wiley’s narrower teaching that information may be collected from one layer ... and used to determine that a problem exists at a different layer ...”).

These contradictory positions leave Patent Owner, and the Board, having to make guesses about Petitioner’s challenge and to fill the gaps in Petitioner’s analysis. Does Petitioner believe that the Examiner erred during prosecution when finding that Werner was deficient, as Petitioner alleges in its § 325(d) arguments? *See* Pet., 26-30. Or does Petitioner believe that Werner is in fact deficient with respect to the claimed “*communication layers*,” as Petitioner alleges is the case

when attempting to establish a motivation to combine Wiley with Werner? *See* Pet., 43-47. Such inconsistency and ambiguity does not sufficiently identify what element is supposedly missing from Werner under a 35 U.S.C. § 103 analysis. *See Apple* at 11 (finding the petitioner’s obviousness arguments unpersuasive where “Petitioner leaves it to the Board to ascertain what gaps to fill, and then presents vague statements regarding what the prior art suggests”); *Ariosa Diagnostics v. Verinata Health, Inc.*, IPR2013-00276, Paper 43, pp. 16-17 (P.T.A.B. Oct. 23, 2014), citing *DeSilva*, 181 F.3d 865 at 866-67 (“A brief must make all arguments accessible to the judges, rather than ask them to play archeologist with the record”).

Therefore, the Board should deny institution of the Petition for failing to sufficiently set forth the differences between the art and the claims, as required by the second factual inquiry under *Graham*. *Enzo Biochem*, 599 F.3d 1325 at 1332; *Apple*, IPR2015-00355, Paper 9 at 9.

IX. The Combination of Werner and Wiley in Ground 2 Fails to Disclose All of the Features of the Challenged Claims

The Board should also not institute trial on Ground 2, which is the only ground in the Petition based on a reference that qualifies as prior art, because Petitioner did not establish a reasonable likelihood that the combination of Werner and Wiley renders the challenged claims obvious. As discussed in greater detail below, Petitioner’s Ground 2 fails for at least the following reasons:

1. The combination of Werner and Wiley fails to disclose, or render obvious, “[a] management device, comprising: a Local Area Network (LAN) interface” and “a Wide Area Network (WAN) interface,” as recited in independent claim 1 (and similarly recited in independent claims 8 and 15); and
2. The combination of Werner and Wiley fails to disclose, or render obvious, “identifying one or more operational conditions within the WAN in a different communication layer from the one or more communication layers on the LAN by analyzing at least the collected LAN information,” as also recited in independent claim 1 (and similarly recited in independent claims 8 and 15).

Both of these bases for denial of institution are discussed in more detail below.

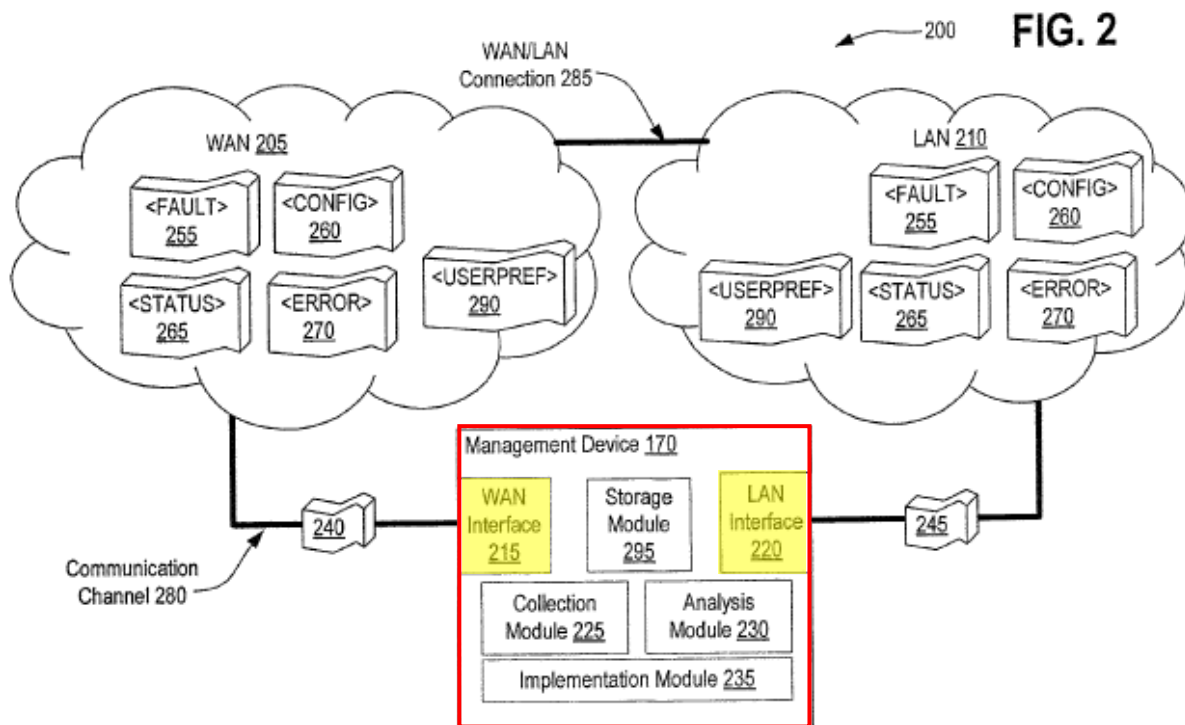
A. The combination of Werner and Wiley fails to disclose, or render obvious, “[a] management device, comprising: a Local Area Network (LAN) interface” and “a Wide Area Network (WAN) interface,” as recited in independent claim 1

Petitioner fails to show that the applied references disclose, or render obvious, “[a] management device, comprising: a Local Area Network (LAN) interface” and “a Wide Area Network (WAN) interface,” as recited in independent claim 1. The Petition solely relies on Werner to allegedly disclose these claim features. *See* Pet., 47-51. However, Petitioner’s arguments relating to these claim features fail for at least one distinct reason: Werner’s “LAN interface” and “WAN interface”—both allegedly disclosed by Werner’s router 1300—are not **comprised within** the alleged “management device.”

As an initial matter, independent claim 1 is clear on its face that the “*management device*” must “***compris[er]***” both the “*LAN interface*” and the “*WAN interface*.” Since there is no ambiguity in the claim as to the required relationship between these elements, the claim itself should dictate the proper interpretation of these elements. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“we look to the words of the claims themselves . . . to define the scope of the patented invention”). Additionally, a review of the specification of the ’108 patent not only confirms the plain language of independent claim 1, but it also clarifies that the claimed “*management device*” **comprises** the “*LAN interface*” and the “*WAN interface*.”

Consistent with independent claim 1, the specification of the ’108 patent discloses that “management device 170 **includes** a Wide Area Network (WAN) interface 215 to communicably interface the management device 170 with the WAN 205 and a Local Area Network (LAN) interface 220 to communicably interface the management device 170 with the LAN 210.” EX1001, 7:63-8:1. The specification also confirms that these interfaces are specific to the management device: “one of the above protocol transfer mechanisms is utilized to transfer instructions from the management device 170 over **a LAN interface of the management device** to LAN based devices, utilized to transfer instructions from the management device 170 over **a WAN interface of the management device** to

WAN based devices ...” See EX1001, 14:11-19. The relationship between the “*management device*,” the “*LAN interface*,” and the “*WAN interface*” is also shown in annotated Figure 2 below. As illustrated below, both the “*LAN interface*” and the “*WAN interface*” (both highlighted in yellow) are comprised within the “*management device*” (highlighted in red).



EX1001, FIG. 2 (annotated).

Turning now to Petitioner’s application of Werner to independent claim 1, Petitioner first alleges that the claimed “*management device*” is disclosed by Werner’s information device (ID1400). Pet., 47-48. Petitioner then alleges that the claimed “*LAN interface*” and “*WAN interface*” are both disclosed by Werner’s router 1300. Pet., 49-50. However, as shown in annotated Figure 1 of Werner

below, router 1300 is separate and distinct from ID1400.

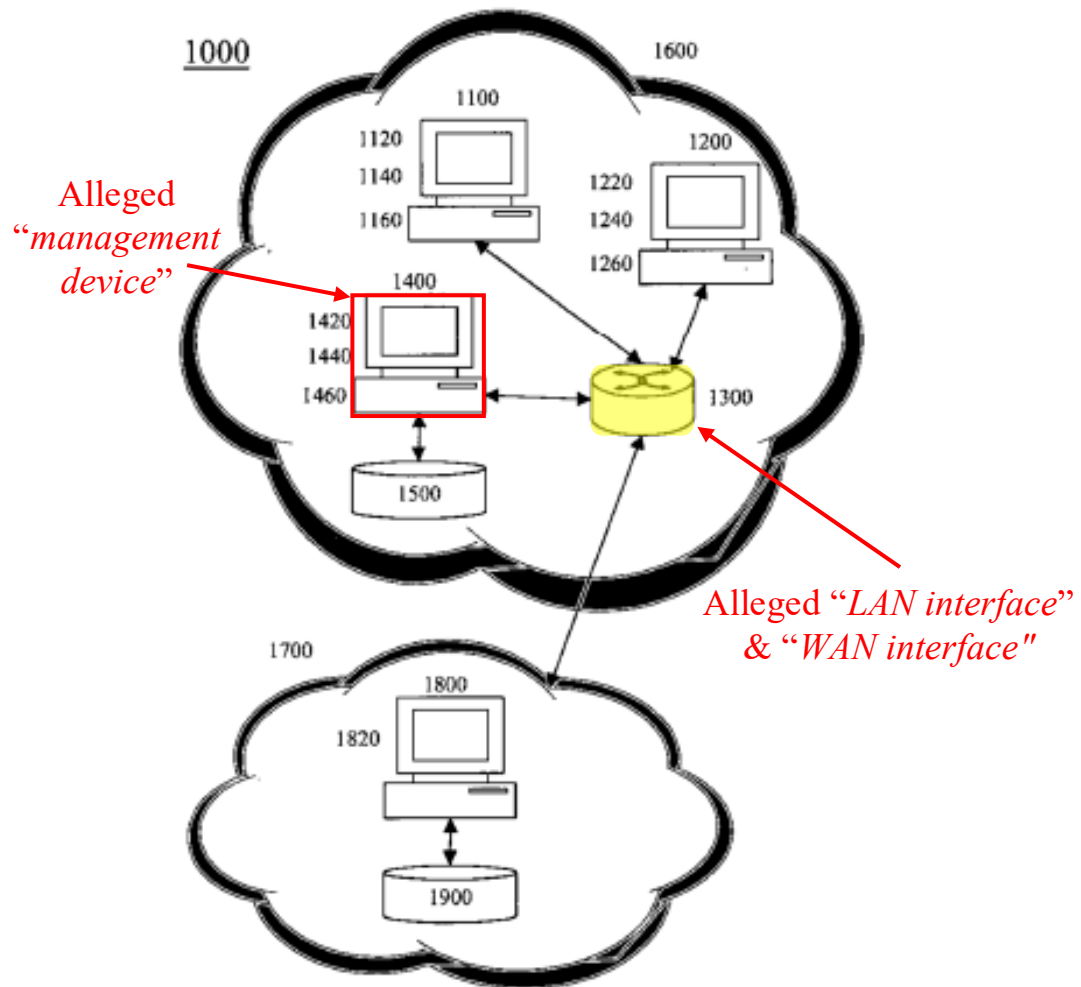


Fig. 1

EX1005 FIG. 5 (annotated).

The specification of the '108 patent in fact distinguishes systems where the LAN interface and WAN interface are included in a router that is remote from the management device—such as the case in Werner. Indeed, the specification of the '108 patent consistently distinguishes management device 170, WAN interface

215, and LAN interface 220 from other networks components, such as standalone router 335 and “WAN/LAN interfaces” (e.g., WAN to LAN gateway 330 and a WAN/LAN bridge). *Compare* EX1001, 7:63-8:1 *with* 12:14-54, 14:1-32, 23:38-46. While the ’108 patent specification discloses that in some embodiments the management device can be implemented within a router, the fact remains that the management device need not be so implemented. *See, e.g.*, EX1001, 12:35-39 (“In one embodiment, management device 170 is implemented separately from a router 335, gateway device 330, computing device 370, DSL/CPE modem device 305, and cable modem 315, for example, management device 170 may operate as a standalone unit.”). And when the management device is not implemented within a router—as is the case in Werner—the LAN interface and WAN interface must remain comprised within the management device. Werner fails to disclose this required configuration, because Werner’s router (allegedly disclosing both the claimed “*LAN interface*” and “*WAN interface*”) is undisputedly separate and distinct from Werner’s ID1400 (the alleged “*management device*”).

Therefore, the combination of Werner and Wiley (which is not relied on in the Petition to disclose these claim features) does not disclose, or render obvious, “[a] management device, comprising: a Local Area Network (LAN) interface” and “a Wide Area Network (WAN) interface,” as recited in independent claim 1. For at least these reasons, independent claim 1 is patentable over the combination of

Werner and Wiley. Dependent claims 2-7 are likewise patentable at least for their dependencies from independent claim 1.

1. The identified deficiencies should also apply to independent claims 8 and 15

The above deficiencies, although discussed with respect to independent claim 1, should apply with equal force to independent claims 8 and 15 of the '108 patent. While independent claims 8 and 15 do not include the same express recitation as in independent claim 1—i.e., “[a] management device, comprising: a Local Area Network (LAN) interface” and “a Wide Area Network (WAN) interface”—the interfacing limitations of independent claims 8 and 15 should still be read consistently with both independent claim 1 and with the specification of the '108 patent. Indeed, as discussed above, the specification of the '108 patent consistently discloses that the management device includes the LAN interface and WAN interface, and that those interfaces are the elements specifically configured to “communicably interface the management device 170 with the WAN 205 and ... communicably interface the management device 170 with the LAN 210,” respectively. EX1001, 7:63-8:1, FIG. 2. This is the precise functionality recited in independent claims 8 and 15.

Independent claims 8 and 15 should therefore be interpreted consistently with independent claim 1 and with the specification of the '108 patent. When doing so, the above deficiencies discussed with respect to independent claim 1

should apply with equal force to independent claims 8 and 15, as well as dependent claims 9-14, and 16-20.¹³

B. The combination of Werner and Wiley fails to disclose, or render obvious, “identifying one or more operational conditions within the WAN in a different communication layer from the one or more communication layers on the LAN by analyzing at least the collected LAN information,” as recited in independent claim 1 (and similarly recited in independent claims 8 and 15)

As discussed above, the Petition presents Werner and Wiley in an extremely similar light. So much so that if Petitioner’s allegations about these references were accepted as true, the relevant teachings of Wiley would be entirely cumulative of those already disclosed in Werner. *See* Section VII *supra*. However, the facts here contradict Petitioner’s narrative about the Werner-Wiley combination. Even if Werner and Wiley were to be combined, the combined system would not function in the manner that Petitioner alleges, and as such would not disclose, or render obvious, “*identifying one or more operational conditions within the WAN in a different communication layer from the one or more communication layers on the*

¹³ Petitioner also seemingly believes that independent claim 1, 8, and 15 should be analyzed together as the Petition does not present any standalone analysis for independent claims 8 and 15, and instead merely refers back to the analysis of independent claim 1. Pet., 69.

LAN by analyzing at least the collected LAN information,” as recited in

independent claim 1 (and similarly recited in independent claims 8 and 15).

Before analyzing what a combined system of Werner and Wiley might have looked like, it is important to understand the principle of operation of each of these references. First, Werner discloses a system specifically designed to “gather, analyze, and/or provide historical information from any past time period (e.g., the past month, the past few seconds, etc.) for network traffic ingressing and/or egressing a customer's LAN from/to a service provider's WAN,” and to “automatically and dynamically change the WAN bandwidth and/or COS subscription profiles provisioned for the customer on-demand and/or in real-time” based on the collected LAN information. EX1005, ¶[0021]. In other words, Werner collects information on one network (e.g., a LAN) to be used to monitor or adjust conditions on a second network (e.g., a WAN). Importantly, Werner carries out this functionality **without any regard for the communication layers that could be used to perform these network functions**. *See* Pet., 44 (admitting that “Werner does not explain how conventional communication layers relate to [its] disclosures”).

Conversely, Wiley discloses a system designed with an entirely different purpose in mind. Wiley discloses a system specifically designed to “receive and store network performance information,” and to subsequently “control network

communications by the network communications devices over the node segments based on the [stored] network performance information.” EX1006, Abstract. In other words, Wiley collects performance information (i.e., “performance information packet[s]” or “PIP packet[s]”) relating to a singular network (i.e., packet network 300), and uses that collected performance information to monitor and control communications **over that same singular network**. EX1006, FIG. 3, ¶¶[0103]-[0104]. While Wiley does disclose that the performance information collection and subsequent monitoring/controlling of network communications can occur on different communication layers, the fact remains that Wiley is clear that the functions only take place on a single network.

This is no trivial matter either. In fact, the inventors of the ’108 patent identified the difficulties in using information from one network to optimize/monitor the performance of another network as a key problem that the ’108 patent sought to solve. EX1001, 17:25-35 (“It is noted that in the absence of the Management device 170, it is not possible to ... optimize or monitor the performance of the WAN, based on information from the LAN. This is because the control mechanisms and control channels on the two networks are distinct and separate. A Management device 170 as described herein addresses such a problem and enables such monitoring and optimizations which are not otherwise feasible.”). Wiley also discloses a similar issue: “[i]t should be understood that different

network types and different connection paths may have different indicia of network performance issues.” EX1006, ¶[0107].

Thus, a POSA at the time would have understood that careful consideration would need to be applied when determining how performance information collected on a first communication layer in a first network would correspond to the performance on a different communication layer in a second network. Such considerations are not addressed in either Wiley or Werner, nor does Petitioner address these considerations. Instead, Patent Owner, and the Board, are left to guess how such considerations would impact the hypothetical combined system of Werner and Wiley, and how the “different indicia of network performance issues” resulting from Werner’s two network system could be addressed. *See* EX1006, ¶[0107].

Despite these fundamental differences between Werner and Wiley, Petitioner alleges that the combined system of Werner and Wiley would function by “collecting network performance information from the Data Link layer in Werner’s LAN, including from PIPs,” and subsequently “would be able to analyze the collected information, determine if there is a condition associated with WAN capacity (e.g., relating to bandwidth or COS levels), and identify ... an operational condition within the WAN in the physical layer.” Pet., 58. However, even if Werner and Wiley were to be combined, the resulting combined system would not

function as Petitioner alleges. At best, the resulting combination would function such that Werner's system would use Wiley's PIP packets—received via a first communication layer (e.g., the Data Link layer)—to collect performance information relating to Werner's LAN. Those PIP packets would then be used by Werner's system to monitor or control conditions of a second communication layer (e.g., the Physical layer) **also with Werner's LAN**. As mentioned above, there is no teaching or suggestion that the combined system would use Wiley's PIP packets to monitor or control conditions on the Physical layer **of Werner's WAN**.

In fact, Wiley suggests the opposite. Wiley discloses that the PIP packets provide performance information that is specific to “a node, node segment, transmission path, or network element” within one particular network (i.e., packet network 300) that the PIP packets actually traverse. EX1006, ¶[0104]. Specifically, when PIP packets are “communicated between the nodes of a network,” the PIP packets “provide a ‘heartbeat’ between network nodes by which the network nodes may use to determine the network performance.” *Id.* Again, there is no teaching or suggestion that these PIP packets could somehow also provide performance information about nodes, node segments, transmission paths, or network elements that are not within the same network in which the PIP packets are collected. Therefore, Wiley is explicit that PIP packets collected within a LAN are only used to monitor/control the LAN (i.e., not a separate WAN). The same holds true if

Wiley's PIP packets were implemented in Werner's system.

Moreover, because Werner is silent on the issue of different communication layers, and because of the “different indicia of network performance issues” that would exist for Werner's LAN vs. its WAN, a POSA would not have used Wiley's PIP packets to monitor or control conditions of a second communication layer (e.g., the Physical layer) **of Werner's WAN**. See EX1006, ¶[0107]. Instead, a POSA would have recognized that if any monitoring/control of Werner's WAN were possible based on Wiley's PIP packets, Werner's system would merely use Wiley's PIP packets to monitor or control conditions of the **same communication layer** (e.g., the Data Link layer) within Werner's WAN in order to avoid the inherent and unaddressed challenge “that different network types and different connection paths may have different indicia of network performance issues.” *Id.*

In sum, because Werner is devoid of any discussion of communication layers and Wiley's techniques are specifically designed for use only with a single network, neither Werner nor Wiley, nor the combination thereof discloses the ability to collect LAN information on a first communication layer and monitor or control conditions **of the WAN on a different communication layer**.

Therefore, the combination of Werner and Wiley does not disclose, or render obvious, “*identifying one or more operational conditions within the WAN in a different communication layer from the one or more communication layers on the*

LAN by analyzing at least the collected LAN information,” as recited in independent claim 1 (and similarly recited in independent claims 8 and 15). For at least these reasons, independent claims 1, 8, and 15 are patentable over the combination of Werner and Wiley. Dependent claims 2-7, 9-14, and 16-20 are likewise patentable at least for their dependencies from the independent claims.

X. Even if Petitioner Fails to Meet Its Burden For Fewer Than All of the Challenged Claims and/or Proposed Grounds, the Board Should Still Deny the Petition

As explained herein, Patent Owner has identified a plethora of deficiencies in Petitioner’s arguments, each of which should prove fatal to the Petition. Nonetheless, should the Board ultimately determine that Petitioner met its burden for some claims, but has failed to meet its burden of establishing unpatentability for fewer than all of the challenged claims of the ’108 patent, the Petition should still be denied in order to conserve the Board’s valuable time and resources. *See e.g., Chevron Oronite Co. v. Infineum USA L.P.*, Case IPR2018-00923, Paper 9 at 10–11 (P.T.A.B. Nov. 7, 2018). The same holds true should the Board ultimately determine that Petitioner met its burden for one, but not both of its proposed invalidity grounds.

Pursuant to 35 U.S.C. § 314(a), 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.” But even when a petitioner demonstrates a reasonable likelihood of prevailing with respect to one or more claims, institution of review remains discretionary. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) (“[Section] 314(a) invests the Director with discretion on the question whether to institute review” (emphasis omitted)); *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.”). 35 U.S.C. § 316(b) also provides that, when determining whether to exercise its discretion, the Board should consider the effect of any regulations on “the efficient administration of the Office [and] the ability of the Office to timely complete proceedings.”

Additionally, 37 C.F.R. § 42.1(b) provides that the Board should also take into account the requirement to construe the rules to “secure the just, speedy, and inexpensive resolution of every proceeding.” Office guidance, published November 20, 2019, also explains that the Board may consider the number of claims and grounds that meet and do not meet the reasonable likelihood standard when deciding whether to institute *inter partes* review under 35 U.S.C. § 314(a). Patent Trial and Appeal Board Consolidated Trial Practice Guide November 2019, p. 64 (Nov. 20, 2019), available at <https://www.uspto.gov/TrialPracticeGuideConsolidated> (“2019 Office Guidance”) (“[T]he panel will evaluate all the challenges and determine whether, in the

interests of efficient administration of the Office and integrity of the patent system, the entire petition should be denied.”).

Here, should the Board determine that Petitioner has failed to meet its burden of establishing unpatentability for some but fewer than all of the challenged claims of the '108 patent (*see, e.g.* Section IX.A), the Petition should still be denied in order to conserve the Board’s valuable time and resources. *See Deeper, UAB. v. Vexilar, Inc.*, IPR2018-01310, Paper 7 at 43 (P.T.A.B. Jan. 24, 2019) (finding that because Petitioner only demonstrated a reasonable likelihood of prevailing with respect to a subset of the 23 challenged claims, “instituting a trial with respect to all twenty-three claims ... would not be an efficient use of the Board’s time and resources”). Similarly, should the Board determine that Petitioner has failed to meet its burden of establishing unpatentability for Ground 1, but has not failed for Ground 2, the Petition should again be denied in order to conserve the Board’s valuable time and resources. *See* 2019 Office Guidance, p. 64. Indeed, it would be wildly inefficient for Patent Owner to have to defend against a fatally-flawed Ground 1 throughout an entire trial simply because Ground 2 may not have been shown to be sufficiently deficient prior to institution. *See* 35 U.S.C. § 316(b); 37 C.F.R. § 42.1(b).

XI. Conclusion

The Board should not institute trial on either of the grounds set forth in the

Petition because Petitioner has not established that the asserted references, either alone or in combination, render obvious the challenged claims of the '108 patent.

Respectfully submitted,

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE**, has 12,218 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24. This word count was prepared using Microsoft Word 2016.

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CERTIFICATION OF SERVICE

The undersigned hereby certifies that the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE**, and Exhibits 2001-2006 were served electronically in their entireties on February 19, 2025, upon the following parties by email:

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