

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CHARTER COMMUNICATIONS, INC.,
Petitioner

v.

ADAPTIVE SPECTRUM AND SIGNAL ALIGNMENT, INC.,
Patent Owner

Case IPR2024-01379
U.S. Patent No. 7,809,996

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

Mail Stop “PATENT BOARD”
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	PETITIONER FAILS TO IDENTIFY WITH PARTICULARITY THE CLAIMED “PERIODICALLY MONITOR FOR TRANSMISSION ERROR VALUES INDICATIVE OF IMPULSE NOISE EVENTS.”	5
III.	THE PLAIN AND ORDINARY MEANING OF “PERIODICALLY MONITOR” IS “MONITOR AT FIXED INTERVALS.”.....	8
IV.	PETITIONER FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD OF PREVAILING ON ANY CHALLENGED CLAIM....	12
A.	Summaries of the Asserted References: Klayman, Agarwal, and Starr	12
B.	Ground 1 fails because Klayman and Starr do not disclose monitoring for channel characteristics <i>periodically</i>	13
1.	Petitioner does not demonstrate that Klayman discloses “periodic” monitoring—Element 20[b2].	13
2.	Petitioner does not demonstrate that Klayman discloses “periodically” monitoring values on the receiver/decoder after training and initialization on the receiver decoder—Element 20[c].	17
3.	Petitioner does not argue that Starr discloses the periodically monitoring limitations in Ground 1.	18
C.	Ground 2 fails because Agarwal and Starr do not disclose monitoring channel characteristics <i>periodically</i>	19
1.	Petitioner does not demonstrate that Agarwal discloses “periodic” monitoring—Element 20[b2].	19
2.	Petitioner does not demonstrate that Agarwal discloses “periodically” monitoring values on the receiver/decoder after training and initialization on the receiver decoder—Element 20[c].	21
3.	Petitioner does not argue that Starr discloses the “periodically monitoring” limitations in Ground 2.	22
D.	Ground 2 also fails because the Petitioner has not demonstrated that Agarwal discloses the element of “indicative of impulse noise.”	22

1.	The only support presented for the notion that Agarwal discloses impulse noise is unsupported declarant testimony—Element 20[b2].	22
2.	Petitioner does not demonstrate that Starr discloses “indicative of impulse noise.”	25
V.	THE BOARD SHOULD EXERCISE ITS DISCRETION TO DENY INSTITUTION UNDER <i>FINTIV</i>	26
A.	Factor 1 is neutral as no stay has been requested.....	27
B.	Factor 2 strongly favors denial because trial will begin nearly seven months before the FWD deadline.....	27
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.....	29
D.	Factor 4 strongly favors denial because there is complete overlap between the issues that will be tried in the different tribunals.	31
E.	Factor 5 strongly favors denial because the parties involved in this IPR are the same as in the district court proceeding.	32
F.	Factor 6 strongly favors denial because the Petition fails to demonstrate that one or more of the claims are unpatentable.	32
VI.	CONCLUSION	33

PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	Tau Beta Pi, <i>Marconi Prize</i> , at https://www.tbp.org/about/Dist/Marconi.cfm (last accessed Jan. 21, 2025)
2002	IEEE, <i>IEEE Alexander Graham Bell Medal</i> 3 (2025), at https://corporate-awards.ieee.org/wp-content/uploads/bell-rl.pdf (last accessed Jan. 21, 2025)
2003	National Science & Technology Medals Foundation, <i>John Cioffi</i> , at https://nationalmedals.org/laureate/john-cioffi/ (last accessed Jan. 21, 2025)
2004	<i>A Dictionary of Electronics and Electrical Engineering</i> , Oxford University Press (2018)
2005	Periodically, <i>Webster's New World College Dictionary</i> 1085 (5th ed., 2014)
2006	Periodically, <i>Merriam-Webster's Collegiate Dictionary</i> 921 (11th ed. 2003)
2007	Periodically, <i>Oxford English Dictionary</i> (June 2024) ("At regularly recurring or definite intervals."), at https://doi.org/10.1093/OED/3188726927 (last accessed Jan. 21, 2025)
2008	First Amended Docket Control Order [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
2009	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

Exhibit No.	Description
2010	Overview of U.S. Pat. No. 5,699,365 to Klayman <i>et al.</i> accessed January 28, 2025 at: https://worldwide.espacenet.com/publicationDetails/biblio?DB=EPODOC&II=1&ND=3&adjacent=true&locale=en_EP&FT=D&date=19971216&CC=US&NR=5699365A&KC=A
2011	Continuity of U.S. Pat. No. 6,546,509 to Starr, accessed January 28, 2025 at: https://patentcenter.uspto.gov/applications/09884878/continuity?application=

I. INTRODUCTION

U.S. Patent No. 7,809,996 (“the ’996 patent”) claims innovative, non-obvious improvements related to forward error correction (“FEC”) codeword management in communication systems. Specifically, the claimed invention provides for periodically monitoring transmission error values indicative of impulse noise and dynamically controlling system parameters that affect performance in communication systems. In what appears to be a hastily assembled Petition, the Petitioner fails to demonstrate that the prior art discloses at least two key elements of the lone challenged claim, Claim 20. These two elements are “periodically monitored” and “indicative of impulse noise events on the transmission channels.” Petitioner never shows how the references disclose these limitations, instead either making broad, unsupported statements or essentially dismissing elements out-of-hand.

First, none of Petitioner’s prior art references teach or suggest the claimed “periodically monitor[ing].” Petitioner’s asserted references merely disclose performing a monitoring process *occasionally or repeatedly*. Events occurring at variable times in the asserted references might be repeated, but are not periodic as required by the claims.

Second, Petitioner relies on Agarwal, which does not teach or suggest the claimed “impulse noise” limitation. Rather, Petitioner merely assumes Agarwal

discloses impulse noise. Petitioner asserts that the byte error rate discloses impulse noise in Agarwal. This is not supported by any evidence other than a bare declarant's conclusion.

But the Board does not even need to reach the merits because the facts and circumstances here warrant denying institution under Section 314(a). Most notably, trial in the co-pending litigation is scheduled to occur *more than seven months before* a Final Written Decision will issue.

The '996 patent and prosecution history have a compelling story that highlights the innovativeness of claim 20—supporting its non-obviousness. The inventor of the '996 patent, Dr. John M. Cioffi, who is often referred to as the “father of DSL,” is renowned for his transformative contributions to telecommunications, having received numerous prestigious accolades, including the Marconi Prize,¹ the IEEE Alexander Graham Bell Medal,² and most recently

¹ Tau Beta Pi, *Marconi Prize*, at <https://www.tbp.org/about/Dist/Marconi.cfm> (last accessed Jan. 21, 2025) (EX2001).

² IEEE, *IEEE Alexander Graham Bell Medal* 3 (2025), at <https://corporate-awards.ieee.org/wp-content/uploads/bell-rl.pdf> (last accessed Jan. 21, 2025) (“For pioneering discrete multitone modem technology as the foundation of the global DSL industry.”) (EX2002).

was awarded the National Medal of Technology and Innovation by the President recognizing his enduring impact on communications technology³. Dr. Cioffi initially served as a member of the technical staff at Bell Labs and then worked at IBM Research. He then ventured to Stanford University, where he served as a professor for decades, playing a significant role in pioneering advancements in telecommunications and broadband technology beginning in the late 1980s. In 2003, he founded Adaptive Spectrum and Signal Alignment, Inc. (“ASSAI”), the assignee of the ’996 patent, to continue developing and commercializing innovative communications technologies. Those innovations now enhance internet connectivity for over 120 million households worldwide. In short, Dr. Cioffi is a recognized visionary who often looked in directions that others either scoffed at or were not even thinking about to achieve breakthroughs in communications technologies.

³ National Science & Technology Medals Foundation, *John Cioffi*, at <https://nationalmedals.org/laureate/john-cioffi/> (last accessed Jan. 21, 2025) (“For advancements that helped bring high-speed Internet to the world. The digital subscriber line that he helped invent ignited the growth of the digital age, vastly increasing people’s access to information, reshaping the global economy, and transforming how we work, communicate, and find community.”) (EX2003).

Such is the case with the innovations claimed in the '996 patent. For example, use of FEC and periodic monitoring—the focus of claim 20—introduces redundancy into a transmitted signal to allow for error correction at the receiver. At the time of invention, as highlighted in the '996 prosecution history, transmission error values were only determined during initialization and not monitored periodically after initialization, as the claims require. Monitoring transmission errors was a manual process that required engineers to resolve problems after they occurred. Undeterred, Dr. Cioffi discovered that monitoring and adapting to changes in transmission error values periodically following initialization would allow the system to adjust forward error correction parameters to ameliorate the effects of impulse noise events. This allowed a communication transmission system to adaptively adjust, ultimately improving performance.

The contrast between the compelling backstory of the claims and the superficial, conclusory nature of the Petition are illuminating. This contrast brings into full focus the fact that Petitioner failed to meet its burden of demonstrating a reasonable likelihood that the challenged claim will be found unpatentable. For this reason, the Board must deny this Petition. Alternatively, the Board can simply use its discretion under Section 314(a) to deny the Petition.

II. PETITIONER FAILS TO IDENTIFY WITH PARTICULARITY THE CLAIMED “PERIODICALLY MONITOR FOR TRANSMISSION ERROR VALUES INDICATIVE OF IMPULSE NOISE EVENTS.”

Petitioner has the responsibility to “be clear in its Petition with regard to its assertions, so that Patent Owner may respond appropriately, without confusion, and so that the Board can make a proper adjudication.” *Mastercard Intl., Inc., v. Grecia*, IPR2017-00791, Paper 7, 11 (July 5, 2017); *see also Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (finding that petitioner “has the burden from the onset to show with particularity why the patent it challenges is unpatentable.”) (citing 35 U.S.C. § 312(a)(3)). “It is Petitioner’s burden to explain how challenged claims are to be construed and how the claims read on the prior art,” and that explanation must be clearly set out in the Petition. *Maxlite, Inc. v. Jianxing Super Lighting Elec. Appliance Co.*, IPR2020-00181, Paper 9, 3–7 (Sep. 29, 2020) (citing 37 C.F.R. §§ 42.104(b)(3)–(5)) (denying institution because Board was “not persuaded the Petition made clear” its understanding of the claims, patent owner had “relied on th[e] contention[s] [in the Petition] to draft its Preliminary Response,” and petitioner’s “attempts to clarify” the “way Petitioner presented its contentions” after Petition was filed “c[a]me too late”).

The Petition lacks particularity because it effectively reads the word “periodically” out of the claim. It instead by implication asserts that any repeated action meets the “periodically” limitation. This is not so.

The lack of clarity first comes from Petitioner's numbering of the claim

terms. Petitioner's chosen enumerated breakdown is below:

- 20[pre] A transmission system comprising:
- 20[a] a transmission channel...;
- 20[b] **a transmission error value monitor**
communicatively interfaced with the receiver/decoder
to periodically monitor for transmission error values
indicative of impulse noise events on the transmission
channel,
- 20[c] wherein the transmission error values are periodically
monitored after training and initialization on the
receiver/decoder,
- 20[d] the transmission error values being selected from a
group comprising...
- 20[e] and wherein the transmission error value monitor to
further generate an input signal based on the
transmission error values monitored; and
- 20[f] a controller... to further generate a retransmission
overhead control signal....

Element 20[b] of the Petition combines its “transmission error value monitor” limitation with the separate “to periodically monitor” limitation. A claim breakdown congruent with the proper claim construction of the “periodically” limitation would be:

- 20[b1] **a transmission error value monitor**
communicatively interfaced with the receiver/decoder
- 20[b2] **to periodically monitor** for transmission error values
indicative of impulse noise events on the transmission
channel,

Petitioner is fatally vague about how it contends the “periodically” limitation should be construed. It provides nearly no information or analysis other than repeating verbatim the claim limitation. Petitioner uses the word “periodically” ten times in the Petition’s 88 pages, usually in a verbatim recitation of the claim terms, Pet., 21, 31, 34, 57, 64; or an unsupported declarant’s conclusion, Pet., 32, 34, 66.

The Petition only touches on what “periodically” might mean in two places.

First, Petitioner argues that Klayman meets the periodically limitation because the process is “repeated... over time.” Pet., 25. It then argues based on this and without explanation, a person of ordinary skill “would have understood that transmission error values are periodically monitored in Klayman’s system.” Pet., 32.

Second, Petitioner argues that Agarwal’s disclosure of methods that are “performed at a predetermined interval” discloses the periodic limitation. Pet., 59. This might be superficially appealing if it were true. But Agarwal says no such thing. Rather, Agarwal says it is “performed at a predetermined interval *based on said byte error rate*,” EX1004, claim 2 (emphasis added); and thus performed on an event basis not a periodic basis. In short, nothing is performed periodically, as the claims require.

As explained below, the periodically limitation requires more. And Petitioner fails because of this. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378–79 (Fed. Cir. 2015).

III. THE PLAIN AND ORDINARY MEANING OF “PERIODICALLY MONITOR” IS “MONITOR AT FIXED INTERVALS.”

Periodically monitor means monitor at fixed intervals. This is the only possible interpretation according to the plain and ordinary meaning of the word “periodically.”

The PTAB should accord claims their plain and ordinary meaning. United States Patent & Trademark Office, *Changes to the Claim Construction Standard*, 83 Fed. Reg. 51,430, at 51,431 (Oct. 11, 2018); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). The word “periodically” is used only once in the ’996 patent specification and refers to a fixed interval. EX1001, 13:21–22 (discussing systems that “periodically” acquire the number of CRC values at “15 minute intervals.”). Other relevant uses of the word “period” are used to describe a “fixed period of time.” EX1001, 4:56–64; *accord* 5:61, 9:38, 13:32, cl. 2, cl. 16; *see also* EX1001, 11:18 (discussing “given period of time”); 12:51 (discussing a “given time period”); 17:20–22 (“Alternatively, means 642 can generate the input signal 643 in a sampled or periodic fashion, on a random or non-random basis.”). This

makes it clear that periodic events occur at fixed intervals.⁴ And it supports the plain and ordinary meaning of “periodically”: at fixed intervals.

The dictionary also supports this construction of “periodically.” The definition of “periodically” is at fixed intervals. *See* Period, *Oxford Dictionary of Electronics & Electrical Engineering* (5th ed. 2018) (“The time required to complete a single cycle of regularly recurring events.”) (EX2004); Periodic, *Oxford Dictionary of Electronics & Electrical Engineering* (5th ed. 2018) (“Denoting any variable quantity that has regularly recurring values with respect to equal increments of some independent variable, such as time. The interval between two successive repetitions is the period.”) (EX2004); Periodic Signal, *Oxford Dictionary of Electronics & Electrical Engineering* (5th ed. 2018) (“A signal that repeats itself at regular intervals; a periodic waveform.”) (EX2004).

Moreover, the doctrine of claim differentiation supports this meaning. The ’996 patent uses the word “repeatedly” in its claims when referring to acquiring error information. EX1001 cl. 1 (“a means, coupled with the DSL modem, for repeatedly acquiring...”); *accord* cl. 10, 11, 12, 13, 17, 18. Under the doctrine of

⁴ The patent does use the word “period” other times, but in other contexts. *See* EX1001, 8:1–6 (discussing “DMT symbol period”), 11:21 (discussing a brief period of interference), 12:11 (discussing a “long period” of interference),

claim differentiation, “when... applicant[s] use[] different terms in a claim it is permissible to infer that [they] intended [their] choice of different terms to reflect a differentiation in the meaning of those terms.” *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004). The ’996 Patent uses “periodically” in claim 20. This is different from the other claims, which use “repeatedly.” The ’996 patent manifestly intends to express different meanings with each of these two terms.

Furthermore, there is a difference between the colloquial, or lay, use of the word periodic and the understanding of those skilled in the art here. It is true that a non-technical speaker or writer might conflate the words “periodically” and “repeatedly.” *See O2 Micro Int’l Ltd. v. Beyond Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) (“In some cases, the ordinary meaning of claim language... may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. However, in many cases, the meaning of a claim term as understood by persons of skill in the art is not readily apparent.” (alterations in original)). But the language of the specification and claims, and the only technical dictionary in evidence, make clear that the *technical* distinction is well known and that “periodically” here means “at fixed intervals.”

This is well-trodden ground, as the Federal Circuit has endorsed a similar electronics-related claim construction that “periodically” meant “at regular intervals of time.” *Apple Inc. v. Andrea Elecs. Corp.*, IPR2017-00627, Paper 23 at 6–8 (PTAB July 12, 2018), *aff’d in relevant part*, 949 F.3d 697, 707 (Fed. Cir. 2020); *see also* Periodically, *Webster’s New World College Dictionary* 1085 (5th ed., 2014) (EX2005, 1085); Periodically, *Merriam-Webster’s Collegiate Dictionary* 921 (11th ed. 2003) (“at regular intervals of time”) (EX2006, 921); Periodically, *Oxford English Dictionary* (June 2024) (“At regularly recurring or definite intervals.”), *at* <https://doi.org/10.1093/OED/3188726927> (last accessed January 3, 2025) (EX2007).

This is an important limitation. The reason for monitoring periodically is to identify changes in the noise levels that are not expected. By continuing to monitor on fixed intervals, the system will be able to identify noise scenarios and be able to proactively present communication failures. This is a stark contrast to “repeatedly” monitoring, which will only capture the latest noise event. Periodic monitoring further differs from event driven or reactionary monitoring, which only seeks to obtain information about a recent noise event. So the plain and ordinary meaning of periodically is at fixed intervals of time.

**IV. PETITIONER FAILS TO DEMONSTRATE A REASONABLE
LIKELIHOOD OF PREVAILING ON ANY CHALLENGED CLAIM.**

While Petitioner’s art discloses forward error correction schemes, the claims require more. Specifically, the challenged claim requires that the forward error correction scheme *periodically* monitors the transmission channel for errors. The periodic monitoring allows for adaptive adjustment to FEC parameters, or other adjustments to overhead within the transmissions, to optimize transmission in response to varying noise environments—such adaptive adjustments are not consistent with merely intermittent or repeated monitoring.

A. Summaries of the Asserted References: Klayman, Agarwal, and Starr

Klayman, U.S. Patent No. 5,699,365 to Klayman et al., discusses a forward error correction scheme used in a hybrid fiber coax system called a CableComm™ system. EX1003, 1:18–25. While Klayman teaches that transmission conditions should be monitored, it does so only in the context of repeating *as conditions may vary*. EX1003, 8:42–44 (“As this process may be both repeated for each connected (or active) secondary station 110_a through 110_n, and repeated over time (as conditions may vary)....”); *see also* EX1003, 10:20–26 (“As mentioned above with regard to FIG. 4, this process may be repeated for each secondary device and over time (as conditions may vary), and it is also anticipated that different revised forward error correction parameters....”).

Agarwal, U.S. Patent No. 6,477,669 to Agarwal et al., discusses a forward error correction mechanism for asynchronous transfer mode (ATM) systems. EX1004, 12–25. Agarwal’s system is designed for a noisy channel such as that occurring over satellite links. Importantly, as with Klayman, Agarwal’s system does not monitor the transmission channel on a predictable, periodic schedule. Agarwal’s own claims say this, as does the specification. EX1004, cl. 2; *see also* EX1004, 8:56–58 (“Next, the primary interface performs the following computations at a *variable interval* of, for example, one second.” (discussing computing the byte error rate, emphasis added)). Additionally, Agarwal does not even mention the concept of impulse noise.

Starr, U.S. Patent No. 6,546,509 to Starr, discloses a controller for a data interleaver. The disclosure, in relevant part, discusses monitoring a data channel for various characteristics, notably bit error rate. Petitioner does not rely on Starr for any teaching that monitoring should occur “periodically.” Starr does not even mention the concept of impulse noise.

B. Ground 1 fails because Klayman and Starr do not disclose monitoring for channel characteristics *periodically*.

1. Petitioner does not demonstrate that Klayman discloses “periodic” monitoring—Element 20[b2].

Petitioner fails because Klayman does not disclose the claimed “periodic[]” monitoring. Petitioner contends Klayman repeatedly monitors the transmission

channel. But Petitioner never alleges that this is done according to the plain and ordinary meaning of periodically. And Klayman explicitly states that its monitoring is performed according to varying conditions.

Petitioner argues that, in Klayman, “the upstream channels of the communications medium... may be susceptible to interference from typical noise sources.” EX1003, 5:12–16; Pet., 25. Further, Petitioner alleges that Klayman’s forward error correction is “employed on the upstream channels as a way of compensating for data transmission errors which may have been caused by noise or other distortions.” EX1003, 5:16–19; Pet., 25. “Encoded data,” per Petitioner, is used “to detect received errors and to correct detected errors.” EX1003, 5:26–29; Pet., 22–23.

Klayman’s Figure 4 shows the monitoring configuration disclosed:

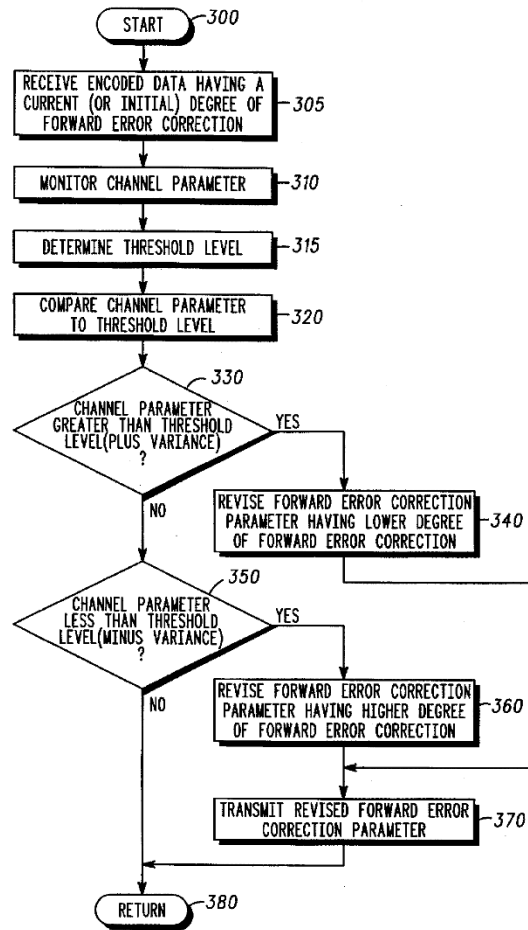


FIG. 4

EX1003, FIG. 4.

According to this disclosure, the encoded data has “an initial degree of” forward error correction. Then Klayman, according to Petitioner, “monitor[s]” in step 310 “packet error rates, bit error rates, noise levels (such as levels of impulse noise of ingress noise), other interferences, or other parameters.” EX1003, 7:37–45. A processor does this monitoring, Petitioner contends, “to monitor a channel parameter of the second communications channel to form a monitored parameter,” which “compare[s] the monitored parameter with a threshold level of the channel

parameter.” EX1003, 11:2–10. Petitioner alleges this comparison yields a revised degree of forward error correction. EX1003, 11:11–13.

Petitioner contends Klayman teaches “this process may be repeated for each secondary device and over time.” EX1003, 10:20–23. But this mischaracterizes Klayman by truncating an important part of its disclosure. Indeed, Petitioner omits the key language when using this passage to support its notion that Klayman’s monitoring takes place repeatedly. The cited portion of Klayman does not state monitoring merely “over time.” Rather, it states that “this process may be repeated for each secondary device and over time (*as conditions may vary*).” *Id.* (emphasis added).

Petitioner does not demonstrate that the monitoring takes place periodically. Rather, Petitioner only argues that it occurs “over time.” Pet., 25. This fails to establish the claimed “periodically” step on its face. But even if the Petitioner were to rewrite the Petition, the actual language of Klayman is explicit that any monitoring takes place *according to varying conditions*. EX1003, 10:20–23; *accord* 8:42–45 (stating that the process of Figure 4 is “repeated over time (as conditions may vary)”).

This is consistent with Klayman’s purpose—reacting to noise and changing forward error correction power as the transmission runs in real time. EX1003, Abstract (stating the apparatus and method “provide[] for dynamically changing

forward error correction parameters based upon communication channel conditions, such as noise levels or error rates”). Thus, Klayman is entirely different from the ’996 patent, which is designed to catch events that occur randomly.

Klayman teaches repeatedly monitoring a channel based on varying conditions. The claim’s plain language requires monitoring “periodically,” which means at fixed intervals. Petitioner has not established a reasonable likelihood that Klayman invalidates claim 20 of the ’996 patent.

2. **Petitioner does not demonstrate that Klayman discloses “periodically” monitoring values on the receiver/decoder after training and initialization on the receiver decoder—Element 20[c].**

As with the monitoring for transmission error values, Petitioner does not establish—or even argue—that the “transmission error values are *periodically* monitored *after training and initialization* on the receiver/decoder.”

Petitioner argues that Klayman establishes forward error correction parameters (on initialization). EX1003, 5:29–36 (“[T]he receiving unit should know, prior to the receipt of actual data, what type of error correcting code is to be employed by the transmitting unit... [t]his may typically be done by prior agreement (e.g., during initial set up or configuration of the communication system), or during negotiation ‘handshake’ during establishment of the communications link.”); Pet., 32.

Further, Petitioner relies on Klayman’s disclosure that “the initial degree of forward error correction may be established during an initial registration process.” EX1003, 7:23–27; Pet., 32. But this is not germane to element 20[c]—which specifically claims periodic monitoring “*after* training and initialization.” Pet., 31.

The only ongoing monitoring Petitioner relies on from Klayman for this element is the “monitor channel parameter 310”—which it also cited for Element 20[b2]. Petitioner exclusively relies on the “monitor channel parameter 310” step of Figure 4 for the sole disclosure of anything occurring “periodically.” Pet., 32–33. However, as previously discussed, Klayman does not disclose that values are monitored periodically, nor does Petitioner provide any such argument. Instead, Klayman merely describes the values being monitored at time intervals that vary “as conditions may vary.” EX1003, 10:20–23; *accord* 8:42–45.

For this reason, Petitioner does not establish that Klayman teaches or suggests claimed element 20[c].

3. Petitioner does not argue that Starr discloses the periodically monitoring limitations in Ground 1.

Petitioner alleges that Starr may be combined with Klayman to show that the “performance parameters are preferably chosen from the group consisting of signal to noise ratio (SNR), bit error rate (BER) and data rate.” Pet., 26. Petitioner does not rely on Starr for the “periodically” limitation. *See Harmonic Inc.*, 815 F.3d at

1363. For this reason, the Starr reference does not cure the Petition’s fatal deficiencies.

C. Ground 2 fails because Agarwal and Starr do not disclose monitoring channel characteristics *periodically*.

1. Petitioner does not demonstrate that Agarwal discloses “periodic” monitoring—Element 20[b2].

Petitioner does not demonstrate that Agarwal discloses the claimed “periodic” monitoring. Similar to Section IV.B.1 above, Petitioner fails by contending that Agarwal merely repeatedly monitors the transmission channel. Petitioner never alleges that this is done according to the plain and ordinary meaning of periodically. And Agarwal explicitly states that its monitoring is performed based on the byte error rate, which is a non-periodic basis.

Petitioner contends that Agarwal teaches using Reed-Solomon codes to improve “inherently nois[y]” wireless and satellite links. EX1004, 2:34–38. Next, Petitioner describes Agarwal’s disclosure of “performing... computations *at a variable interval of, for example, one second.*” EX1004, 8:56–58 (emphasis added). An interval that varies is not periodic. Presumably, the variable interval of Agarwal means an interval whose duration varies. Petitioner goes on to allege that these calculations are “performed at a predetermined interval.” Pet., 59. But, just as Petitioner misquoted Klayman, it selectively misquotes Agarwal. As with the Klayman reference, Petitioner omits key language from Agarwal and misuses this

passage to support its notion that Agarwal's monitoring takes place repeatedly, rather than specifically at variable times. Indeed, Agarwal's full explanation of this behavior is "performed at a predetermined interval *based on said Byte Error Rate.*" EX1004, cl. 2 (emphasis added). This is not a meaningless omission. Indeed, the Agarwal disclosure states that it performs monitoring at variable intervals and its only mention of predetermined intervals are intervals that vary according to bit error rate. EX1004, 8:56–60. Thus, Agarwal relies not on a fixed interval of time for its monitoring step. Rather, Agarwal relies on changing and thus non-periodic monitoring at variable time intervals based on changes in bit error rate.

Agarwal's monitoring takes place not according to a fixed interval, but rather *in response to* interference. When a person of ordinary skill in the art looks at Agarwal, they understand that its monitoring is "based on" the byte error rate. EX1004, cl. 2. In that case, Agarwal will rarely monitor a robust link (with low byte error rate) and more frequently monitor a weak link (with high byte error rate). This is in keeping with Agarwal's purpose of identifying long-term conditions in satellite transmissions. EX1004, Abstract, FIG. 1A. Agarwal emphasizes that its framework is to be "based on" byte error rate. See EX1004, 8:2–4 ("*The measurement of the communication link quality is based on the number of byte errors corrected by a decoder which is included in the interface.*"). Agarwal simply reacts to changes in the communication link. That is radically

different from the claimed invention, which monitors for interference at a fixed interval.

The exemplary interval of one second in Agarwal is not a periodic interval of one second but a variable interval. Agarwal's specification and claims state that the timing of any monitoring will vary based on factors, including the Byte Error Rate. A system that monitors with an initial one-second interval and then changes according to characteristics of the channel is not periodic monitoring.

2. Petitioner does not demonstrate that Agarwal discloses “periodically” monitoring values on the receiver/decoder after training and initialization on the receiver decoder—Element 20[c].

Petitioner does not explain how Agarwal teaches the “periodically” limitation in connection with Element 20[c]. Rather, Petitioner explicitly incorporates its arguments from Element 20[b2] to support periodic monitoring in Agarwal. Pet., 64–65 (“As explained immediately above, Agarwal teaches periodic monitoring of transmission error values at the primary/receiving interface.”). Petitioner provides no other reference to the “periodically” limitation in connection with Element 20[c]. But as discussed above, Agarwal's monitoring takes place over varying intervals. Thus, Petitioner fails to demonstrate how Agarwal discloses Element 20[c] for the same reason it does not disclose element 20[b2].

3. Petitioner does not argue that Starr discloses the “periodically monitoring” limitations in Ground 2.

Petitioner alleges that Starr may be combined with Agarwal to show that the “[m]icroprocessor 1015 coupled to the primary/receiving interface (i.e., receiver/decoder) would also periodically monitor [signal to noise ratio] (i.e., transmission error values) after training and initialization at the primary/receiving interface.” Pet., 66. Petitioner, however, does not rely on Starr for the “periodically” limitation. *See Harmonic Inc*, 815 F.3d at 1363. For this reason, the Starr reference does not cure the Petition’s fatal deficiencies.

D. Ground 2 also fails because the Petitioner has not demonstrated that Agarwal discloses the element of “indicative of impulse noise.”

1. The only support presented for the notion that Agarwal discloses impulse noise is unsupported declarant testimony—Element 20[b2].

Claim 20 recites “to periodically monitor for transmission error values *indicative of impulse noise events* on the transmission channel.” Element 20[b2] (emphasis added). Agarwal does not mention anything about impulse noise. So, unsurprisingly, Petitioner’s only support that Agarwal discloses the impulse noise limitation is a bare declarant’s assertion unsupported by evidence. For this independent reason, the Petitioner has not met its burden to demonstrate that renders claim 20 of the ’996 patent obvious.

Petitioner links two different concepts without any factual support to allege Agarwal discloses this element. First, Petitioner discusses byte error rate. Pet., 60 (“As an example, Agarwal teaches using Reed-Solomon codes and inverse byte error ratio values that include a calculated decibel margin and correspond to the amount of noise on a transmission channel.”). Second, Petitioner talks about the claimed “indicative of impulse noise events” limitation. Pet., 60 (“A POSITA would, therefore, have understood the byte errors and byte error rate are indicative of impulse noise events....”). The Petitioner’s declarant then makes the bare assertion that one discloses the other. Pet., 60 (citing EX1002, ¶207); EX1002, ¶207 (“Thus, a POSITA would have understood that the byte error rates... indicate an impulse noise event on the transmission channel.”). Unsupported expert testimony is entitled to little weight, *Elbit Sys, LLC v. Thales Visionix, Inc.*, 881 F.3d 1354, 1358 (Fed. Cir. 2018); *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (P.T.A.B. Aug. 24, 2022) (precedential) (“[T] the cited declaration testimony is conclusory and unsupported, adds little to the conclusory assertion for which it is offered to support, and is entitled to little weight”); and the testimony here is no exception. There is no support for the Petitioner’s proposition that “byte error rate” discloses “impulse noise.” Pet., 59.

Petitioner’s conclusion is unsupported by facts. Indeed, the entirety of the discussion of impulse noise is the bare declarant’s conclusion: “[a] POSITA

reading Agarwal would also have understood that byte error rate is indicative of impulse noise events on the transmission channel which affect communication link quality.” Pet., 60; *accord* EX1002, ¶207.

Agarwal is silent about impulse noise. The Declaration provides no explanation why a POSITA would have understood Agarwal’s “byte error rate” to be impulse noise. And the Petition adds nothing further.

The ’996 patent, however, discusses *both* impulse noise *and* bit⁵ error rate separately. *Compare* EX1001, 1:37–39 (discussing both “[i]mpulse noise, other noise[,] and other sources of error”) *with* EX1001, 4:55–60 (discussing “bit error rate” being used as the basis for the “transmission error value[.]”). The ’996 patent does not equate bit error rate to impulse noise. It discusses them in separate contexts. And there is nothing in either Agarwal or the Petition that links those two concepts, aside from a bare declarant’s assertion. The ’996 patent teaches a *relationship* between bit error rate and impulse noise, as “bit error rate” is among the values from which the transmission error value is selected. *Id.* However, the transmission error value being “indicative of impulse noise events,” EX1001, cl. 20; does not equate bit error rate to an impulse noise event itself. Bit error rate can

⁵ Bit error ratio is one-eighth of the byte error rate. *E.g.*, EX1004, 8:52–53 (“The bit error ratio is approximately equal to [byte error rate] divided by eight.”).

be present in systems without any impulse noise because it measures transmission errors from all sources, not just impulse noise. Bit error rate is an advantageous instantaneous measure of transmission quality, distinct from other measures like code-violation count and retrain count, which are directly tied to impulse noise.

For these reasons, the Petitioner has not demonstrated that Agarwal discloses the claimed “impulse noise” limitations of Element 20[b2].

2. Petitioner does not demonstrate that Starr discloses “indicative of impulse noise.”

Petitioner argues that signal-to-noise ratio is “indicative of impulse noise.” Pet., 60–61. But this contention finds no more support than Petitioner’s conclusory assertions about the relationship between bit error rate and impulse noise. Similarly, the bare nature of Petitioner’s declarant’s conclusions about signal-to-noise ratio disclosing impulse noise lacks evidentiary support: “And, as explained in Ground 1 regarding element 20[b], [signal to noise ratio] is indicative of impulse noise events on the transmission channel. A POSITA would have also known that [signal to noise ratio] is indicative of impulse noise events on the transmission channel.” Pet., 61 (citations omitted). This tautology is not credible expert testimony. Looking back to Ground 1, there is no more explanation.

In Ground 1 for 20[b], Petitioner makes an assertion about impulse noise that is just as conclusory: “Starr further teaches monitoring signal to noise ratio... which is also a transmission error value and indicative of impulse noise on the

transmission channel.” Pet., 26; *accord* Pet., 27 (“A POSITA would have known that [signal to noise ratio] is indicative of impulse noise events on the transmission channel.” (citing conclusory assertions from EX1002)).

A declarant repeatedly stating that signal-to-noise ratio discloses impulse noise does not make it so.

V. THE BOARD SHOULD EXERCISE ITS DISCRETION TO DENY INSTITUTION UNDER *FINTIV*.

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 a stay 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 seven 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 April 29, 2026. Jury selection in the parallel litigation is scheduled to begin September 22, 2025, which is more than seven months before the projected FWD deadline. EX2008, 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 four months before the projected FWD deadline.

Additionally, citing a Lex Machina report,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., 5 (citing EX1009). Even applying this date, which is most favorable to Petitioner, the trial in the parallel litigation would begin more than two 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 in this IPR between about two to seven months after jury trial in the parallel litigation:

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

⁶ The *Fintiv* memo authorized the Board to consider the median time-to-trial statistics that are published by US Courts, not by Lex Machina.

Petitioner asserts “the parties are engaging in venue discovery in connection with a motion to transfer the co-pending litigation to the District of Colorado” and that, if transferred, the estimated trial date would be March 22, 2027. Pet., 5–6. 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 more than seven 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 April 29, 2025. The parties have already exchanged invalidity and infringement contentions and are engaged in fact discovery. By the April 29, 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. EX2008, 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., 6 (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 1008⁷). Nor was Petitioner diligent in filing the Petition, as it alleges. *See* Pet., 6–7. Petitioner admits it filed the Petition “approximately 11 weeks” (almost three months) after it was served infringement contentions. Pet., 6–7. And the Petition was filed seven months after the Complaint identified the asserted claim that is challenged here. EX1006, ¶¶35–36. *Cf. Fintiv* at 11 (“If the evidence shows that the petitioner filed the petition expeditiously, such as promptly after becoming aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution under *NHK*.”).

The Petition challenges only one claim: independent claim 20. Pet., 1. Taking almost three months to challenge a single claim is not diligent, and Petitioner does not provide any explanation for its delay in filing the Petition.

⁷ The current schedule, issued October 4, 2024, and filed as Exhibit 2008, shows that only minor updates have been made to the schedule since the July 22, 2024 schedule (EX1008).

Because the parties and the court will have expended significant resources by the April 29, 2024 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 conflicting decisions.’” *Fintiv* Memo, 7; *Fintiv*, 12. Here, there is complete overlap between the invalidity issues: the Petition challenges the validity of claim 20 of the ’996 patent based on (i) Klayman and Starr and (ii) Agrawal and Starr, Pet., 1; in the parallel litigation, Petitioner challenges the validity of claim 20 using the same three references, e.g., EX2009, 50–54.

Petitioner’s stipulation—to “not pursue any of the invalidity references relied on in the Petition in the district court litigation”—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, each of which has at least one counterpart or related patent/publication that is not included in the stipulation. Klayman was also published as WIPO publication WO 1997/36377. EX2010. Agrawal was also published as WIPO publication WO 1999/04338. EX1004, Face Page, Item (87). And Starr is part of a large family of patents related

as continuations. EX2011. 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.

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

E. Factor 5 strongly favors denial because the parties involved in this IPR are the same as in the district court proceeding.

Factor five weighs in favor of denying institution because, as Petitioner acknowledges, "Petitioner is a defendant in the parallel proceeding." 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.").

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 in the arguments above, the Petition fails to establish that its art teaches or suggests the "periodically" limitation. *See, supra*, Section IV.B–C. And Agarwal, alone or with Starr, does not teach or suggest impulse noise. *See, supra*, Section IV.D. Petitioner's declarant largely repeats the

Petition verbatim without providing additional analysis or corroborating evidence.

Id.; *Bytemark*, IPR2022-00624, Paper 9 at 15. 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.

VI. CONCLUSION

Petitioner fails to show a reasonable likelihood that any of the challenged claims is unpatentable as obvious in view of the cited art and, therefore, the Board must deny institution. Alternatively, the Board should use its discretion under the *Fintiv* factors to deny institution.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

/Michael D. Specht/

Michael D. Specht
Registration No. 54,463
Attorney for Patent Owner

Date: January 29, 2025

1101 K Street, NW, 10th Floor
Washington, DC 20005
(202) 371-2600

CERTIFICATE OF WORD COUNT (37 C.F.R. § 42.24(d))

1. This Patent Owner Preliminary Response complies with the type-volume limitation of 14,000 words, comprising 6,771 words, excluding the parts exempted by 37 C.F.R. § 42.24(a)(1).

2. This Patent Owner Preliminary Response complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman font.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

/Michael D. Specht/

Michael D. Specht
Registration No. 54,463
Attorney for Patent Owner

Date: January 29, 2025

1101 K Street, NW, 10th Floor
Washington, DC 20005
(202) 371-2600

CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PATENT OWNER PRELIMINARY RESPONSE UNDER 37 C.F.R. § 42.107(a)** and associated Exhibits 2001-2011 were served in their entireties on January 29, 2025, upon the following parties via electronic mail:

Erik B. Milch (Lead Counsel)
Joseph Drayton (Back-up Counsel)
Elizabeth Shrieves (Back-up Counsel)
Edward Wang (Back-up Counsel)
PROSKAUER ROSE LLP
emilch@proskauer.com
jdrayton@proskauer.com
eshrieves@proskauer.com
ewang@proskauer.com

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX PLLC

/Michael D. Specht/

Michael D. Specht
Registration No. 54,463
Attorney for Patent Owner

Date: January 29, 2025

1101 K Street, NW, 10th Floor
Washington, DC 20005
(202) 371-2600