

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION, LENOVO (UNITED STATES) INC., MOTOROLA
MOBILITY LLC,
Petitioners,

v.

COLLISION COMMUNICATIONS, INC.,
Patent Owner.

Case No. IPR2025-00302
U.S. Patent No. 7,920,651

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

TABLE OF CONTENTS

I.	Introduction.....	1
II.	Background Technology for the Claimed Iterative Amplitude Estimations	4
A.	Wireless Channels	5
B.	Amplitude vs. Symbols and Signals.....	6
1.	Amplitude.....	7
2.	Wireless Symbols and Signals	8
C.	Multiple-User Channels	10
D.	Successive Interference Cancellation vs. Parallel Interference Cancellation.....	10
III.	The Challenged '651 Patent	13
A.	Exemplary Architecture	13
B.	Exemplary Updated Amplitude Estimations.....	20
C.	The Challenged Claims	23
IV.	The Petition.....	25
A.	Ground 1	25
B.	Ground 2.....	29
V.	Ground 1 Does Not Establish The Required Reasonable Likelihood of Success.....	33
A.	The Challenged Claims Require Iterative Amplitude Estimates	33
B.	Fuller Discloses Successively Estimating Symbols, Not Amplitudes	34

VI.	Ground 2 Does Not Establish the Required Reasonable Likelihood of Success.....	38
A.	<i>Zha</i> Does Not Disclose Passing New Amplitude Estimates Back to Processors Or Filters	38
B.	The Petition Does Not Establish That It Was Obvious To Combine <i>Zha</i> and <i>Frank</i>	40
VII.	The <i>Fintiv</i> Factors Heavily Favor Discretionary Denial of Institution Under § 314(A).....	42
A.	Factor 1: Whether a stay exists or is likely to be granted if a proceeding is instituted.....	43
B.	Factor 2: Proximity of the court’s trial date to the Board’s projected statutory deadline	44
C.	Factor 3: Investment in the parallel proceeding by the court and parties	46
D.	Factor 4: Overlap between issues raised in the petition and in the parallel proceeding	47
E.	Factor 5: Whether the petitioner and the defendant in the parallel proceeding are the same party.....	48
F.	Factor 6: Other circumstances that impact the Board’s exercise of discretion, including the merits / Compelling Merits	49
VIII.	Conclusion	49

TABLE OF AUTHORITIES

Page(s)

Federal Cases

<i>Apple Inc. v. Fintiv, Inc.</i> , IPR2020- 00019 Paper 11 (PTAB Mar. 20, 2020)	<i>passim</i>
<i>Comcast Cable Communications, LLC v. Touchstream Technologies, Inc.</i> , IPR2024-00324, Paper 13 (PTAB July 24, 2024).....	45, 47, 49
<i>Sotera Wireless, Inc. v. Masimo Corp.</i> , IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020)	48
<i>Verizon Bus. Network Servs. LLC v. Huawei Techs. Co. Ltd.</i> , IPR2020-01292, Paper 13 (PTAB Jan. 25, 2021)	46

Regulations

37 C.F.R. § 42.24(d)	51
----------------------------	----

TABLE OF EXHIBITS

Exhibit	Description
2001	Declaration of Dr. Giuseppe Caire
2002	CV of Dr. Giuseppe Caire
2003	U. Madhow, <i>Fundamentals of Digital Communication</i> , Cambridge University Press 2008
2004	R.G. Gallager, <i>Principles of Digital Communication</i> , Cambridge University Press 2008
2005	RESERVED
2006	RESERVED
2007	Judge Rodney Gilstrap Motion to Stay Pending IPR Statistics
2008	June 30, 2024 Federal District Court Case Management Statistics
2009	Docket in <i>Collision Communications, Inc. v. Lenovo Group Ltd.</i> , No. 23-cv-00594 (E.D. Tex.)
2010	Scheduling Order in <i>Collision Communications, Inc. v. Lenovo Group Ltd.</i> , No. 23-cv-00594 (E.D. Tex.) Dkt. 44 (Aug. 5, 2024)
2011	Declaration of Dr. Giuseppe Caire

This Petition is a copycat petition seeking to join the pending Petition in IPR2025-00011, for which PTAB has not yet issued an institution decision.¹ This Petition is substantively identical to that -00011 Petition, and it should be denied for the same reasons set forth in Patent Owner’s Preliminary Response to the -00011 Petition.

Accordingly, the following Preliminary Response is substantively identical to Patent Owner’s -00011 Preliminary Response and repeats all of those reasons for denial. In addition, Patent Owner has updated the following *Fintiv* section to address the present petitioners and align with the recission of the June 21, 2022, Director’s Memorandum entitled “Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation” (“Guidance Memo”).

I. Introduction

The Board should deny institution because (1) neither Petition Grounds 1 nor 2 establishes the required reasonable likelihood of success; and (2) the ongoing

¹ Patent Owner has retained Giuseppe Caire, Ph.D. in this proceeding. (EX2011). Dr. Caire has adopted his prior opinions set forth in EX2001 (submitted in IPR2025-00011) and, for expediency, this Patent Owner Preliminary Response cites to Dr. Caire’s previously submitted declaration, also presented herein as EX2001.

parallel district court proceedings establish that institution should be discretionally denied under *Fintiv*.

Ground 1 Does Not Establish The Required Likelihood Of Success: The challenged '651 Patent discloses and details a number of improved systems and methods for identifying and isolating multiple signals in a wireless communication system. To that end, the challenged claims require a number of limitations directed to iteratively computing amplitude estimates. These limitations include:

- computing individual amplitude estimates;
- processing those individual amplitude estimates to calculate new amplitude estimates; and
- iteratively passing those new amplitude estimates back to the claimed processors or filters.

Ground 1 relies on the *Fuller* reference as supposedly teaching each of these amplitude limitations. But *Fuller* not only fails to disclose these individual amplitude estimates, new amplitude estimates, and the passing back of the new amplitude estimates, ***Fuller fails to even mention amplitude at all.***

This is because *Fuller* does not concern the calculation or recalculation of amplitude estimates, iteratively or otherwise. Instead, at best, *Fuller* generally concerns other **unclaimed** aspects of the '651 Patent's disclosed architecture,

namely the estimation of symbols and signals, not of amplitudes. (See, e.g., EX1004 at Abstract).

Ground 2 Does Not Establish The Required Likelihood Of Success: Each challenged claim requires iteratively passing new amplitude estimates back to claimed processors or filters for iterative processing. (E.g., claim 1 at 26:19-22 and claim 6 at 26:56-58). Because Ground 2’s primary reference *Frank* admittedly does not teach this limitation (or iteratively calculating amplitude estimates at all), Ground 2 attempts to cure this deficiency by combining *Zha* with *Frank*. But *Zha* cannot save Ground 2 because (1) *Zha* also does not teach this limitation; and (2) the Petition does not establish it was obvious to combine *Frank* and *Zha* in the first place.

Indeed, the Petition’s argument for combining Ground 2’s *Frank* and *Zha* references hinges on its assertion that they both use “successive interference cancellation.” (E.g., Pet. at 45-47). But the entire premise for this obviousness argument is demonstrably false: while *Zha* does indeed use successive interference cancellation, every *Frank* embodiment that Petitioners seek to combine with *Zha* is explicitly and expressly a very different and incompatible approach, parallel interference cancellation. (E.g., EX1006 at ¶¶ [0012]-[0015]). Unable to assert, much less show, how these disparate approaches would and could be combined,

the Petition just pretends they both use successive interference cancellation and does not address the distinct and incompatible differences between the two.

Discretionary Fintiv Denial: The *Fintiv* factors heavily weigh in favor of discretionary denial. In an attempt to characterize every factor as either neutral or favoring institution, the Petition is rife with conclusory statements and misapplications of controlling PTAB precedent. Under the appropriate legal standards—and considering the totality of the record evidence—on balance, the *Fintiv* factors support discretionary denial of institution.

II. Background Technology for the Claimed Iterative Amplitude Estimations

The '651 Patent generally concerns wireless communication systems comprising a wireless channel that includes not just one, but multiple transmitted signals. (*E.g.*, EX1001 at 1:53-63; EX2001 at ¶14). The patent discloses multiple improved devices and methods for detecting a signal transmitted from one user among other interfering signals sent from other users (*e.g.*, interference cancellation). (*E.g.*, EX1001 at 8:58-9:6, 9:65-10:11; EX2001 at ¶14). The challenged claims concern such improved devices and methods, ones that may be used to help separate one signal from other interfering signals using iterative amplitude estimates. (*E.g.*, EX1001 at claims 1 and 6).

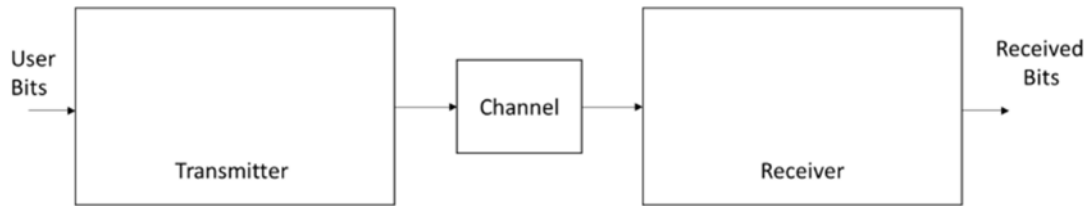
To provide context for the claimed subject matter and Petitioners' Petition, the following brief background addresses the following topics:

- wireless channels;
- wave amplitudes versus wireless symbols and signals;
- multiple-user channels; and
- successive interference cancellation versus parallel interference cancellation.

A. Wireless Channels

A typical wireless transmission generally involves a transmitter and receiver at opposite ends of a wireless channel, wherein an original signal is input at the transmitter and a recovered signal is calculated at the receiver. (EX2001 at ¶16).

As illustrated in the simplified figure below, an original information signal in the form of user bits (sequences of 0s and 1s) is input to the transmitter, which first converts those bits into an analog carrier wave and then transmits that carrier wave over the wireless channel to the receiver. (EX2001 at ¶17; EX2003 at 2-4; EX2004 at 1-5, 95, 181-183, 208-209). The receiver receives the wave and attempts to recover the original signal by converting the received wave into received bits. These received bits are the recovered signal. (EX2001 at ¶17; EX2003 at 2-4; EX2004 at 3-5).



(EX2001 at ¶17, based on FIG. 1.1 of EX2003).

By the channel's very nature, as the wave passes through the channel, noise is introduced, and information can be lost or corrupted. (EX2001 at ¶18; EX2003 at 2-4; EX2004 at 1-5, 95, 181-183, 208-209). Thus, when a receiver receives the wave and attempts to convert it back into bits, the noise must be accounted for and can affect the accuracy of the conversion and reproduction of the original signal. (EX2001 at 18; EX2003 at 2-4; EX2004 at 1-5, 95, 181-183, 208-209).

B. Amplitude vs. Symbols and Signals

Although the challenged claims all require specific and detailed types of iterative amplitude estimations, Ground 1's primary reference, *Fuller*, does not even mention amplitudes at all, much less amplitude estimations, iterative amplitude estimations, or the specific iterative amplitude estimations claimed here.

Unable to identify even a mention of amplitude in *Fuller*, the Petition instead resorts to pointing to symbol and signal estimations. But symbols and signals (and estimations thereof) are very different from amplitude and amplitude estimations. (EX2001 at ¶20).

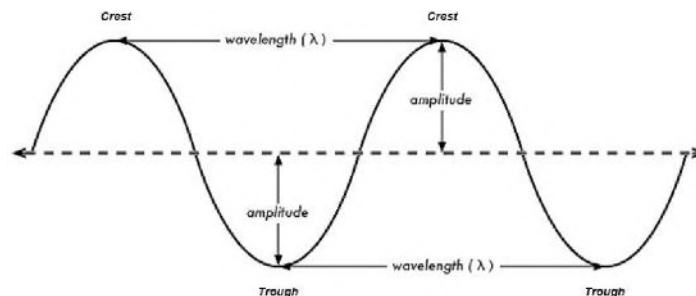
1. Amplitude

Sound and radio waves have numerous properties, including amplitude, wavelength, frequency, and phase. (EX2001 at ¶21). For example, a wave's phase is equal to the shift in time between two waves measured in degrees. The phase shift can be to the left (leading) or to the right (lagging) and typically has a value between 0 degrees and ± 360 degrees. The phase shift can be between two different waves or the shift of a single wave. The following figure shows a phase shift of 90 degrees from the solid wave to the dashed wave:



(EX2001 at ¶21).

Amplitude is another wave property. As illustrated below, a wave's amplitude is the distance from the wave's midpoint to its crest or trough:



(EX2001 at ¶21).

2. Wireless Symbols and Signals

In contrast, in a wireless system, the input and recovered signals are a series of user bits (sequences of 0s and 1s), while symbols are (usually) smaller unique sequence of 0s and 1s that can be used to more efficiently transmit and recover the input signal. (EX2001 at ¶22).

To illustrate (using a much-simplified example), suppose that the input signal is the following series of eight bits: “10000111.” This signal can be treated as comprising four different symbols, each two bits in length: the symbol “10,” followed by the symbols “00,” “01,” and “11.” (EX2001 at ¶23).

To transmit the “10000111” input signal, instead of transmitting a wave containing information for every bit, a wireless system can instead send a wave having information for the relevant symbols. (EX2001 at ¶24). For example, in Ground 1’s *Fuller*, the disclosed system uses phase-based symbols, where each sequence of symbols is associated with a different wave phase. (See, e.g., EX1004 at 7:16-17 (describing a “sequence of Binary Phase Shift (BPSK) symbols”)).

In our simplified example, the transmitter could send a wave having variable phases, first a phase for the “10” symbol, then a different phase for the “00” symbol, a phase for the “01” symbol, and, finally, a phase for the “11” symbol. (EX2001 at ¶25). The receiver then receives a version of that wave, plus associated noise and less any information lost during transmission. (EX2001 at

¶25). The receiver attempts to identify the correct phases and use them to identify their associated symbols. (EX2001 at ¶25).

Because of the noise and lost information, the phase values identified by the receiver may not correspond to the correct intended symbols. (EX2001 at ¶26). Accordingly, once the receiver initially estimates symbols, it may employ error correction to try to identify the correct symbols based on those originally estimated symbols. (EX2001 at ¶26). For example, a receiver may calculate probabilities as to whether the initial symbol estimates are correct. If the probabilities are good enough, the estimated symbols are used. If they are not, the symbols are modified and the probabilities are again calculated. This iterative process can be repeated until the receiver is satisfied that the most-recently modified symbol estimates are accurate enough to use. (EX2001 at ¶26).

Once the receiver calculates these symbols, they are used to recover the original signal. (EX2001 at ¶27). To finish our simplified example, once the receiver has received a transmitted wave and identified its associated phases, it would use those phases to initially estimate symbols. The receiver would then apply error correction to modify those initial symbol estimates until, hopefully, it calculates the symbols “10,” “00,” “01,” and “11.” It can then use those symbols to construct the recovered signal “10000111.” (EX2001 at ¶27).

C. Multiple-User Channels

For a variety of reasons, a wireless channel may include not just one signal from one user, but multiple signals from multiple users. (EX2001 at ¶28). For example, signals from other channels may crossover into the channel and interfere with the signal intended for that channel. (EX2001 at ¶28).

In addition, a channel may be intentionally overpacked with multiple signals. (EX2001 at ¶29). As described in the “651 Patent, in such systems, multiple users can use the same channel to each send their own signals. (*E.g.*, EX1001 at 1:53-58). Although this overpacking allows more signals to be sent within a limited bandwidth, it also raises a number of problems. (EX2001 at ¶29). One such problem is how to identify and isolate the different signals sent on the same channel, sometimes called Multi-User Detection (“MUD”), interference suppression, or interference cancellation. (*E.g.*, EX1001 at 1:66-2:14; EX2001 at ¶29).

D. Successive Interference Cancellation vs. Parallel Interference Cancellation

There at least two distinct approaches to interference cancellation: (1) successive interference cancellation; and (2) parallel interference cancellation. (EX2001 at ¶30). The Petition highlights and relies on the material differences between the two approaches because its sole argument for combining Ground 2’s

Frank and *Zha* references is its assertion that they both use the successive approach to interference cancellation. (*E.g.*, Pet. at 45-47). Momentarily putting aside the baselessness of Petitioners' conclusion (which is akin to arguing it is obvious to import any and all features from a gas engine into an electric engine because they both drive a vehicle's wheels), the entire premise for this obviousness argument is demonstrably false: while *Zha* does indeed use successive interference cancellation, every *Frank* embodiment that Petitioners seek to combine with *Zha* is explicitly and expressly parallel interference cancellation. (*E.g.*, EX1006 at ¶¶ [0012]-[0015]). Unable to assert, much less support, how these disparate approaches would and could be combined, the Petition just pretends they both use successive interference cancellation and does not address the distinct differences between the two. The following provides that missing information.

Successive Interference Cancellation: As the name suggests, successive interference cancellation attempts to identify and isolate the channel's multiple signals one after the other. (EX2001 at ¶31). For example, if there were ten signals present in a channel's information stream, the receiver would first try to identify and isolate just one of those signals, ignoring the remaining nine signals as interfering noise. Once this first signal is recovered (using, for example, the error-

corrected phased-based symbol approach discussed above), its information is subtracted (cancelled) from the original information stream. (EX2001 at ¶31).

The receiver then attempts to recover a second signal from the resulting smaller residual information stream, again ignoring the remaining (now eight) signals as interfering noise. Once this second signal is recovered, it, too is subtracted (cancelled) from the information stream. (EX2001 at ¶32).

This successive process continues, with a third signal being recovered and subtracted, a fourth signal being recovered and subtracted, etc., until the information stream comprises only information for the last (tenth) signal. This information is then used to recover that final signal, completing the successive interference cancellation process. (EX2001 at ¶33).

Parallel Interference Cancellation: In contrast, in a parallel interference cancellation process, the receiver does not attempt to recover signals one at a time, one after the other. Instead, the receiver attempts to recover all the signals at the same time. (EX2001 at ¶35).

Consider again our example of ten user signals present in a single channel's information stream. In parallel interference cancellation, the receiver will attempt to isolate and recover all ten signals at the same time. (EX2001 at ¶36). For example, the receiver may try to simultaneously subtract from each signal the

interfering information for the other nine signals. (EX2001 at ¶36). For each of the ten resulting sets of information, the receiver will then attempt to reconstruct its corresponding signal. (EX2001 at ¶36).

Because the reliability of these initial cancellations and reconstructions is typically low, the process will continue iteratively, with the receiver repeatedly recalculating and subtracting from each signal the interfering information for the other nine signals, until reliable cancellations, symbols, and signals are achieved. (EX2001 at ¶37).

III. The Challenged '651 Patent

The challenged '651 Patent discloses and details a number of improved systems and methods for identifying and isolating different user signals in a single channel's information stream.

As explained below, the disclosed systems and methods include (1) a unit that computes initial amplitude estimates, (2) a unit that computes symbol estimates, and (3) a unit that computes updated amplitude estimates. (*E.g.*, EX1001 at 8:58-9:6, 9:65-10:11). The challenged claims are directed to the computation of updated amplitude estimates. (*E.g.*, EX1001 at claims 1 and 6).

A. Exemplary Architecture

An exemplary receiver architecture illustrated in '651 Patent Figure 2 includes an initial amplitude estimator 110 (highlighted below in red), a symbol

estimator 105 (blue), a bank of decoders 130 (yellow), and a joint amplitude estimator 120 (green).

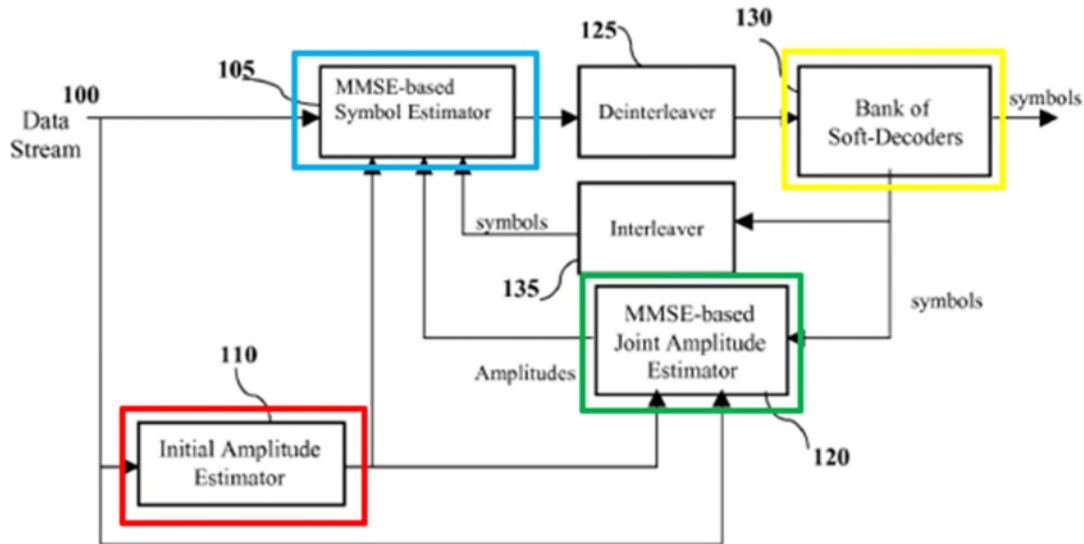


Figure 2

(EX1001 at Figure 2).

For a high-level overview (as illustrated above in Figure 2 and described in more detail below), this architecture works as follows:

- (1) The received multi-user data stream 100 is provided to the initial amplitude estimator 110, which detects active users and calculates an initial estimate of the amplitude of each user signal in the stream; (EX1001 at 15:25-42);
- (2) These initial amplitude estimates are provided (along with the data stream) to the symbol estimator 105, which uses that data to estimate symbols for each user; (EX1001 at 15:43-49, 16:1-4, 16:42-47);

(3) Those symbol estimates are provided to the bank of error-correcting decoders 130, which calculate probabilities for the symbol estimates (in other words, how likely those symbols are correct); (EX1001 at 9:2-4, 16:7-12, 16:38-40);

(4) The symbol likelihoods from the decoder are passed to the joint amplitude estimator, which uses that information to calculate updated amplitude estimates, which are provided to the symbol estimator so that it can use them to calculate updated symbol estimates; (EX1001 at 16:38-40, 18:63-20:51); and

(5) The symbol estimator, decoders, and joint amplitude estimator continue this cycle to iteratively calculate and provide information to one another (the joint amplitude estimator providing updates amplitude estimates to the symbol estimator, which in turn provides updated symbol estimates to the decoders, which in turn provides symbol likelihoods to the joint amplitude estimator, starting the cycle all over again) until some criteria is met, such as reaching a maximum number of iterations or a desired error rate; (EX1001 at 16:38-51, 20:41-51).

Initial Amplitude Estimator: As illustrated below, the exemplary initial amplitude estimator 110 receives the multi-user data stream 100:

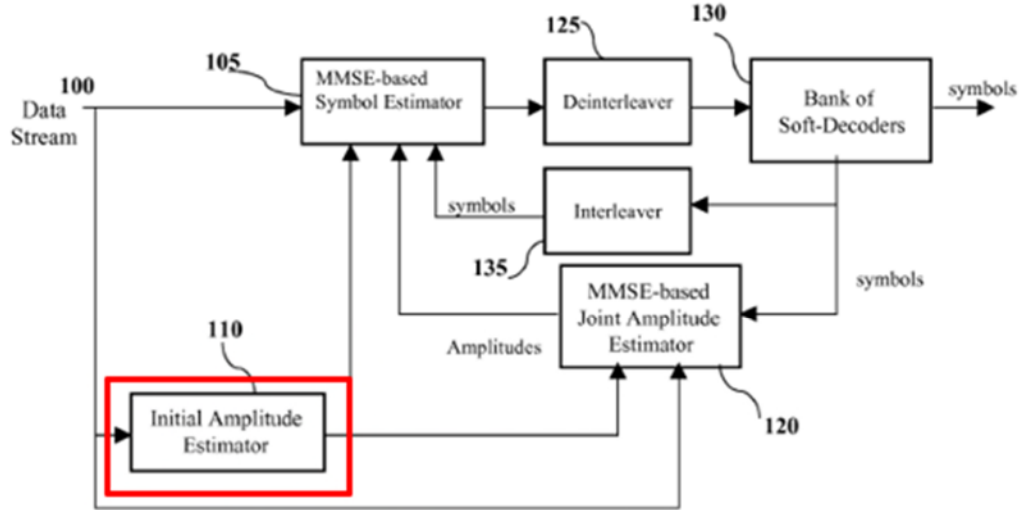


Figure 2

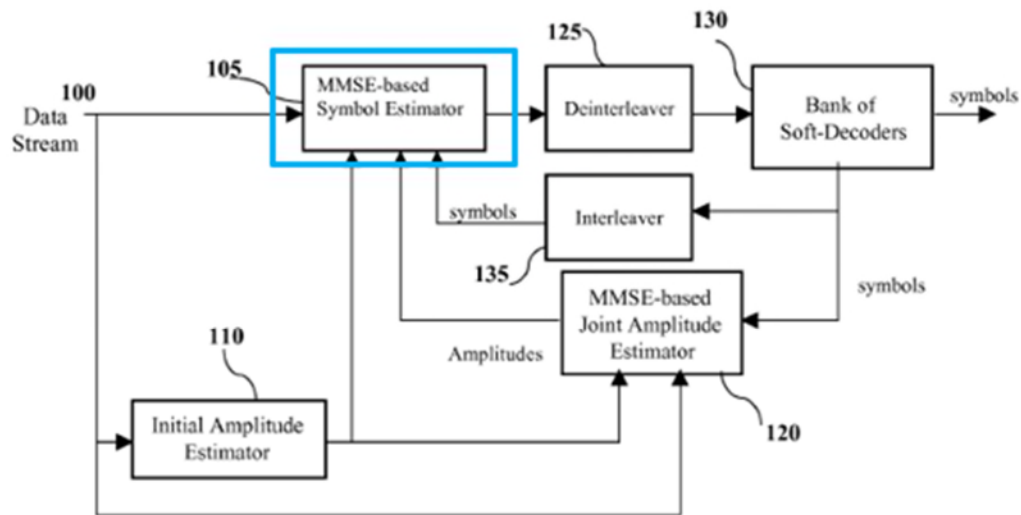
(EX1001 at Figure 2, 15:25-26). This initial amplitude estimator uses energy detection to identify which users are active within the channel's data stream.

(EX1001 at 15:35-42). It then integrates the energy out of a filter for all active users to compute an initial estimate for the amplitude of each active user's signal.

(EX1001 at 15:26-32).

As illustrated above, the initial amplitude estimates are passed to the exemplary symbol estimator 105 and to the joint amplitude estimator 120.

Symbol Estimator: During the first iteration of the process, exemplary symbol estimator 105 receives the data stream 100 and the initial amplitude estimator 110's initial amplitude estimates:

**Figure 2**

(EX1001 at Figure 2, 15:42-49). The symbol estimator then uses that data to estimate symbols for each user. (*Id.*).

The symbol estimator uses the initial amplitude estimates to compute symbol estimates only during the first cycle/iteration. (EX1001 at 15:42-49). During all other iterations, the symbol estimator uses updated amplitude estimates from the joint amplitude estimator (along with other information, such as prior information on the symbols) to re-estimate the symbols. (EX1001 at 15:42-49, 16:42-51).

Decoders: The symbol estimates from the symbol estimator are routed to the exemplary decoders 130.² (EX1001 at 16:2-4). The decoders calculate the likelihood for each estimated symbol and then routes those estimated symbols and their respective likelihoods to various units, including joint amplitude estimator 120:

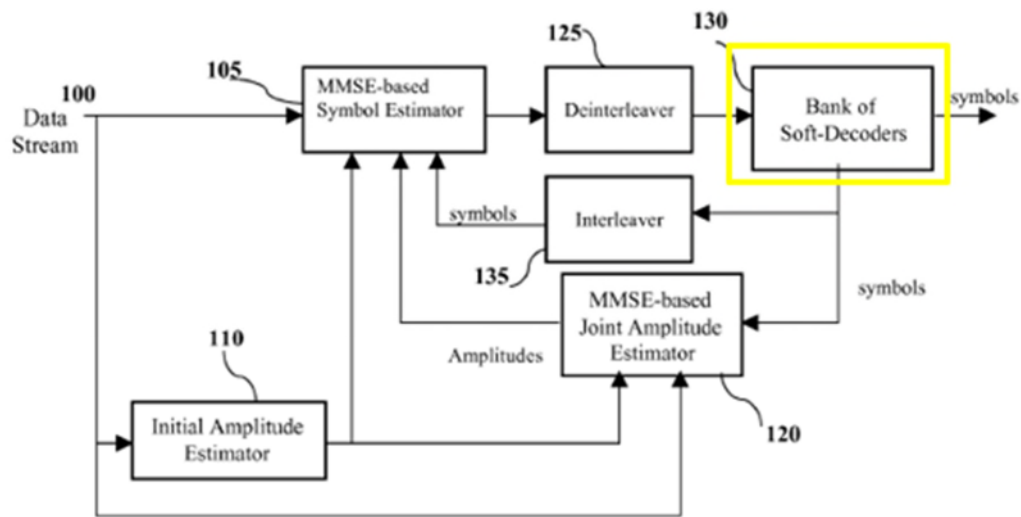


Figure 2

(EX1001 at Figure 2, 16:38-40, 18:63-20:51).

Joint Amplitude Estimator: Disclosed architecture embodiments include a joint amplitude estimator (discussed in more detail in the following section) apart from the initial amplitude estimator, symbol estimator, and decoders. After the

² For purposes of this general overview, details concerning other disclosed blocks, such as the deinterleaver 125 and interleaver 135 are omitted. (See, e.g., EX1001 at 16:14-27).

initial amplitude estimator provides the initial amplitude estimate, all updated amplitude estimates are computed and provided to the symbol estimator by and from exemplary joint amplitude estimator 120:

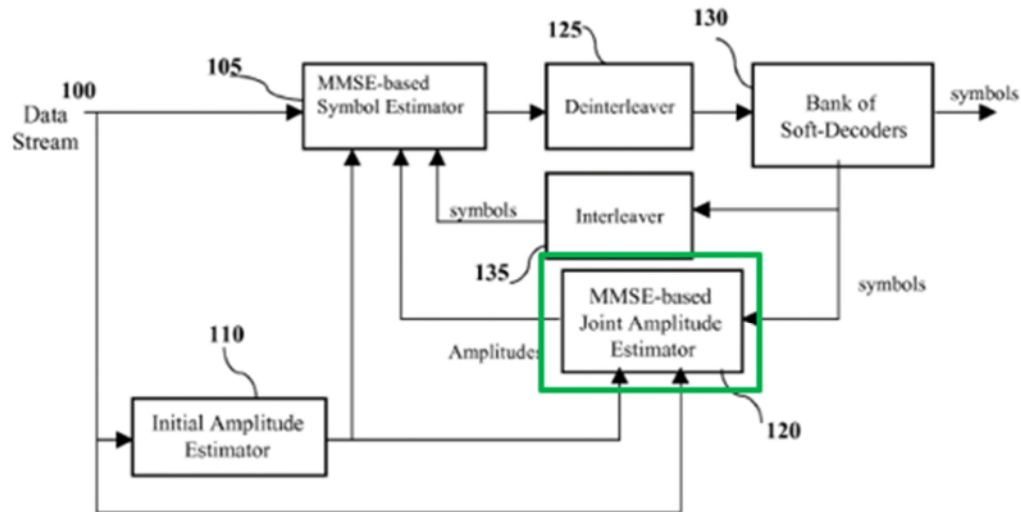


Figure 2

(EX1001 at Figure 2, 16:38-40, 18:63-20:51).

These updated amplitude estimates are based on the symbol likelihoods from the decoders and are provided to the symbol estimator to start a new cycle of computations, which continues and repeats until a predefined condition is met:

The new symbol likelihoods from the decoders 130 are used to update previous amplitude estimates in the joint amplitude estimator 120. ... The new amplitude estimates from the joint amplitude estimator 120 are passed to the MMSE-based Symbol Estimator 105 that re-estimates the symbols based on prior information on the symbols and updated parameter estimates. These updated symbol estimates from the symbol estimator 105 are then re-routed to the bank of decoders 130. This process is repeated for either some fixed number of

iterations or until the estimates of the bit error rate or frame error rate achieve some desired level.

(EX1001 at 16:38-51).

The blocks involved in this exemplary iterative cycle are outlined in dotted blue below:

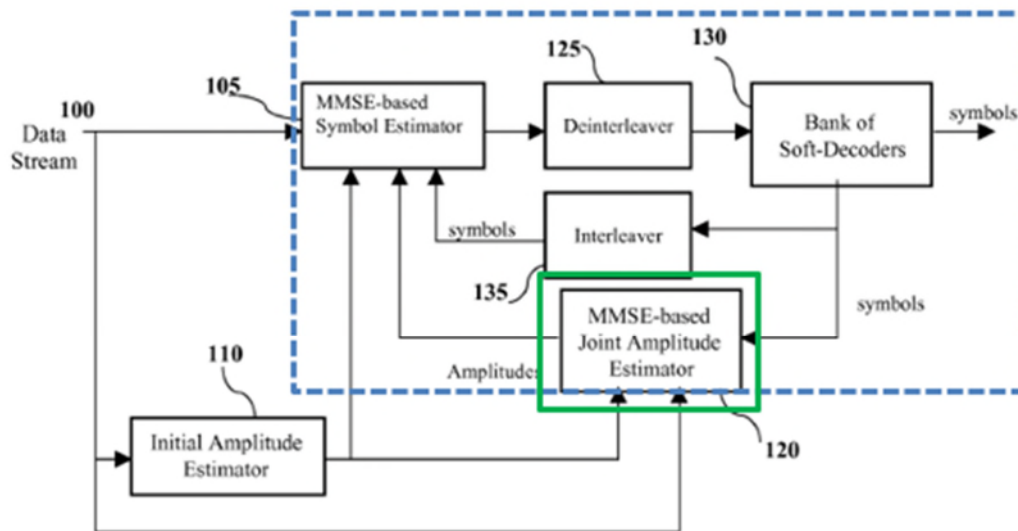


Figure 2

(EX1001 at Figure 2, 16:38-51).

B. Exemplary Updated Amplitude Estimations

The '651 Patent provides detailed descriptions of exemplary joint amplitude estimators for computing updated amplitude estimates. (*E.g.*, EX1001 at Figure 4, 18:63-20:51). In one example, the multi-user information stream (data stream 100) received by the joint amplitude estimator is divided up into a plurality of “observation intervals.” (EX1001 at 18:63-67). “These intervals can be based on

distinguishing attributes such as time, code, or frequency.” (EX1001 at 18:63-19:1).

Figure 4 depicts an exemplary joint amplitude estimator receiving three time-based observation intervals labeled 400, 405, and 410:

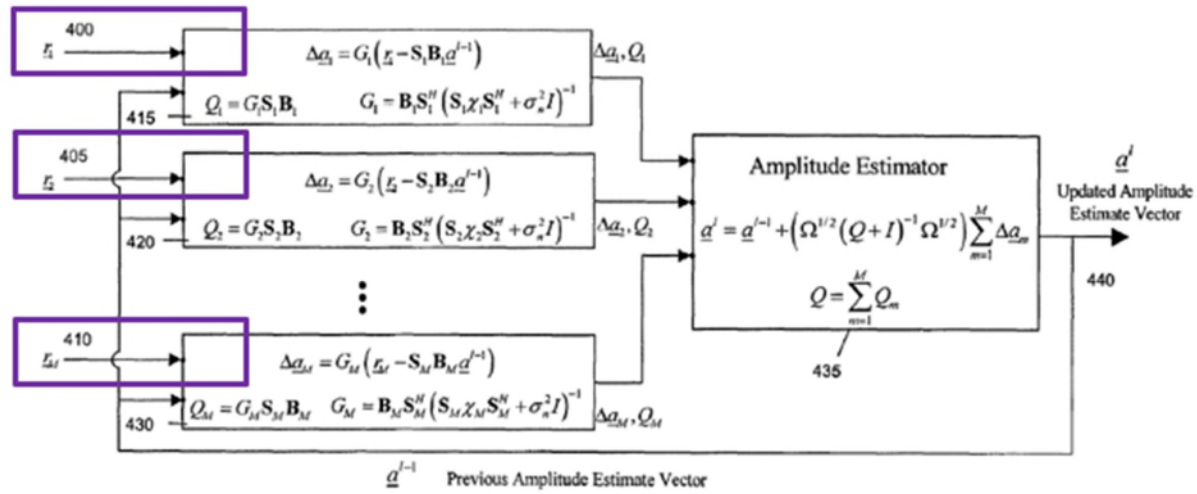
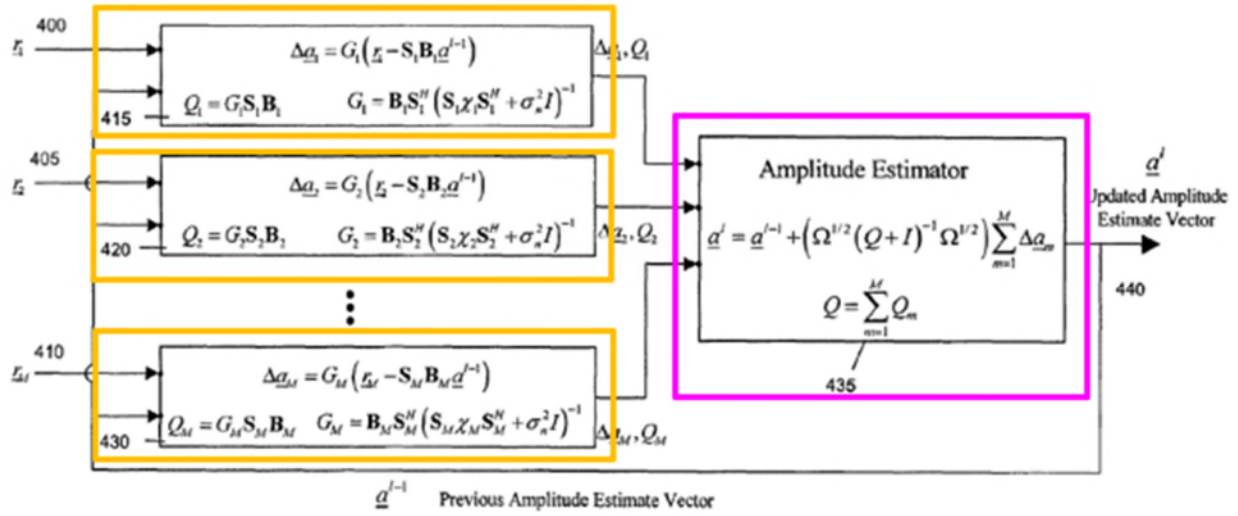


Figure 4

(EX1001 at Figure 4, 11:24-25, 18:63-19:5).

Figure 4 illustrates that this exemplary joint amplitude estimator comprises three processing modules 415, 420, and 430 (annotated in orange) and an amplitude estimator (in pink):

**Figure 4**

(EX1001 at Figure 4, 11:24-25, 18:63-19:5, 19:60-20:40).

Each processor (1) performs interference cancellation, each cancelling out different interference; and (2) includes a filter that is applied after the interference cancellation to compute an amplitude estimate for the observation interval. (*E.g.*, EX1001 at 19:5-59).

The individual amplitude estimates from the filter processors are passed to the amplitude estimator 435, which combines those estimates in a weighted manner. (*E.g.*, EX1001 at 19:60-20:24). The amplitude estimator uses this weighted combination and symbol estimates and likelihoods received from the bank of decoders (as discussed above) to compute new updated amplitude estimates. (*E.g.*, EX1001 at 19:60-20:24, 20:32-51).

These updated amplitude estimates are fed back both to the symbol estimator (as explained above) and to the joint amplitude estimator's individual filter processors. (*E.g.*, EX1001 at 20:32-51). This iterative process is repeated (again, as discussed above) until a predefined condition is met, such as a maximum number of iterations or a desired error rate. (*E.g.*, EX1001 at 20:32-51).

C. The Challenged Claims

The Petition challenges claims 1-4 and 6-8. The foregoing innovative approaches are embodied in those challenged claims, each of which requires:

- a data stream from multiple users divided into observation intervals;
- a plurality of processors/filters that perform interference cancellations and compute individual amplitude estimates;
- processing those individual amplitude estimates to calculate new amplitude estimates;
- iteratively passing those new amplitude estimates back to the processors/filters until either a maximum number of iterations or a desired error rate is reached.

(*See, e.g.*, '651 Patent at claims 1-4 and 6-8).

For example, challenged independent claim 1 and its challenged dependent claims 2-4 are directed to a join amplitude estimator that includes the following limitations:

1. A joint amplitude estimator for a data stream from multiple users, comprising:

a data stream from said multiple users divided into a **plurality of observation intervals**;

a plurality of processing modules coupled to said observation intervals, wherein said processing modules **calculates interference cancellation values** for each of said users and computes a filter for each of said observation intervals, said **filter being applied to said data within said observation interval to compute individual amplitude estimates**; and

an amplitude estimation unit which processes said individual amplitude estimates and calculates new amplitude estimates, wherein said new amplitude estimates are **iteratively passed back to said processing modules** either a maximum number of iterations or a desired bit error rate have been reached.

(EX1001 at claim 1).

Similarly, challenged independent claim 6 and its challenged dependent claims 7 and 8 are directed to a method for processing amplitude estimates and include the following limitations:

6. A method for processing amplitude estimates for a multiuser data stream divided into a plurality of observation intervals, comprising:

computing a filter for each observation interval of said data stream;

applying interference cancellation to said data stream for each said observation interval;

applying said filter to said data stream for each said observation interval from said interference cancellation **to produce individual amplitude estimates** for each said observation interval;

computing new amplitude estimates using said individual amplitude estimates; and

passing said new amplitude estimates back to said filter for iterative processing until either a maximum number of iterations or a desired bit error rate have been reached.

(EX1001 at claim 6).

IV. The Petition

The Petition asserts the following obviousness Grounds 1 and 2:

Ground	References	Basis	Challenged Claims
1	<i>Fuller and Reznik</i>	§ 103	1-4, 6-8
2	<i>Frank and Zha</i>	§ 103	1-4, 6-8

The Petition relies on two primary references for all its grounds, *Fuller* and *Frank*, and two secondary references, *Reznik* and *Zha*, but both of these combinations fail to disclose all the required claim limitations of independent claims 1 and 6.

A. Ground 1

Ground 1's primary reference is *Fuller*, which Petitioners rely on as allegedly disclosing almost all of the limitations of the independent claims, replying on *Reznik* almost exclusively for the claimed filters, which the Petition concedes are not disclosed in *Fuller*. (Pet. at 33). For example, Ground 1 relies on *Fuller* as allegedly disclosed the amplitude limitations, including the claimed computing of individual amplitude estimates, processing those individual amplitude estimates to calculate new amplitude estimates, and iteratively passing

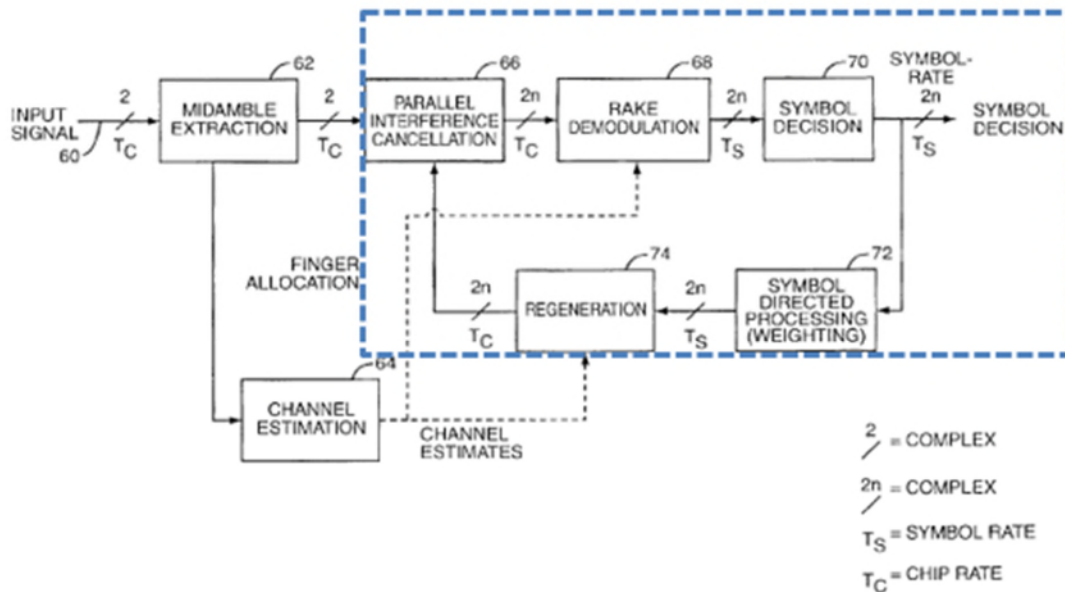
those new amplitude estimates back to the claimed processors or filters. (*E.g.*, Pet. at 32, 35-37, 38, 42-44).

The Petition's reliance on *Fuller* for these amplitude limitations is both curious and telling because *Fuller* not only fails to disclose these individual amplitude estimates, new amplitude estimates, and passing back of the new amplitude estimates, **Fuller fails to even mention amplitude at all**. (EX2001 at ¶64).

This is because *Fuller* does not concern the calculation or recalculation of amplitude estimates, iteratively or otherwise. (EX2001 at ¶65). Instead, at best, *Fuller* generally concerns other **unclaimed** aspects of the '651 Patent's disclosed architecture, namely the estimation of **symbols** and **signals**, not of amplitudes. (*See, e.g.*, EX1004 at Abstract; EX2001 at ¶65).

According to *Fuller*, its disclosure concerns interference cancellation that relies on iterative symbol estimation, where symbol estimates are iteratively weighted based on the consistency of prior estimates for that symbol. (EX1004 at Abstract). But this is (again, at best) the (general) subject matter of the '651 Patent's symbol estimator and bank of decoders, not of the additional inventive joint amplitude estimator.

For example, the iterative cycle described in *Fuller* and depicted in its Figure 2 (outlined in a dotted blue line below) employs blocks such rake demodulation 65, symbol decision 70, regeneration 74, and symbol directed processing 72:



(EX1004 at Fig. 2).

Fuller describes that rake modulation block 68 separates a stream comprising multiple user signals (“composite input signal 60”) into “individual signals corresponding to the respective signals for each user.” (EX1004 at 5:9-12; 5:19-21). These individual signals are then passed to symbol decision block 70, which determines “symbol estimates for each user” signal output by rake demodulation 68. (EX1004 at 5:25-34).

Fuller next describes that these symbol estimates are provided by symbol estimator 70 to symbol directed processing block 72, which provides weighting “based on the consistency of previous estimates for the given symbol” and then calculates and outputs “weighted symbols based on [that] weighting and the [received] symbol estimate[s.]” (EX1004 at 5:32-39). Figure 8 illustrates these 4-bit symbols—1111, 0111, 1011, 0011, etc.—and a disclosed function for weighting them:

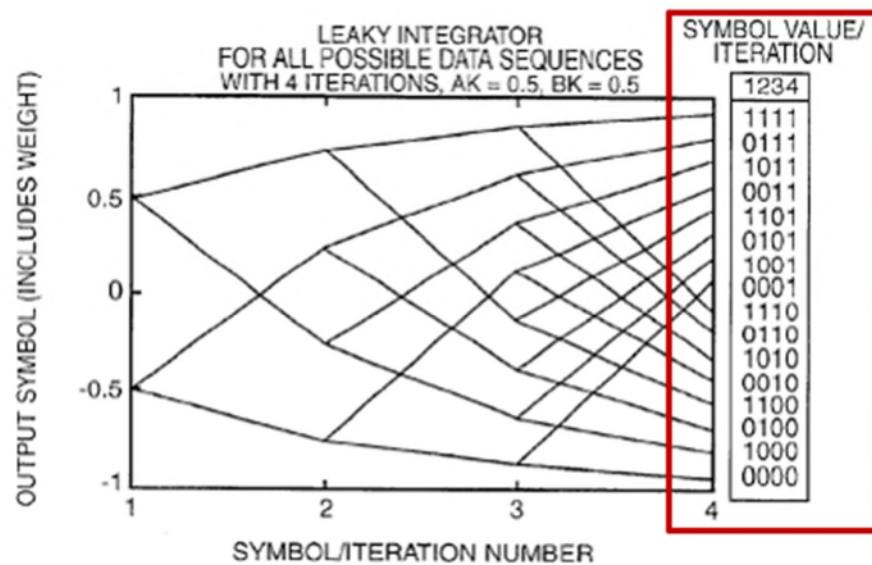


FIG. 8

(EX1004 at Figure 8, 3:17-19, 7:10-12).

Finally, these weighted symbols are provided to regeneration function 74, which “recreates estimates of the individual signals from the weighted symbols for each of the estimated users.” (EX1004 at 5:40-56). *Fuller* does not describe the

use or iterative calculation of amplitudes in this or any other of the foregoing functions. (EX1004 at 5:9-56; EX2001 at ¶71). It cannot because, again, *Fuller* does not mention amplitudes at all. (EX2001 at ¶71).

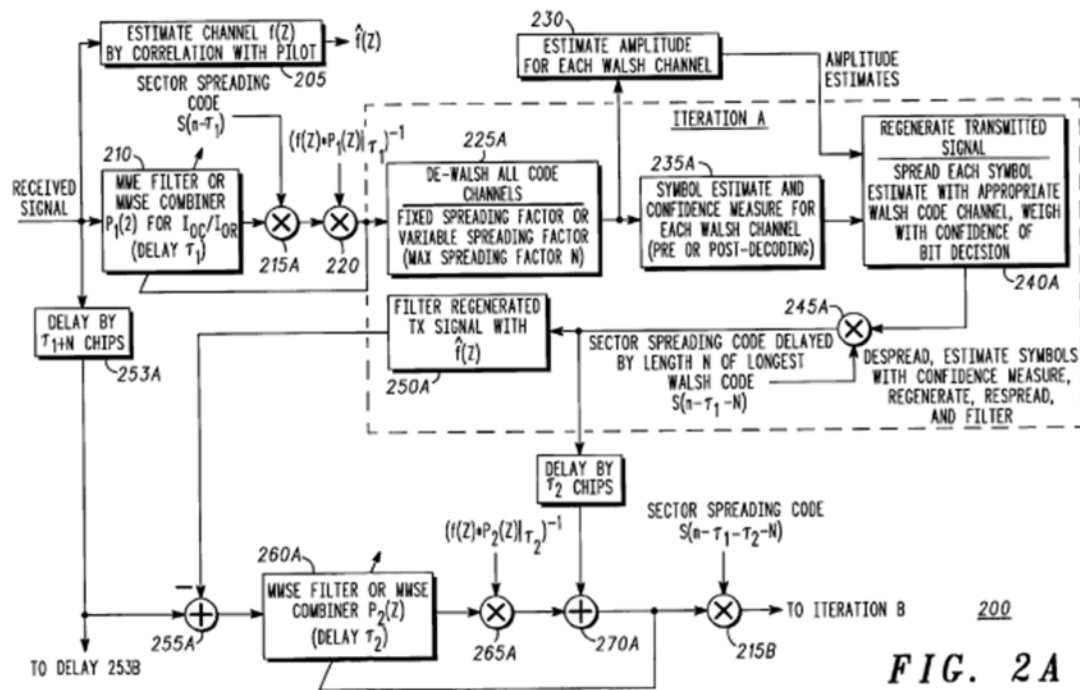
B. Ground 2

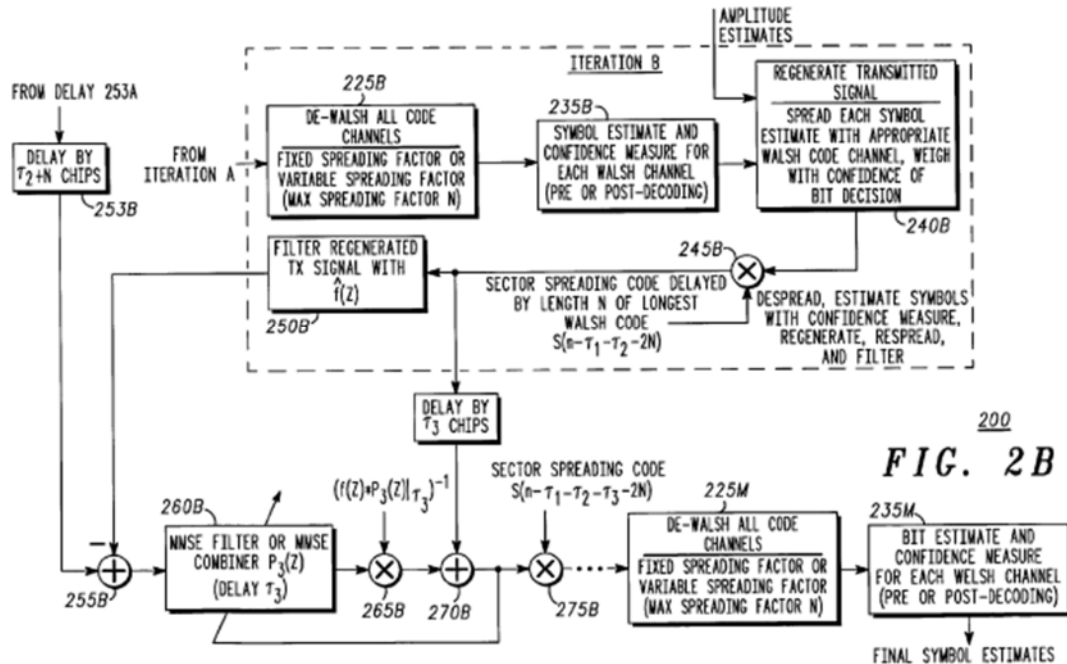
Ground 2 relies on combining primary reference *Frank* with *Zha*. But the supposed basis for combining these references—that they both use successive interference cancellation—is demonstrably incorrect: *Zha* uses successive interference cancellation, but every *Frank* embodiment relied on in the Petition explicitly uses the incompatible parallel interference cancellation approach. (*E.g.*, Pet. at 45-47; EX1006 at ¶¶ [0012]-[0015]). Indeed, the Petition does not even identify how the references could supposedly be combined, much less establish that this undisclosed combination was somehow obvious. Nor could it. Not only do the systems it attempts to combine (in some unidentified manner) use different incompatible interference cancellation approaches, they also use completely different observation intervals—where the *Zha* embodiments process signals using time-based intervals, *Frank* processes signal using code-base intervals. (*See, e.g.*, Pet. at 49; EX2001 at ¶72). The Petition does not acknowledge these material differences, nor does it try to explain how these incompatible approaches could somehow be combined.

Moreover, even if these references were (baselessly) somehow combined, they are still missing limitations required by every challenged claims.

Frank: For example, primary reference *Frank* iteratively estimates symbols, not amplitudes, and the Petition does not assert otherwise. It could not because Frank teaches an interference cancellation approach that calculates amplitude estimates just a single time. (EX2001 at ¶74).

Frank discloses two iterations of its system in figures 2A and 2B. (EX1006 at Figs. 2A and 2B).





(EX1006 at Figs. 2A and 2B).

In each of these figures, amplitude estimates are calculated in block 230. *Frank* explains that “[t]o provide appropriate transmitted signal reconstruction, amplitude estimates are made for each of the code channels following despreading, in block 230.” (EX1006 at ¶0029). In Fig. 2A these amplitude estimates are sent to block 240A and in Fig. 2B, which is the next iteration of *Frank*’s system, amplitude estimates are sent to block 240B.

Frank does not disclose passing these amplitude estimates back after an iteration. (EX2001 at ¶77). To the contrary, Figs. 2A and 2B show that there is no path in *Frank* to pass back any values to iteratively recalculate amplitude estimates. (EX2001 at ¶77).

Zha: Ground 2’s attempt to cure this deficiency through *Zha* fails because while *Zha* does iteratively calculate estimate amplitudes, it does not do so in the specific manners disclosed and claimed in the ’651 Patent. (EX2001 at ¶78).

As established above and explicitly described in the challenged claims, the inventive method and joint amplitude estimator include:

- a plurality of processors/filters computing individual amplitude estimates;
- processing those individual amplitude estimates to calculate new amplitude estimates;
- iteratively passing those new amplitude estimates back to the processors/filters for iterative processing until either a maximum number of iterations or a desired error rate is reached.

But *Zha* does not disclose any such plurality of processors or filters, nor does it disclose passing new amplitude estimates back to such a plurality of processors or filters for the claimed iterative processing, and the Petition does not assert otherwise. (*E.g.*, Pet. at 50-57; EX2001 at ¶80). Instead, the Petition concedes that *Zha* merely discloses an algorithm that successively calculates “averaged amplitude estimates.” (Pet. at 50-54; EX1010 at 744).

Zha describes a detector having multiple interference cancellation stages.” According to the Petition, in each stage after the first, *Zha*’s algorithm calculates an “averaged amplitude estimate” that corresponds to the claimed “new amplitude estimate.” But *Zha* does not disclose—and the Petition does not assert that *Zha* discloses—passing this average (the alleged new amplitude estimates) back to the processors or filters that calculate the individual amplitude estimates for iterative processing. (EX2001 at ¶81).

Accordingly, this key claimed concept is entirely missing from both *Frank* and *Zha*, and combining them does not and cannot result in the claim estimator or method. (EX2001 at ¶82).

V. Ground 1 Does Not Establish The Required Reasonable Likelihood of Success

Ground 1 does not provide the required reasonable likelihood of success because, contrary to the Petition’s unsupported, conclusory assertions, *Fuller* does not disclose the claimed iterative amplitude estimates.

A. The Challenged Claims Require Iterative Amplitude Estimates

Each challenged claims requires a number of iterative amplitude estimates, including:

- a plurality of processors/filters computing individual amplitude estimates (*e.g.*, claim 1 at 26:10-16 and claim 6 at 26:46-47, 26:50-54);
- processing those individual amplitude estimates to calculate new amplitude estimates (*e.g.*, claim 1 at 26:17-19 and claim 6 at 26:54-55);
- iteratively passing those new amplitude estimates back to the processors/filters for iterative processing until either a maximum number of iterations or a desired error rate is reached (*e.g.*, claim 1 at 26:19-22 and claim 6 at 26:56-58).

B. Fuller Discloses Successively Estimating Symbols, Not Amplitudes

But contrary to Ground 1, *Fuller* does not disclose any of these required iterative amplitude estimates. (EX2001 at ¶85). As established, *Fuller* not only fails to disclose these individual amplitude estimates, new amplitude estimates, and passing back of the new amplitude estimates, **Fuller fails to even mention amplitude at all.** (EX2001 at ¶85).

Ground 1 presents two *Fuller* arguments on these limitations, one under a time-based observation interval theory (Pet. at 35-37), and another under a code-based observation interval theory (Pet. at 37). Both are baseless.

Ground 1's Time-Based Observation Interval Theory: Recall that weighted symbols are provided to regeneration function 74, which “recreates [and outputs] estimates of the individual signals from the weighted symbols for each of the estimated users”:

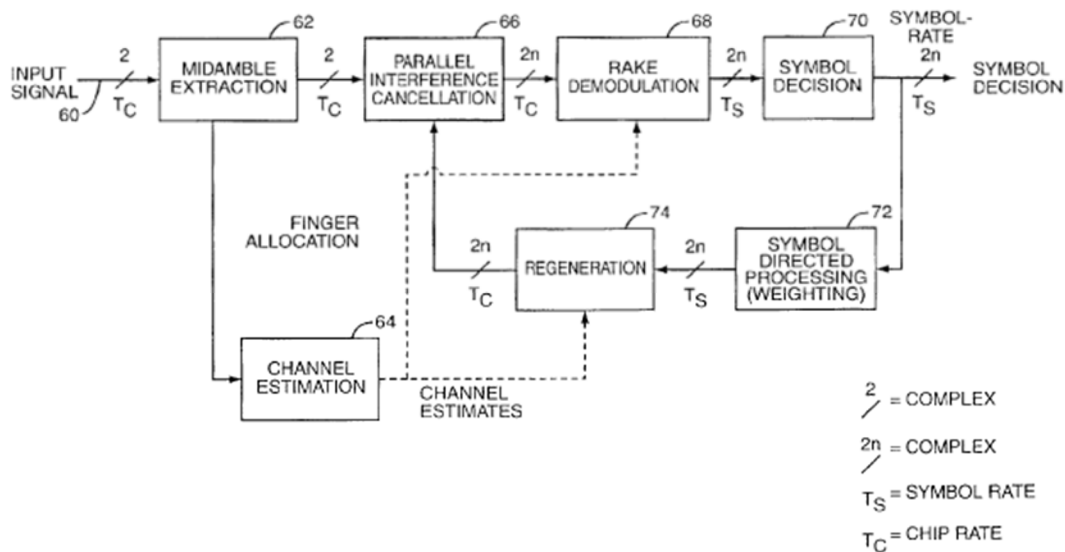


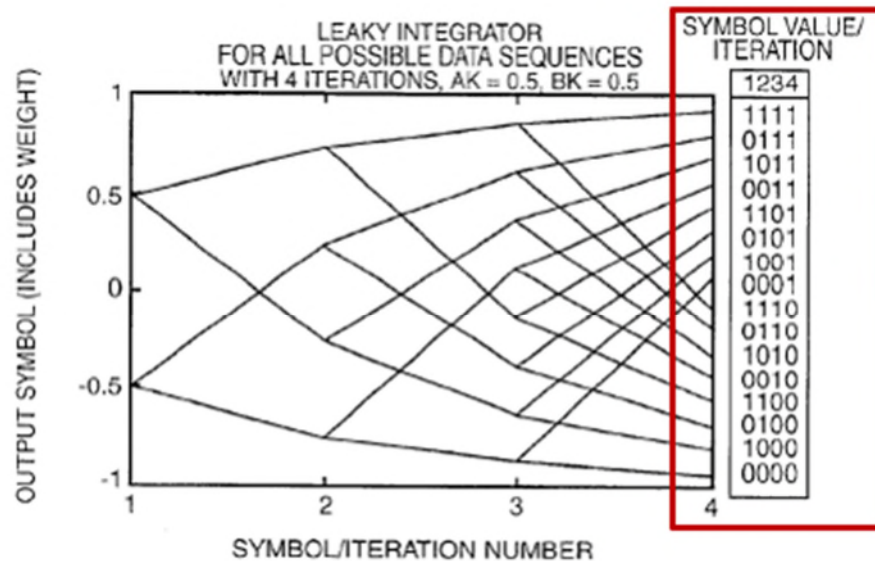
FIG. 2

(EX1004 at Fig. 2, 5:40-56).

For Ground 1's time-based interval theory, Petitioners assert that these estimates of the individual signals are the claimed “individual amplitude estimates.” (Pet. at 36). But Petitioners provide no basis whatsoever for this assertion, it just equates these two very different things (signals and amplitudes) in a parenthetical without any explanation, simply concluding that regeneration block 72 outputs ““estimates of the individual signals from the estimated symbols for

each of the estimated users’ (*i.e.*, **individual amplitude estimates**).” (Pet. at 36) (emphasis in original). But the Petition provides no basis for this incorrect assertion. There is no dispute that *Fuller* describes that the regeneration block 74 calculates and outputs **signal** estimates; *Fuller* does not describe regeneration block 74 as calculating individual **amplitude** estimates, nor does *Fuller* equate signal estimates with amplitude estimates. It could not reasonably do so because, as established above and not addressed by the Petition, signals and amplitudes are fundamentally different. (EX2001 at ¶88).

Ground 1’s time-based interval theory similarly asserts that *Fuller*’s symbol directed processing block 72 outputs the claimed “new amplitude estimates.” (Pet. at 35-36, 37). But this is again directly contrary to the express teaching of *Fuller*. (EX2001 at ¶89). *Fuller* explicitly describes that symbol directed processing block 72, which provides weighting “based on the consistency of previous estimates for the given symbol” and then calculates and outputs “weighted symbols based on [that] weighting and the [received] symbol estimate[s.]” (EX1004 at 5:32-39). Figure 8 illustrates these 4-bit symbols—1111, 0111, 1011, 0011, etc.—and a disclosed function for weighting them:



VI. Ground 2 Does Not Establish the Required Reasonable Likelihood of Success

Each challenged claim requires iteratively passing new amplitude estimates back to the claimed processors or filters for iterative processing until either a maximum number of iterations or a desired error rate is reached. (*E.g.*, claim 1 at 26:19-22 and claim 6 at 26:56-58). Because Ground 2's primary reference *Frank* admittedly does not teach this limitation (or iteratively calculating amplitude estimates at all), Ground 2 attempts to cure this deficiency by combining *Zha* with *Frank*. But *Zha* cannot save Ground 2 because (1) *Zha* also does not teach this limitation; and (2) the Petition does not establish it was obvious to combine *Frank* and *Zha* in the first place.

A. *Zha* Does Not Disclose Passing New Amplitude Estimates Back to Processors Or Filters

Claim 1 and its dependent claims require:

an amplitude estimation unit which processes said individual amplitude estimates and calculates new amplitude estimates, wherein said new amplitude estimates are iteratively passed back to said processing modules either a maximum number of iterations or a desired bit error rate have been reached.

(EX1001 at claim 1).

Claim 6 and its dependent claims similarly require:

applying said filter to said data stream for each said observation interval from said interference cancellation to produce individual amplitude estimates for each said observation interval;

computing new amplitude estimates using said individual amplitude estimates; and

passing said new amplitude estimates back to said filter for iterative processing until either a maximum number of iterations or a desired bit error rate have been reached.

(EX1001 at claim 6).

Zha does not disclose either of these passing back requirements because (1) *Zha* does not disclose any such plurality of processors or filters, and (2) *Zha* does not disclose passing new amplitude estimates back to such a plurality of processors or filters for the claimed iterative processing. (EX2001 at ¶96).

The Petition does not even assert otherwise. (*E.g.*, Pet. at 51-54, 55). Rather, the Petition concedes that *Zha* merely discloses an algorithm that successively calculates “averaged amplitude estimates.” (Pet. at 51-54; EX1010 at 744).

According to the Petition, *Zha* describes a detector having “multiple interference cancellation stages.” In each stage after the first, *Zha*’s algorithm calculates an “averaged amplitude estimate” that corresponds to the claimed “new amplitude estimate.” (Pet. at 51-54, 55-56). But *Zha* does not disclose—and the Petition does not assert that *Zha* discloses—passing this average (the alleged new amplitude estimates) back to processors or filters that calculate the individual amplitude estimates for iterative processing. (EX2001 at ¶98). Accordingly, *Zha*

cannot remedy *Frank*'s deficiency on these limitations because *Zha* suffers from the same deficiency.

B. The Petition Does Not Establish That It Was Obvious To Combine *Zha* and *Frank*

The Petition fails to establish a reasonable likelihood of proving that it was obvious to combine *Frank* and *Zha*.

First, the Petition's combination is entirely premised on combining *Zha*'s successive interference cancellation with *Frank*'s successive interference cancellation. (Pet. at 45-47). But all the *Frank* figures and embodiments relied by the Petition use parallel interference cancellation, not successive interference cancellation:

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] **FIG. 1** is a block diagram illustrating a preferred receiver structure for MMSE equalization with parallel interference cancellation in accordance with the present invention.

[0013] **FIG. 2** (divided into **FIGS. 2A and 2B**) is a combined block and flow diagram illustrating, in greater detail, a preferred receiver structure and method for MMSE equalization with parallel interference cancellation in accordance with the present invention.

[0014] **FIG. 3** is a block diagram illustrating an apparatus embodiment of the preferred receiver structure for MMSE equalization with parallel interference cancellation in accordance with the present invention.

[0015] **FIG. 4** (divided into **FIGS. 4A and 4B**) is a flow diagram illustrating a method embodiment for MMSE equalization with parallel interference cancellation in accordance with the present invention.

(EX1006 at ¶¶ [0012]-[0015]; EX2001 at ¶100).

And the Petition does not explain how a POSITA would combine the improved amplitude averaging algorithm designed for *Zha*'s successive interference cancellation with *Frank*'s parallel interference cancellation or how *Zha*'s successive interference cancellation teachings could be applied to *Frank*'s parallel interference cancellation. (See Pet. at 45-47). And for good reason—as established above but ignored by the Petition, a POSITA would understand that successive interference cancellation and parallel interference cancellation are fundamentally different cancellation techniques, and the two techniques cannot simply be mixed and matched as the Petition proposes. (EX2001 at ¶101).

Second, the *Frank* and *Zha* embodiments that Petitioners seek to combine are incompatible for additional reasons. For example, as the Petition describes, they use completely different observation intervals—where the *Zha* embodiments process signals using time-based intervals, *Frank* processes signal using code-base intervals. (See, e.g., Pet. at 49; EX2001 at ¶102). The Petition does not acknowledge these material differences, nor does it try to explain how these incompatible approaches could somehow be combined.

Nor could the Petition reasonably do so. Not only are these different intervals incompatible, but *Zha*'s time-based amplitude averaging algorithm

(which the Petition vaguely proposes somehow using with *Frank*) requires that associated time delays are exactly known at the receiver. *Zha* states “[i]nitially, we assume that the time delays are exactly known at the receiver.” (EX1010 at 743).

$$\mathbf{d}_k(i) = \delta_k \mathbf{c}_k(p_k + 1, i) + (1 - \delta_k) \mathbf{c}_k(p_k, i). \quad (5)$$

(EX1010 at 744). This known time delay— $\mathbf{d}_k(i)$ —is used in the amplitude averaging algorithm relied on by the Petition:

$$\bar{\mathbf{A}}_k^{v+1} = \frac{1}{M} \sum_{i=1}^M \text{abs} \left(\text{Re} \left(e^{-j\theta_k} (\mathbf{d}_k(i))^H \bar{\mathbf{r}}_k^{v+1} \right) \right)$$

(Pet. at 53-54, 55; EX1010 at 744).

But *Zha* does not disclose how to achieve such required known time delays, nor does *Frank* disclose that time delays can be known in its disclosed wireless system as required by *Zha*’s amplitude averaging algorithm. (See EX1006; EX2001 at ¶104). The Petition does not explain how a POSITA would use an amplitude averaging algorithm that requires the time delays to be exactly known in a system where the time delays are not known. (See Pet. at 45-47).

VII. The *Fintiv* Factors Heavily Favor Discretionary Denial of Institution Under § 314(A)

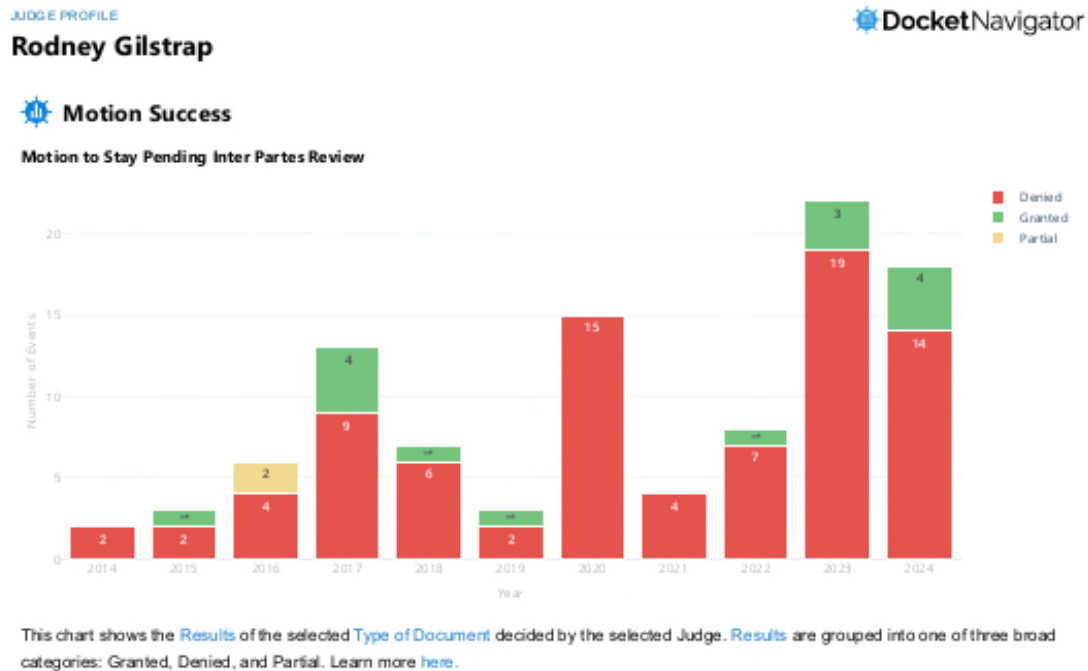
Patent Owner is currently asserting the challenged patent against the parent company of Petitioners Lenovo (United States) Inc. and Motorola Mobility LLC in

the Eastern District of Texas, which has set a trial date for January 5, 2026, which is over five months earlier than a final written decision in the requested IPR.

Accordingly (and as established below), the *Fintiv* factors heavily weigh in favor of discretionary denial. In an attempt to characterize every factor as either neutral or favoring institution, the Petition is rife with conclusory statements and misapplications of controlling PTAB precedent. Under the appropriate legal standards—and considering the totality of the record evidence—the *Fintiv* factors support discretionary denial of institution. PTAB’s recent rescission of the Guidance Memo only strengthens this support for a *Fintiv* discretionary denial.

A. Factor 1: Whether a stay exists or is likely to be granted if a proceeding is instituted

Petitioners admit that it has not sought a stay in the district court, and Patent Owner represents that it will not seek nor agree to a stay. Further, here other evidence exists that makes stay very unlikely. Over the past ten years, the presiding district court judge has denied over 83% of motions to stay pending *inter partes* review.



EX2007. Because the Petition does not even go as far to suggest that Petitioners will seek a stay, and because Judge Gilstrap has denied the overwhelming majority of motions to stay pending *inter partes* review, this factor weighs in favor of discretionary denial.

B. Factor 2: Proximity of the court’s trial date to the Board’s projected statutory deadline

Here, any final written decision would issue ***over five months*** after the trial date and a decision on the validity defenses presented therein. If the court’s trial date is earlier than the expected statutory deadline for the IPR’s final written decision, “the Board generally has weighed this fact in favor of exercising authority to deny institution.” *Fintiv*, IPR2020-00019, Paper 11 at 9. The trial date

is set for January 5, 2026, while the statutory final written decision, if the IPR were instituted, would be June 18, 2026.

Petitioners’ suggestion that the PTAB should ignore this much earlier trial date in light of the Guidance Memo is improper because PTAB has withdrawn that Guidance Memo. *See* Pet. at 63. Moreover, there was no basis in the first place for Petitioners’ speculation that “additional delays are likely.” *See* Pet. at 64.

To the contrary, the evidence of record strongly supports the conclusion that trial will occur months before any final written decision would issue. According to the most recent statistics, the time to trial for the Eastern District of Texas is 21.6 months—squarely in line with the approximately 21-month schedule set by the district court. EX2008 (June 30, 2024 Federal District Court Case Management Statistics); EX2009 (Docket in *Collision Communications, Inc. v. Lenovo Group Ltd.*, No. 23-cv-00594 (E.D. Tex.) showing complaint filing date of Dec. 12, 2023); *see also Comcast Cable Communications, LLC v. Touchstream Technologies, Inc.*, IPR2024-00324, Paper 13 at 10 (PTAB July 24, 2024) (“Patent Owner’s representation of median time-to-trial of twenty-one months is consistent with the most recent available data from the judiciary. . . . We find that the related district court litigation’s trial date and the district court’s median time-to-trial favor denial.”) (discretionary denial granted upon rehearing); *Apple Inc. v. Fintiv, Inc.*,

IPR2020-00019, Paper 11 at 9 (PTAB Mar. 20, 2020) (precedential) (“If the court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution under *NHK*.”).

Because any final written decision would issue substantially later than the district court trial, this factor weighs heavily in favor of discretionary denial. See *Verizon Bus. Network Servs. LLC v. Huawei Techs. Co. Ltd.*, IPR2020-01292, Paper 13 at 12 (PTAB Jan. 25, 2021) (trial date seven to eight months before expected final written decision deadline weighs in favor of discretionary denial).

C. Factor 3: Investment in the parallel proceeding by the court and parties

At best for Petitioners, this factor favors denial of institution or is neutral. Petitioners fail to evaluate the investment by both the court ***and*** the parties at the relevant time—at the deadline for institution. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 9-10 (PTAB Mar. 20, 2020) (precedential). By the June 18, 2025 deadline for institution, the parties will have invested substantial resources in the following case events:

- Completion and service of invalidity contentions
- Completion of claim construction discovery
- Substantial completion of document production

- Exchange of privilege logs
- Filing of technical tutorials for claim construction
- Filing of opening claim construction brief
- Filing of responsive claim construction brief

EX2010 (Scheduling Order). Therefore, this case, particularly at the time of institution, will hardly be in the “very early stages of litigation” and discovery will not be in its preliminary stages. *See* Pet. at 64. The Parties will have expended significant resources on the district court litigation by the deadline for institution, which favors denial of institution. Finally, filing the Petitions five months after receiving Patent Owner’s infringement contentions and notice of asserted claims weighs in favor of denial of institution. *Comcast*, IPR2024-00324, Paper 13 at 15.

D. Factor 4: Overlap between issues raised in the petition and in the parallel proceeding

The Petition challenges the same claims as are asserted in the district court. Due to the substantial overlap in challenged claims and the similarity of Petitioners’ claims and theories, this factor weighs in favor of discretionary denial. *Fintiv*, IPR2020-00019, Paper 11 at 12-13 (“[I]f a petition involves the same prior art challenges but challenges claims in addition to those that are challenged in the district court, it may still be inefficient to proceed because the district court may

resolve validity of enough overlapping claims to resolve key issues in the petition.”).

Petitioners’ suggestion that this factor weighs in favor of institution if the Board addresses the overlapping validity issues before they are resolved by the district court is unfounded because the district court will resolve any overlapping validity issues several months before the Board issues its final written decision. *See* Pet. at 65. Institution will not thus preserve judicial resources; it will waste them by allowing Petitioners to challenge the same claims first in the district court and then again before the PTAB. The Board can save resources by discretionarily denying this petition and allowing the district court to adjudicate the validity of these claims under the same art nearly six months *before* the PTAB.

E. Factor 5: Whether the petitioner and the defendant in the parallel proceeding are the same party

Petitioners effectively concede that the parties materially overlap here. Two of the Petitioners (Lenovo and Motorola) admittedly manufacture the products accused of infringement in this district court and are subsidiaries of the named defendant. The products of the third petitioner (Intel) are likewise accused of infringement in the district court action. *See* Pet. at 65. Accordingly, this factor is not neutral as Petitioners argue without explanation, but instead favors denial. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1,

2020) (precedential as to § II.A); *see also Comcast*, IPR2024-00324, Paper 13 at 15.

F. Factor 6: Other circumstances that impact the Board’s exercise of discretion, including the merits / Compelling Merits

No other considerations warrant discretionary denial. As discussed above, Petitioners’ case does not even meet the “reasonable likelihood” standard for the statutory institution threshold. The Petition thus falls far short of showing “compelling merits.” *See* PTAB Director’s 2022 *Fintiv* Memorandum, 4 (“Compelling, 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. . . . Where the information presented at the institution stage is merely sufficient to meet the statutory institution threshold, the PTAB has the authority, where warranted, to exercise discretion to deny institution in view of the other *Fintiv* factors.”). Accordingly, because the Petition fails to show compelling merits, and the *Fintiv* factors heavily support discretionary denial, the Board should deny institution.

VIII. Conclusion

For the foregoing reasons, the Board should deny institution of the Petition.

Dated: March 18, 2025

Respectfully submitted,

/William A. Meunier/

William A. Meunier (Reg. No. 41,193)

Michael T. Renaud (Reg. No. 44,299)

Kevin C. Amendt (Reg. No. 69,361)

MINTZ, LEVIN, COHN, FERRIS,

GLOVSKY AND POPEO, P.C.

One Financial Center

Boston, MA 02111

Telephone: 617-542-6000

Facsimile: 617-542-2241

E-mails: WAMeunier@mintz.com;

MTRenaud@mintz.com;

KCAmendt@mintz.com

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Patent Owner hereby certifies, in reliance on the word count of the word-processing system (Microsoft Office Word 2010) used to prepare this preliminary response, that the number of words in this paper is 7,948. This word count excludes the tables of contents, tables of authorities, certificate of word count, certificate of service, and table of exhibits.

Dated: March 18, 2025

/William A. Meunier/

William A. Meunier (Reg. No. 41,193)

CERTIFICATE OF SERVICE

I certify that copies of Patent Owner's Preliminary Response and accompanying Collision Exhibits 2001 through 2011 are being served by electronic mail on the following counsel of record:

Vincent Y. Ling (Reg. No. 67,145)
vincent.ling@mto.com
MUNGER, TOLLES & OLSON LLP
350 South Grand Ave., 50th Floor
Los Angeles, CA 90071
Tel: (213) 683-9100
Fax: (213) 687-3702

Heather Takahashi (Reg. No. 78,418)
Adam Kwon (Reg. No. 75,653)
Zach Briers (pro hac vice pending)
Peter Gratzinger (pro hac vice pending)
MUNGER, TOLLES & OLSON LLP
350 South Grand Ave., 50th Floor
Los Angeles, CA 90071
Tel: (213) 683-9100
Fax: (213) 687-3702
lenovo-collision@mto.com

Timothy Riffe, Reg. No. 43,881
Jennifer Huang, Reg. No. 64,297
Whitney Reichel, Reg. No. 59,173
Lawrence Jarvis, Reg. No. 74,636
Fish & Richardson P.C.
60 South Sixth Street, Suite 3200
Minneapolis, MN 55402
Tel: 202-783-5070
Fax: 877-769-7945
PTABInbound@fr.com
IPR55851-0027IP1@fr.com

Dated: March 18, 2025

/William A. Meunier/

William A. Meunier (Reg. No. 41,193)