

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC, CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, T-MOBILE USA, INC., AT&T SERVICES, INC., NOKIA OF AMERICA, CORP.,
AND ERICSSON INC.

Petitioners

v.

KT CORPORATION (Patent Owner) and
PEGASUS WIRELESS INNOVATION LLC (Exclusive Licensee)

Case No. IPR2025-00291
Patent 10,594,460

**PETITIONERS' OPPOSITION TO PATENT OWNER'S
REQUEST FOR DISCRETIONARY DENIAL**

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. ANALYSIS.....	3
A. <i>Fintiv</i> is Inapplicable and Efficiency and Fairness Weigh in Favor of Institution.....	3
B. The Strength of the Petition Weighs in Favor of Institution.....	6
1. Shen Discloses or Renders Obvious Transmitting Frequency Hopping Configuration Information through one Transmission BWP.....	6
2. Zhang Discloses or Renders Obvious Transmitting Frequency Hopping Configuration Information through one Transmission BWP.....	9
3. Yin Discloses Frequency Hopping Configuration Information.....	10
III. CONCLUSION.....	13
APPENDIX A - LIST OF EXHIBITS	
CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. §42.24	
CERTIFICATE OF SERVICE	

TABLE OF AUTHORITIES

Cases	Page(s)
<i>Apple Inc. v. Fintiv, Inc.</i> , IPR2020-00019, Paper 11 (P.T.A.B. Mar. 20, 2020).....	1, 2, 3, 5
<i>Epic Games, Inc. v. Ingenioshare, LLC</i> , IPR2022-00295, Paper 11 (P.T.A.B. Jun. 7, 2022).....	3
<i>ETN Capital, LLC d/b/a Beech Lane v. FBA Operating Co.</i> , IPR2024-01445, Paper 14 (P.T.A.B. Feb. 28, 2025).....	3
<i>The Data Company Technologies Inc. v. Bright Data Ltd.</i> , IPR2022-00135, Paper 12 (P.T.A.B. Jun. 1, 2022)	3
 Statutes	
35 U.S.C. §314(a)	5

I. INTRODUCTION

Pursuant to the Director's Memorandum issued on March 26, 2025, Petitioners file this opposition to Patent Owner's Request For Discretionary Denial, Paper 12 ("Request"). Patent Owner ("PO") has requested discretionary denial of institution of the Petition for *inter partes* review of the '460 Patent on the basis that "each *Fintiv* factor weighs in favor of the Board exercising its discretion to deny institution" in view of the related district court litigation, *Pegasus Wireless Innovation LLC v. Cellco Partnership d/b/a Verizon Wireless et al.*, No. 2:23-cv-00640-JRG (E.D. Tex.) ("Related Litigation"). Request, 1. ***The '460 Patent has been dismissed from the Related Litigation.*** EX1036. *Fintiv* is not applicable given that there is no parallel litigation involving the same patent challenged in this IPR. PO's Request does not address this fact.

In addition to dropping the '460 Patent, PO has also dropped three additional patents at issue in the Related Litigation, along with numerous claims of the remaining patents. This fact, coupled with the absence of system prior art contentions and the planned submission of *Sotera* stipulations with respect to all remaining patents at issue in the Related Litigation, render the PTAB the most judicially efficient forum for adjudicating all prior art invalidity issues.

PO's Request also demonstrates the strength of Petitioners' unpatentability challenges because the Request resorts to mischaracterizing and/or ignoring

arguments in the Petition. As discussed in greater detail below, PO ignores the disclosures of the applied references by arguing that the prior art does not teach the transmission of frequency hopping configuration information through “one transmission BWP.” PO cannot dispute the pervasive teachings of frequency hopping schemes in the prior art. PO resorts to ignoring the express disclosures of the references showing the straightforward way that this information is transmitted in the manner claimed. As explained in the Petition, Shen (EX1013) discloses transmitting frequency hopping configuration information in an identical manner to the ’460 Patent. Zhang (EX1020) discloses transmitting frequency hopping configuration information through “one BWP resource,” which a POSITA would understand to be “one transmission BWP.” Yin (EX1021) discloses a control channel frequency hopping implantation that is entirely consistent with the claims, and which would readily have been expanded to data channels as well. Each of the invalidity grounds in the Petition anticipate or render obvious the claimed frequency hopping implementations.

This Opposition demonstrates that the *Fintiv* factors do not apply here, and in view of considerations of fairness and efficiency, coupled with the strength of the grounds set forth in the Petition, discretionary denial is not warranted.

Accordingly, Petitioners request that the Board deny PO’s Request and grant the Petition to institute *inter partes* review of the ’460 Patent.

II. ANALYSIS

A. *Fintiv* is Inapplicable and Efficiency and Fairness Weigh in Favor of Institution

PO's Request focuses on a *Fintiv* analysis, which examines factors relating to “whether efficiency, fairness, and the merits support the exercise of authority to deny institution *in view of an earlier trial date in the parallel proceeding.*” *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5-6 (P.T.A.B. Mar. 20, 2020) (emphasis added). Here, the '460 Patent has been dismissed from the district court litigation without prejudice. EX1036. There is no parallel proceeding and therefore discretionary denial based on *Fintiv* no longer applies. *ETN Capital, LLC d/b/a Beech Lane v. FBA Operating Co.*, IPR2024-01445, Paper 14 at 11 (P.T.A.B. Feb. 28, 2025); *Epic Games, Inc. v. Ingenioshare, LLC*, IPR2022-00295, Paper 11 at 17 (P.T.A.B. Jun. 7, 2022); *The Data Company Technologies Inc. v. Bright Data Ltd.*, IPR2022-00135, Paper 12 at 10-11 (P.T.A.B. Jun. 1, 2022).

The PTAB's precedential *Fintiv*, *NHK*, and *Sotera* decisions addressed judicial efficiency concerns arising from assessing validity of the same patent in both the PTAB and district court. *See, e.g., Apple Inc. v. Fintiv, Inc.*, IPR202000019, Paper 11 at 8-11 (P.T.A.B. Mar. 20, 2020) (analysis focused on “the challenged patent”, “the patent at issue in the petition”, overlap of the “same or substantially the same claims” of the patent). Indeed, the Consolidated Trial Practice Guide explains that *NHK-Fintiv* denials focus on “events in other proceedings related to the same

patent”. PTAB Consolidated Trial Practice Guide (Nov. 2019) at p. 58 (emphasis added). Since the parties have agreed to dismiss the ’460 Patent from the related litigation, the “same patent” is not at issue in the related litigation and this IPR, and discretionary denial is unwarranted.

Nonetheless, despite the absence of any parallel proceeding, PO’s Request urges that discretionary denial is somehow appropriate.¹ To the extent PO suggests that its decision to dismiss the ’460 Patent from the district court litigation indicates the ’460 Patent to be of less importance such that resources should not be spent on it, Petitioners are unaware of any Patent Office guidance that the “importance” of a patent should be considered a factor relevant to whether the Board should exercise its discretionary denial authority. Moreover, if the ’460 Patent indeed is of less importance, then that fact would weigh against the Board exercising its discretionary denial authority. By exercising its discretion in such a manner, the Board would be shirking its responsibility to Petitioners who are seeking its assistance in cancelling

¹ Petitioners reserve the right to challenge the March 26, 2025 Interim Processes for PTAB Workload Management at least because it is legally invalid as (1) exceeding the Director’s authority, (2) arbitrary and capricious, and (3) adopted without notice-and-comment rulemaking.

the weak, allegedly less important patent claims that PO nonetheless asserted and that Petitioners had been forced to defend against. Moreover, PO has not offered Petitioners a covenant not to sue.

Although *Fintiv* does not apply, efficiency and fairness concerns here nonetheless weigh in favor of the Board denying PO's Request. As it stands, with the '460 Patent dismissed from the Related Litigation without prejudice, the most expedient path Petitioners have to address the validity of the asserted claims is to seek the Board's assistance. Moreover, this is the only opportunity that Petitioners will have to challenge the '460 Patent in an IPR proceeding because the one-year statutory bar for challenging the '460 Patent through an IPR has passed. As such, Petitioners will have no other opportunity to call upon the Board's assistance, yet PO may still assert the '460 Patent against Petitioners in future litigation given that the dismissal was without prejudice (PO has not offered Petitioners a covenant not to sue, as noted above). Discretionary denial would be unfair since PO may once again assert the '460 Patent against Petitioners in future litigation, yet Petitioners are barred from challenging the validity of the '460 Patent in this forum. Discretionary denial would allow patent owners to assert a patent to trigger the statutory bar and move for dismissal only to reassert the patent, leaving petitioners no recourse at the PTAB. This cannot be the intended framework under Section 314(a).

Indeed, instituting an IPR now promotes judicial efficiency, fairness, and patent quality. Given the possibility of future litigation involving the '460 Patent, and the fact that PO has not granted Petitioners a covenant not to sue, efficiency considerations counsel that the Board should address the validity of the '460 Patent now as part of the overarching dispute between the parties.

Given the Board's expressed goals of efficiency, fairness and the desire to root out weak patents, the Board should deny PO's Request.

B. The Strength of the Petition Weighs in Favor of Institution

Moreover, the Petition presents compelling evidence of invalidity. PO challenges the Petition's analysis of the claimed step of receiving frequency hopping configuration information for a UL control channel and a UL data channel transmitted through one transmission BWP. As detailed below and explained in the Petition, all three primary references—Shen (EX1013), Zhang (EX1020), and Yin (EX1021)—disclose or render obvious this claim element.

1. Shen Discloses or Renders Obvious Transmitting Frequency Hopping Configuration Information through one Transmission BWP

Element [1.2] of claim 1 requires “receiving, from the BS, frequency hopping configuration information for a UL control channel and a UL data channel transmitted through one transmission BWP of the BWP set.”

The Petition explains that Shen discloses frequency hopping configuration information, i.e., “at least one frequency domain displacement.” Pet., 25 (citing EX1013 at 6:17-29). The frequency domain displacement information is provided for the physical channel, including both uplink (UL) control and data channels. *Id.* (citing EX1013 at 5:19-31). The frequency domain displacement information is transmitted through one transmission BWP of a BWP set, namely, the “activated BWP.” *Id.* (citing EX1013 at 13:29-34). PO does not dispute that Shen discloses transmitting frequency hopping configuration information, or that the configuration information transmission includes both UL control channel and UL data channel configuration information. PO solely disputes whether Shen’s frequency hopping configuration information is transmitted through “one transmission BWP” of the BWP set. PO’s argument fails to address the evidence provided in the Petition, and is therefore unfounded for multiple reasons.

First, as explained in the Petition, Shen discloses transmitting the frequency hopping configuration information for UL control/data channels through one transmission BWP. Pet., 25 (citing EX1013, 4:14-22, 5:19-31, 6:20-37) and 27 (citing EX1013, 5:26-28; 13:21-36). A POSITA would have understood that Shen’s transmission BWP (i.e., Shen’s “activated BWP”) is configured by the BWP configuration information (information used to configure the BWP) and the frequency hopping configuration information (i.e., information transmitted in the

physical channel of the BWP, such as Shen's "frequency domain displacement" information). Pet., 27 (citing EX1013 13:27-36 and Fig. 1B).

Shen discloses that downlink control information (DCI) containing the frequency hopping configuration information for the UL data/control channels is transmitted via a physical channel (e.g. the physical downlink control channel (PDCCH)) configured for each BWP. Pet., 26-27 (citing EX1013, 5:21-37, 6:17-22). Thus, the frequency hopping configuration information in the DCI is transmitted through one transmission BWP in order to "indicate an activated BWP." *Id.* PO lacks any basis in the record to assert that transmitting the frequency hopping configuration information on a physical channel within the activated BWP is different from transmitting through one transmission BWP.

Second, Shen's disclosure of transmitting UL control channel and UL data channel frequency hopping configuration information is identical to the disclosure of the '460 Patent. As explained in the Petition, Shen teaches that frequency hopping configuration information can be transmitted using "high-level signaling" such as "radio resource control (RRC) signaling." Pet., 26 (citing EX1013, 5:19-37, 6:9-22). This is exactly how the '460 Patent teaches transmitting its own frequency hopping configuration information: "The BWP configuration information and the frequency hopping configuration information may be indicated by the BS through higher layer signaling (e.g., RRC signaling)." *Id.* (citing EX1001, 15:8-10). These identical

disclosures demonstrate a POSITA would understand Shen as disclosing the transmission of frequency hopping configuration information through one transmission BWP in a manner satisfying element [1.2].

2. Zhang Discloses or Renders Obvious Transmitting Frequency Hopping Configuration Information through one Transmission BWP

Like Shen, the Petition explains that Zhang discloses frequency hopping configuration information, e.g., “resource allocation of ... frequency hopping.” Pet., 45 (citing EX1020, ¶[224]). The frequency hopping resource allocation information is transmitted through one “BWP resource” of a BWP set. *Id.* (citing EX1020, ¶¶[0010-12]; [0020-21]).

As with Shen, PO disputes whether Zhang’s frequency hopping configuration information is transmitted through “one transmission BWP” of the BWP set. Despite acknowledging that Zhang discloses transmitting resource allocation information through “a BWP resource,” PO argues that this “BWP resource” is not the same as a “transmission BWP,” and that Zhang never “breaks down” the BWP resource into “individual BWPs.” But this argument misses the point. The record makes clear that a POSITA would understand Zhang’s disclosure of transmitting “intra-BWP resource indication information” through “a BWP resource” to mean transmitting such information through “one transmission BWP.” Pet., 46 (citing EX1020, ¶[0231]; EX1031, ¶¶[239-242]). Zhang’s use of “intra”-BWP plainly

indicates to a POSITA that the resource indication information is provided “within” one transmission BWP. Put another way, Zhang’s disclosure of resources indications for “the BWP resource” indicates to a POSITA, or at the very least renders obvious, the use of one BWP to transmit the identified resource allocation information. *Id.*

PO goes on to argue that Zhang’s transmission of frequency hopping configuration information does not occur for “both Zhang’s UL data channel and UL control channel.” PO is mistaken. As explained in the Petition, Zhang’s transmission of resource allocation for frequency hopping (e.g., Zhang’s frequency hopping configuration information) is performed for Zhang’s UL grant, which includes UL control and data channels. Pet., 45 (citing EX1020, ¶[0224]). The intra-BWP resource indication information indicates the BWP resources within the BWP, and a POSITA would understand that those resources include a data channel and a control channel for each BWP. Pet., 47 (citing EX1020, ¶[0262]; EX1031, ¶245-247). Thus, a POSITA would understand Zhang to disclose transmitting/receiving frequency hopping configuration information for both a UL control channel and a UL data channel.

3. Yin Discloses Frequency Hopping Configuration Information

PO does not dispute that Yin discloses frequency hopping configuration information transmitted through one transmission BWP of the BWP set. Instead,

PO contends that, despite Yin's disclosure of transmitting frequency hopping configuration information for a UL control channel, it would not have been obvious to transmit the same frequency hopping configuration information for a UL data channel. PO's arguments would require the Board to ignore the detailed explanation in the Petition supporting such an obvious expansion of functionality already disclosed by Yin.

PO does not dispute that "Yin discloses receiving, from the BS, frequency hopping configuration information for a UL control channel...." Pet., 56 (citing EX1021, ¶[0112]). Nor does PO dispute that the secondary references, TS 36.211 and TS 36.213, disclose frequency hopping for a UL data channel. Pet., 56 (citing EX1024, §5.3.4, p.22; EX1025, §8.4, pp.114-115). Inasmuch as Yin discloses frequency hopping for a UL control channel, and TS 36.211 and TS 36.213 provide a reason to implement frequency hopping for a UL data channel, a POSITA would require no further motivation or guidance to expand Yin's control channel frequency hopping scheme to also provide data channel frequency hopping. Indeed, the Petition expressly explains that such a modification of Yin would be useful inasmuch as it would enable 5G-capable UEs to retain backwards compatibility in 4G LTE systems. Pet., 56 (citing EX1021, ¶[0048]; EX1022, ¶[0040]).

PO's complaints that the Petition "lack[s] an actual theory on how these improvements are achieved" ignore the express disclosures of the references. Indeed,

the Petition explains that modifying Yin to provide for data channel frequency hopping can be performed “in exactly the manner contemplated by Yin” for control channel frequency hopping. Pet., 57. The evidence of record confirms that, given the detailed implementation of frequency hopping provided in the references themselves, [s]uch a modification would have been routine, and according to known methods, to obtain predictable results with a high probability of success.” *Id.* (citing EX1031, ¶¶296-301). This explanation is not conclusory—it is premised on the detailed frequency hopping implementations already taught by the references themselves. Pet., 55 (citing EX1021, ¶¶[0042], [0085], [0213]; EX1024, §5.3.4, p.22; EX1025, §8.4, pp.114-115).

PO concludes by arguing that “there is no reason advanced in the Petition for why any frequency hopping information for a UL data channel to be transmitted along with frequency hopping configuration information for a UL control channel ‘through one transmission BWP of the BWP set.’” Once again, PO does not recognize that this reason derives from the express disclosure of Yin. There is no dispute that Yin discloses sending control channel frequency hopping configuration information through one transmission BWP. A POSITA, recognizing the advantages of implementing frequency hopping for a data channel (from at least the teachings of TS 36.211 and TS 36.213), would naturally implement data channel frequency hopping “in exactly the manner contemplated by Yin,” namely, by

sending data channel frequency hopping configuration information through one transmission BWP. Pet., 57 (citing EX1021, ¶¶[0004-0005], [0053-55]). This natural modification of Yin would have resulted in transmitting/receiving frequency hopping configuration information for both a UL control channel and a UL data channel transmitted through one transmission BWP of a BWP set.

III. CONCLUSION

For the foregoing reasons, the Director should deny PO's Request for discretionary denial of institution.

Date: June 5, 2025

Respectfully submitted,

/Patrick C. Keane/

Patrick C. Keane, Esq.

Registration No. 32,858

BUCHANAN INGERSOLL & ROONEY PC

1737 King Street, Suite 500

Alexandria, Virginia 22314

Direct Telephone (703) 838-6522

Main Facsimile (703) 836-2021

patrick.keane@bipc.com

Counsel for Petitioner

APPENDIX A - LIST OF EXHIBITS

Exhibit No.	Description
1001	U.S. Patent No. 10,594,460, issued on March 17, 2020 (“the ’460 Patent”)
1013	Certified English Translation of PCT International Publication No. WO 2019/136597 (“Shen”)
1020	PCT International Publication No. WO 2018/203727, published on November 8, 2018 (“Zhang”)
1021	PCT International Publication No. WO 2018/129085, published on July 12, 2018 (“Yin”)
1022	U.S. Provisional Application No. 62/442,864, filed on January 5, 2017 (“Yin ’864”)
1024	Technical Specification, 3GPP TS 36.211 V11.6.0 (September 2014) (“TS 36.211”)
1025	Technical Specification, 3GPP TS 36.213 V11.6.0 (March 2014) (“TS 36.213”)
1031	Declaration of Mark Lanning
1036	Order dated May 19, 2025 [Dkt. 334] in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc., et al.</i> , Civ. Action No. 2:23-cv-00640 (E.D. Tex.)

CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. §42.24

Pursuant to Acting Director Stewart's March 26, 2025 Memorandum on Interim Processes for PTAB Workload Management, the undersigned certifies that the foregoing Opposition to Patent Owner's Brief Requesting Discretionary Denial of Institution totals 2,689 words, excluding the parts which are exempted by 37 C.F.R. §42.24.

Date: June 5, 2025

/Patrick C. Keane/
Patrick C. Keane, Esq.
Registration No. 32,858
BUCHANAN INGERSOLL & ROONEY PC
1737 King Street, Suite 500
Alexandria, Virginia 22314
Direct Telephone (703) 838-6522
Main Facsimile (703) 836-2021
patrick.keane@bipc.com
Counsel for Petitioner

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on this 5th day of June, 2025, a true and correct copy of the foregoing **PETITIONERS' OPPOSITION TO PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL** is being served via electronic mail upon counsel for Patent Owner as follows:

Wayne Helge
James Wilson
BUNSOW DE MORY LLP
whelge@bdiplaw.com
jwilson@bdiplaw.com
erobinson@bdiplaw.com

Date: June 5, 2025

/Patrick C. Keane/
Patrick C. Keane, Esq.
Registration No. 32,858
BUCHANAN INGERSOLL & ROONEY PC
1737 King Street, Suite 500
Alexandria, Virginia 22314
Direct Telephone (703) 838-6522
Main Facsimile (703) 836-2021
patrick.keane@bipc.com
Counsel for Petitioner