

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

Petitioners,

v.

KT CORPORATION (PATENT OWNER) AND PEGASUS WIRELESS
INNOVATION LLC (EXCLUSIVE LICENSEE),
Patent Owner.

U.S. PATENT NO. 11,405,942

Title: METHOD AND APPARATUS FOR TRANSMITTING AND
RECEIVING DOWNLINK SIGNAL IN NEXT GENERATION WIRELESS
NETWORK

Inter Partes Review No.: IPR2025-00317

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

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Petitioners' Exhibit List

<i>Exhibit #</i>	<i>Description</i>
1001	U.S. Patent No. 11,405,942 (the "'942 Patent")
1002	Select portions of prosecution history of the '942 Patent ("File History")
1003	Declaration of Petitioners' Expert ("Lanning Declaration")
1004	U.S. Publication No. 2017/0223687 A1 (" <i>Kuchibhotla</i> "), published August 3, 2017
1005	U.S. Publication No. 2016/0234857 A1 (" <i>Chen</i> "), published August 11, 2016
1006	3GPP TS 36.213 v8.8.0, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer procedures (Release 8), published September 2009
1007	3GPP TS 36.321 v8.7.0, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Medium Access Control (MAC) protocol specification, published September 2009
1008	3GPP TS 36.331 v8.7.0, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification (Release 8), published September 2009
1009	LTE in a Nutshell: The Physical Layer (White Paper), Telesystem Innovations Inc. (2010)
1010	U.S. Patent App. Pub. No. US 2019/0200235 A1 (" <i>Lyu</i> "), published June 27, 2019, and claiming priority to CN 201610654618.9 filed August 10, 2016
1011	U.S. Patent No. 10,397,938 B2 (" <i>Lee</i> "), issued August 27, 2019, and claiming priority to PCT/KR2015/01358 filed December 2, 2015
1012	U.S. Patent No. 8,995,925 B2 (" <i>Ekici</i> "), issued March 31, 2015
1013	U.S. Patent App. Pub. No. US 2007/0232308 A1 (" <i>Bergstrom</i> "), published October 4, 2007, published October 4, 2007
1014	U.S. Patent App. Pub. No. US 2013/0195100 A1 (" <i>Baker</i> "), published August 1, 2013

<i>Exhibit #</i>	<i>Description</i>
1015	U.S. Patent Publication No. 2018/0070341 A1 (“ <i>Islam</i> ”), published March 8, 2018, and claiming priority to September 2, 2016, September 16, 2016, and November 4, 2016
1016	3GPP TS 36.212 v8.7.0, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); Multiplexing and channel coding (Release 8), published May 2009
1017	Newton’s Telecom Dictionary, 30 th Edition. November 2016
1018	Mark R. Lanning’s CV.
1019	<i>Pegasus Wireless Innovation LLC. v. Verizon Communications Inc. et al.</i> , No. 2:23-cv-00640 (E.D. Tex) Dkt. 150
1020	<i>Pegasus Wireless Innovation LLC. v. Verizon Communications Inc. et al.</i> , No. 2:23-cv-00640 (E.D. Tex) Dkt. 68
1021	<i>Pegasus Wireless Innovation LLC. v. Verizon Communications Inc. et al.</i> , No. 2:23-cv-00640 (E.D. Tex) Dkt. 16
1022	<i>Pegasus Wireless Innovation LLC. v. Verizon Communications Inc. et al.</i> , No. 2:23-cv-00640 (E.D. Tex) Dkt. 178
1023	<i>Pegasus Wireless Innovation LLC. v. Verizon Communications Inc. et al.</i> , No. 2:23-cv-00640 (E.D. Tex) Dkt. 334

I. INTRODUCTION

Patent Owner (“PO”) has requested discretionary denial of institution of the Petition for *inter partes* review of the ’942 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”). Patent Owner’s Request For Discretionary Denial, Paper 12 (“Request”), 1. The Request does not address that the ’942 Patent has been dismissed from the Related Litigation. *Fintiv* is not applicable given that there is no parallel litigation involving the same patent challenged in this IPR.

In addition to dropping the ’942 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’s argument that the Petition fails to demonstrate the claimed “newly defined RNTI” is

incorrect and is reached only because PO ignores an entire section of the Petition.

PO's argument that the Petition fails to demonstrate that the claimed "newly defined RNTI" (i.e., marker-RNTI) is sent to the UE via UE-specific RRC signaling also ignores key analysis and citations in the Petition that demonstrate how the asserted Kuchibhotla prior art reference discloses this claim element.

This Opposition demonstrates that, although the *Fintiv* factors do not apply here, in light of considerations of fairness and efficiency, coupled with the strength of the grounds set forth in the Petition, discretionary denial is not warranted, and PO's Request should be denied.

Accordingly, Petitioners hereby respectfully request that the Board deny PO's Request and grant the Petition to institute *inter partes* review of the '942 Patent.

II. ANALYSIS

A. Efficiency and Fairness Weigh in Favor of Denial of the Request

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 '942 Patent has been dismissed from the district court litigation without prejudice. EX-1023. 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 ’942 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

¹ Petitioners reserve the right to challenge the March 26, 2025 Interim Processes

suggests that its decision to dismiss the '942 Patent from the district court litigation indicates the '942 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 '942 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 the weak, allegedly less important patent claims that PO nonetheless asserted and that Petitioners have 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 '942 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

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.

will have to challenge the '942 Patent in an IPR proceeding because the one-year statutory bar for challenging the '942 Patent through an IPR has passed. As such, Petitioners will have no other opportunity to call upon the Board's assistance, yet PO still can assert the '942 Patent against Petitioners in future litigation given that the dismissal was without prejudice. It would be unfair that PO can once again assert the '942 Patent against Petitioners in future litigation, but that Petitioners are barred from challenging the validity of the '942 Patent in this forum.

Further, instituting an IPR now is efficient. Given the possibility of future litigation involving the '942 Patent, efficiency considerations counsel that the Board should address the validity of the '942 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 Counsels Against Discretionary Denial

Moreover, the Petition presents compelling evidence of invalidity. PO challenges the Petition's analysis of a "newly defined RNTI" and that the "newly defined RNTI" is conveyed to user equipment ("UE") via "UE-specific RRC signaling." Request, 25-30. As detailed below, the Kuchibhotla reference (EX-1004) teaches these claim elements.

PO's assertion that the Petition fails to properly address these claim elements

is incorrect in light of the express disclosure of the prior art and effectively requires the Board to entirely ignore the evidence.

1. The Petition Demonstrates that Kuchibhotla Teaches the Claimed “Newly Defined RNTI.”

PO suggests that the Petition addressed “newly defined RNTI” (a limitation in element [1.4] in the Petition) in only a single paragraph. Request, 25-26. That suggestion is incorrect.

Element [1.4] of Claim 1 does not simply recite a “newly defined RNTI,” but requires that “the specific RNTI ... is a newly defined RNTI other than at least a cell-RNTI (C-RNTI).” EX-1001, 17:38-40. Element [1.1] of Claim 1 recites that the specific RNTI is “for DL preemption indication information.” EX-1001, 17:28-30. This additional limiting language is important to the Petition’s analysis of how Kuchibhotla’s disclosed “marker-RNTI” meets element [1.4]’s recitation of a “newly defined RNTI.” Yet PO does not address this language. PO also ignores that the Petition’s analysis of element [1.4] explicitly calls back to the analysis of element [1.1]. Pet., 50.

To that end, the Petition identifies that Kuchibhotla discloses that special RNTIs are assigned to the UE at call admission “*in addition* to the C-RNTI” and that one example of a special RNTI is a “special CRC mask” referred to as a “marker-RNTI.” Pet., 50 (citing to EX-1004, ¶¶84 and 47) (emphasis added). Kuchibhotla’s disclosure of the special marker-RNTI is consistent with the ’942

Patent's disclosure of "a newly defined RNTI." That is, the '942 Patent discloses that "the UE may perform monitoring by performing CRC scrambling of DL control information including DL preemption indication information using a C-RNTI or a newly defined RNTI." EX-1001, 11:6-12. As recited in Claim 1 and as described in the specification, a "newly defined RNTI" is an RNTI other than the C-RNTI. Kuchibhotla's special marker-RNTI meets this requirement.

Kuchibhotla's special marker-RNTI also serves the same function (i.e., monitoring for DL preemption indication information) as the claimed "newly defined RNTI," which the Petition demonstrates in the analysis of element [1.1].

Specifically, the Petition demonstrates that Kuchibhotla expressly discloses that a "marker" is "DL preemption indication information," because it serves the same notification purpose as the "DL preemption indication" described in the '942 Patent. Pet., 35-36, *citing* EX-1004, ¶82 ("a marker can be transmitted where the marker can indicate which RE's are used in the subframe for low latency transmission"); ¶87 (marker payload "identif[ies] Resource Block Groups (RBG's) punctured within the user's, such as the device's, allocation"); EX-1003 ¶125.

Kuchibhotla's marker thus serves the same notification purpose as the "DL preemption indication information" described in the '942 Patent. EX-1001, 2:51-55 ("The downlink preemption indication information includes information for indicating superposed radio resources where a radio resource for providing a first

service and a radio resource for providing a second service overlap each other.”); 8:17-19 (“The present disclosure introduces various embodiments for notifying information on punctured radio resources when radio resources are dynamically punctured.”); 10:29-33 (“it is necessary to inform if radio resources allocated for different services overlap each other or if one or more radio resources allocated to a service for sparsely generated traffic is allocated for other services”). Thus, *Kuchibhotla*’s marker is “*DL preemption indication information*.” Pet., 36; EX-1003 ¶126.

The Petition’s analysis of element [1.1], which Petitioner refers to in element [1.4], also demonstrates that *Kuchibhotla* expressly discloses an embodiment in which the UE uses a “special CRC mask” – i.e., the “marker-RNTI” – to monitor for the marker (“DL preemption indication information”). Pet., 40. For example, *Kuchibhotla* discloses:

If PDCCH is used for marker transmission, the marker transmission can be differentiated from other control channel transmissions by using a special CRC mask (e.g. marker-RNTI) for the marker transmissions.

Pet., 40; EX-1004, ¶84; FIG. 21. EX-1003 ¶134-135.

PO does not address any of these express disclosures in *Kuchibhotla*. PO also ignores the Petition’s analysis discussed above, which identifies and maps “newly defined RNTI other than at least a cell-RNTI (C-RNTI)” to *Kuchibhotla*’s express disclosures.

The Petition does not suffer from a failure of proof. PO simply ignores the proof.

2. The Petition Demonstrates that Kuchibhotla Discloses, or Alternatively Suggests, the Marker-RNTI is Conveyed to the UE via UE-Specific RRC Signaling.

PO asserts that the Petition fails to demonstrate that Kuchibhotla discloses or, alternatively, suggests the methodology for transmitting the marker-RNTI to the UE. This assertion also is incorrect. Here, again, PO ignores the express disclosures of Kuchibhotla that are analyzed in the Petition. Pet., 36-42.

For example, Kuchibhotla discloses that unique or special RNTIs can be assigned to a particular UE at call admission via dedicated mode (UE-specific) RRC signaling that configures the UE to monitor downlink control channels. EX-1004, ¶57; EX-1003 ¶¶127-128. A disclosed purpose of the special RNTIs sent via UE-specific RRC signaling is to monitor control channels “to determine, for example, the resource allocation ... for the corresponding low latency data.” EX-1004, ¶47, ¶62; EX-1003 ¶¶131-133.

In embodiments in which the marker is transmitted in a control channel to notify the UE of the resources used for low latency data, Kuchibhotla discloses that the special RNTI is a marker-RNTI. EX-1004, ¶84; FIG. 21. EX-1003 ¶¶134-135. The Petition explains that a POSITA understands from these disclosures that Kuchibhotla teaches that a UE is configured at call admission with special RNTIs

(particularly those related to monitoring PDCCH for low latency control information) via UE-specific RRC signaling. EX-1003 ¶136. Again, PO ignores these express disclosures.

The Petition's analysis for element [1.1] also included an alternative argument that a POSITA would have found it obvious to include the marker-RNTI in UE-specific RRC configuration messaging in light of Kuchibhotla's express teachings. Pet., 41-42. To that end, Kuchibhotla discloses that a special LL-RNTI is assigned to the UE so that the UE can monitor PDCCH to determine resource allocations for low latency data. Pet., 39-40; EX-1004, ¶47; EX-1003 ¶131-133. Kuchibhotla also discloses a specific embodiment in which another special RNTI (i.e., marker-RNTI) is used to monitor PDCCH for information (i.e., a marker) identifying low latency resource allocations. Pet., 40-41; EX-1004, ¶84; EX-1003 ¶137. In that specific embodiment, a marker is transmitted in PDCCH in a subframe $n+1$ to inform the UE that resources in a previous subframe n have been used for low latency data. Pet., 40, 51-53; EX-1004, ¶84, ¶131, FIG. 21; EX-1003 ¶¶168-172. Kuchibhotla explains that, in this embodiment, to reduce decoding latency, the marker is sent in the first few symbols in subframe $n+1$, e.g., the symbols in the control region. EX-1004, ¶84, FIG. 21. When the PDCCH in the control region is used, then the UE applies the special marker-RNTI to differentiate the marker from other control channel information. Pet. 40; EX-1004, ¶84; EX-

1003 ¶¶134-137. By using PDCCH to transmit the marker and the marker-RNTI to decode the marker, the UE can more quickly determine the resources in the previous subframe that have been used for low latency data. Pet., 41-42; EX-1004, ¶84; EX-1003 ¶138. Given this disclosed benefit of using a special marker-RNTI in this particular embodiment, a POSITA would have been motivated to include the marker-RNTI in the UE-specific RRC messaging that is used to configure the UE with special RNTIs for monitoring PDCCH for low latency control information. *Id.*

Rather than addressing Kuchibhotla's express disclosures or the Petition's analysis of these disclosures, PO instead focuses on embodiments in Kuchibhotla in which the marker is not sent in PDCCH. Request, 29-31. Here, PO argues that, because Kuchibhotla discloses embodiments in which the marker can be broadcast to multiple UEs, then a POSITA would understand that the marker-RNTI is common to many UEs and, as such, it would be more efficiently sent via a broadcast. Request, 30. First, the fact that the marker is common does not inform whether the marker-RNTI is sent via UE-specific signaling or broadcast signaling. Indeed, in the '942 Patent, the preemption marker is multicast, but the special RNTI for monitoring for a preemption notification is sent via UE-specific signaling. EX-1001, 17:28-31; 17:36-37.

Second, the disclosure that PO cites is not the embodiment in which the

marker-RNTI identified in the Petition is used. Kuchibhotla discloses numerous alternate embodiments for marker transmission. The marker can be sent in the data region; it can be sent in the same subframe as the preempted resources; it can be sent in a different subframe; it can be sent in PDCCH in the control region; it can be sent in PHICH in the control region; it can be sent in predefined or preconfigured symbols; it can be sent in predefined or preconfigured resource groups; it can be sent in every symbol configured for low latency transmission in a subframe; etc. EX-1004, FIG. 20, FIG. 21, FIG. 22, ¶46, ¶76, ¶83, ¶84, ¶85, ¶86, ¶92, ¶93.

However, Kuchibhotla discloses use of the marker-RNTI in the embodiment in which the marker is transmitted in PDCCH in a subframe subsequent to the subframe in which resources were reallocated to low latency data. EX-1004, FIG. 21, ¶84. In this embodiment, the marker is sent at the beginning of the subsequent subframe (i.e., in PDCCH) to reduce decoding latency; and the special marker-RNTI is used to differentiate the marker from other control information in PDCCH. EX-1004, ¶84. In other words, the marker-RNTI is used in this scenario because it allows the UE to more quickly determine that a low latency transmission has occurred in a previous subframe. In scenarios where the marker is sent in predefined locations, in the same subframe, or at the beginning of the low latency data, Kuchibhotla does not disclose use of the special marker-RNTI.

In short, the allegedly “overlooked” disclosures have no bearing on the analysis set forth in the Petition because they do not address the marker-RNTI, which is the element that is at issue.

III. Conclusion

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

Respectfully submitted,

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Dated: May 27, 2025

CERTIFICATION OF SERVICE ON PATENT OWNER

Pursuant to 37 C.F.R. §§42.6(e), 42.8(b)(4) and 42.105, the undersigned certifies that on May 27, 2025, a complete and entire copy of this **Petitioners' Opposition to Patent Owner's Request for Discretionary Denial** was served in its entirety via filing through the Patent Trial and Appeal Case Tracking System (P-TACTS), as well as by delivering copies via electronic mail to the following:

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24 *et seq.*, the undersigned certifies that this document complies with the type-volume limitations. This document contains 3544 words as calculated by the “Word Count” feature of Microsoft Word 2010, the word processing program used to create it.

Dated: May 27, 2025

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