

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.

PEGASUS WIRELESS INNOVATION LLC,
Patent Owner.

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

PATENT OWNER'S PRELIMINARY SUR-REPLY¹

¹ The Board terminated this matter on June 26, 2025. Patent Owner is filing this authorized sur-reply on its due date to complete the record.

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PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	Memorandum Opinion and Order in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex Dec. 11, 2024)
2002	Memorandum Opinion and Order in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex Dec. 23, 2024)
2003	Reserved
2004	Defendants' Preliminary Invalidity Contentions in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex May 17, 2024)
2005-2017	Reserved
2018	Comparison of Districts Within the Fifth Circuit — 12-Month Period Ending September 30, 2024 (available at https://www.uscourts.gov/sites/default/files/2025-02/fcms_na_distcomparison1231.2024.pdf)
2019-2049	Reserved
2050	Defendants' Amended Invalidity Contentions in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex November 1, 2024)
2051	Defendants' Amended Invalidity Contentions in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex December 23, 2024)
2052	Defendants' Motion for Leave to Amend Invalidity Contentions in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex. January 24, 2025)
2053	Appendices to Defendants' Amended Invalidity Contentions in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex November 1, 2024)
2054	Exhibits to Appendices of Defendants' Amended Invalidity Contentions in <i>Pegasus Wireless Innovation LLC v. Verizon</i>

	<i>Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex November 1, 2024)
2055	Exhibit E-12 to Appendix E of Defendants’ Amended Invalidity Contentions in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex December 23, 2024)
2056-2149	Reserved
2150	U.S. Pat. Pub. 2020/0336269 (“Shen counterpart”)
2151	U.S. Pat. Pub. 2020/0389204 (“Matsumura counterpart”)
2152-2202	Reserved
2203	Consolidation Order in <i>Pegasus Wireless Innovation LLC v. Verizon Communications Inc. et al.</i> , Nos. 2:23-cv-00640, 2:23-cv-00638, 2:23-cv-00639 (E.D. Tex Feb. 13, 2024)
2204	Fifth Amended Docket Control Order, issued April 14, 2025

This Preliminary Sur-Reply was authorized by the Board by email on June 2, 2025, and responds to Petitioners' Preliminary Reply ("Reply").

I. PETITIONER'S NEW THEORY FOR SHEN SHOULD BE DISREGARDED

While it is subtle, the Reply improperly changes Petitioners' theory of invalidity against the '460 patent's claims. In the Petition, Petitioners' theory for element 1.2 was that "Shen's UL control/data channels (PUCCH/PUSCH) are transmitted through one transmission BWP of the BWP set." Pet., 25.² Petitioners contended in the Petition that element 1.2 did not require the frequency hopping configuration information ("FHCI") be transmitted through one transmission BWP of the BWP set, and indeed even took the hardline position that "the '460 Patent does not support this interpretation" of element 1.2. Pet., 26.

As a back-up, Petitioners contended that Shen discloses transmitting FHCI via high-level signaling or system broadcast message, such as via RRC signaling, but did not tie such high-level signaling or system broadcast message to any one transmission BWP. Pet., 26. Instead, Petitioners relied on Shen's disclosure of RRC signaling, compared that disclosure to 15:8-10 of the '460 patent, and

² Element 1.2 recites, in full, "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."

concluded that “Shen teaches that frequency hopping configuration information is transmitted through one transmission BWP of the BWP set using RRC signaling to the same extent disclosed in the ’460 Patent.” Pet., 26. Finally, Petitioners alleged that Shen’s RRC signaling transmits “inside the BWP frequency range,” but without tying that range to “one transmission BWP of the BWP set.”

To recap these Petition theories, Petitioners first argued that element 1.2 requires that the UL control/data channels, not the FHCI, are transmitted through one transmission BWP of the BWP set, *i.e.*, Shen’s activated BWP. They then argued that Shen transmits FHCI through RRC signaling, but only tied that RRC signaling to inside a BWP frequency range, without tying that frequency range to “one transmission BWP of the BWP set.”

The Reply takes a new approach, now arguing that the “frequency domain displacement information is transmitted through one transmission BWP of a BWP set, namely, the ‘activated BWP.’” Reply, 1. ***This is a new theory***, because they are now arguing that the FHCI itself, not the UL control/data channels, is transmitted via the activated BWP. Petitioners cite to Shen’s 13:29-34 for this assertion, but in the Petition, that citation was relied upon to allege that Shen’s PUCCH/PUSCH, not the FHCI, are transmitted through Shen’s activated BWP. Petitioners criticize Patent Owner for “fail[ing] to address the evidence provided in the Petition,” (Reply, 2), but do not own up to their own shifting use of evidence.

The Petition's theories have been addressed in Patent Owner's Preliminary Response (*see* POPR, 10-13), and these new Reply theories should be disregarded.

II. PETITIONERS ALSO PRESENT AN IMPROPER NEW THEORY FOR ZHANG

As with Shen, Petitioners also change theories based on Zhang. In the Petition, Petitioners alleged that “Zhang’s UL control/data channels (PUCCH/PUSCH) are transmitted through one transmission BWP (‘BWP resource’) of the BWP set.” Pet., 45 (citing Zhang, [0010-12] and [0020-21]). On Reply, Petitioners cite to the same paragraphs of Zhang, but newly contend that Zhang’s “frequency hopping resource allocation information is transmitted through one ‘BWP resource’ of a BWP set.” Reply, 3 (citing Zhang, [0010-12] and [0020-21]). Just as with Shen, Petitioners are changing their interpretation and theory of element [1.2], from previously relying on UL control/data channels being transmitted through one transmission BWP of the BWP set, to now relying on FHCI being transmitted through one transmission BWP of the BWP set.

The Reply also points to page 46 of the Petitioner, where they alleged that “Zhang explicitly discloses that the frequency hopping indication *information* is located in the at least one of the BWP indication *information* and the intra-BWP PRB resource indication *information*.” Reply, 3 (emphasis added); Pet., 46 (citing Zhang, [0231]; Ex. 1031, ¶¶239-242). But as noted in the POPR, nowhere in the Petition do Petitioners identify how Zhang transmits this *information*. POPR, 14-

17. Identifying which BWP indication *information* contains Zhang's frequency hopping indication *information* does not explain how that information is being transmitted to the UE, and in particular whether that information is being transmitted "through one transmission BWP of the BWP set" as claimed.

Petitioners argue on Reply that "Zhang's use of 'intra'-BWP demonstrates to a POSITA that the information is provided 'within' one transmission BWP. Reply, 3. But again, Zhang discloses "intra-BWP PRB resource indication information" (see Zhang, [0020-21], [0231]) as the "information" where frequency hopping indication information is located, not how this information is transmitted. POPR, 14-15. Rather than address this argument, which goes unrebutted in the Reply, Petitioners fall back to allege that "Zhang's use of resource indication information for 'the BWP resource' indicates *or renders obvious* the use of one BWP to transmit the information." Reply, 3 (emphasis added). But this assertion is accompanied by no supporting evidence or logic. Petitioners point to nowhere in Zhang that discloses how this information is transmitted to a UE, and it is improper to manufacture a claimed element out of thin air.

III. THE CHALLENGE BASED ON YIN ALSO FAILS

The Reply's addressing of Yin recounts the obviousness assertions made in the Petition, even repeating the Petition's conclusory assertions about routine/known methods/predictable results and the citation to Dr. Lanning's

declaration for the same conclusory assertions. Reply, 4-5. Those assertions have been fully addressed in the POPR. *See* POPR, 18-21. The Reply also sidesteps POPR's argument at 20-21, which explained that:

[E]ven if TS 36.211 and TS 36.213 were combined with Yin as alleged by Petitioners, there is no reason advanced in the Petition for why any frequency hopping information for a UL data channel [would] be transmitted along with frequency hopping configuration information for a UL control channel “through one transmission BWP of the BWP set.” Even according to Petitioners' theory of combined references, that claimed feature is still missing from the proposed combination and never addressed in Petitioners' theory of element 1.2.

POPR, 20. Petitioners restate this argument incorrectly, characterizing the argument as “despite Yin's disclosure of transmitting FHCI for a UL control channel, it would not have been obvious to transmit the same FHCI for a UL data channel.” Reply, 4. This misses the point, however. It is not enough to argue in favor of using “Yin's control channel frequency hopping communication with the data channel frequency hopping communication taught by TS 36.211 and TS 36.213.” Element 1.2 also requires this information to be “transmitted through one transmission BWP of the BWP set.” And nowhere does the Petition address this aspect of the Yin combination.

For the foregoing reasons, the Grounds are all deficient and should be rejected.

Dated: June 30, 2025

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CERTIFICATE OF SERVICE

Petitioner has consented to e-mail service in this proceeding. Pursuant to 37 C.F.R. §42.6, the undersigned certifies that on this date, a copy of the foregoing document was served by email upon the following counsel at the below email addresses:

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