

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 IPR2025-00292
U.S. Patent No. 9,894,644

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)
2055-2199	Reserved
2200	Ex. J-1 of Appendix J to 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)
2201-2202	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. LEE FAILS TO INCLUDE HIGH LEVEL SIGNALING HAVING CONFIGURATION INFORMATION WITH INFORMATION ON A START SUBFRAME OF THE PLURALITY OF SUBFRAMES

The Reply fails to rebut the issue raised in Patent Owner’s Preliminary Response (“POPR”), namely whether Lee discloses or suggests the limitations of claims 1-3 directed to receiving or transmitting configuration information with higher level signaling, where the “configuration information comprises information on a start subframe of the plurality of subframes,” as claimed.

The Reply points to Fig. 9 of Lee and characterizes it as “an example of a bitmap ... that includes information on a start subframe of the plurality of subframes” (Reply, 1-2):

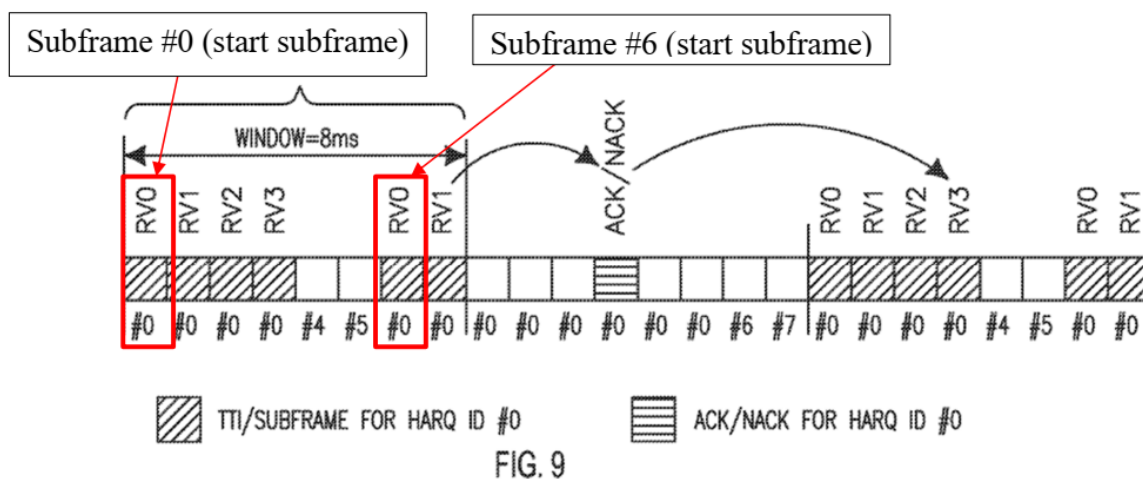


Fig. 9 of Lee (Annotated)

But Petitioners are wrong. Fig. 9 is not a “bitmap,” as Lee itself confirms. Rather,

“FIG. 9 is a diagram of an example of TTI bundling with bitmap indication. The *subset of subframes for TTI bundling 905 may be indicated by using a bitmap within the window*, and the bitmap may be informed via higher layer signaling.”

Lee, [0113]. Thus, all that Lee discloses concerning the bitmap is which subframes in window 905 can be used for TTI bundling (the hatched subframes 0, 1, 2, 3, 6, and 7). What Lee does not disclose is the use of higher level signaling to indicate which of those subframes is the start subframe for a particular TTI bundle.

The Reply suggests various aspects of Fig. 9 disclose the start subframe. In the annotation of Fig. 9, the Reply contends that the RV0 subframes are the start subframes. Reply, 2 (“including the start subframes for each subset, designated RV0”). But the RV designation does not indicate a “start subframe.” In Lee, RV stands for “redundancy version” and the numerical designation conveys the correspondence between a particular subframe and a particular redundancy version. *See* Lee, [0051] (“A single transport block may be coded and transmitted with different redundancy versions (RVs) in each of the consecutive subframes, where subframe and TTI may be used interchangeably. For example, the consecutive TTIs in the same TTI bundle may be assigned to consecutive RVs.”). In addition to missing this point, the Reply also does not explain how the RV value is set for a subframe and whether configuration information for a redundancy value is transmitted with higher level signaling. The only discussion of “start” subframe

in Lee is found in its discussion of PRACH transmissions, where “the starting subframe for PRACH transmission may be configured in every radio frame.” Lee, [0024]. But this would not involve higher level signaling.

As explained in the POPR, knowing that a particular subframe in a window could be used for TTI bundling does not disclose a starting subframe because Lee's system would also have to know the TTI bundle size, and that is conveyed with lower level signaling in Lee. POPR, 10-11. In other words, once Lee receives the bitmap indicating the subframes available for TTI bundling, Lee's system must wait for the lower level signaling of the number of subframes per bundle before assigning start subframe positions in the window. The Reply doubles down on the theory that Lee's bitmap itself contains the information on a start subframe, but this is incorrect and reflects a mistaken understanding of Lee. Reply, 3.

The Reply next uses flawed logic to draw an equivalency between Lee and the '644 patent. Reply, 3-4. Petitioners argue that the '644 patent allows for start subframe information to be conveyed in a bit map. *Id.* But this does not mean that all bitmaps contain information on a start subframe, and Petitioners point to no evidence to the contrary.

Finally, the Reply contends “this feature would have been obvious in view of Lee.” Reply, 4. But Petitioners' reasoning is entirely hindsight-based and does not view Lee in its entirety. Once again, the TTI bundle size in Lee is transmitted

with lower level signaling. It makes no sense why a POSITA would be motivated to provide start subframe information using higher level signaling before Lee's system even knows the dynamically variable TTI bundle size. Only improper hindsight reasoning can explain this odd manner for modifying Lee.

II. IMPERMISSIBLE HINDSIGHT ALSO GUIDES PETITIONERS' COMBINATION OF LEE WITH YOU AND ZHUANG

The Reply also confirms that the Petition failed to provide an adequate motivation to combine Lee and You. In response to Patent Owner's observation that providing You's start frame indication in Lee's higher level signaling would eliminate any need for Lee's "new DCI format" (POPR, 11-14), the Reply asserts that Lee's system is preferable to You because of Lee's "new DCI format," arguing "Lee teaches a new DCI format used to carry indication bits; for dynamic configuration of a UE (e.g., WTRU) using dynamic subframe bundling. By contrast, You does not disclose using dynamic subframe bundling. Thus, a POSITA would not have had any reason or motivation to jettison the new DCI format of Lee." Reply, 5 (quotation and citation omitted). But this logic undercuts a POSITA looking to You at all. *See Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1332 (Fed. Cir. 2019) (finding no motivation to combine where the base reference already taught a different way to achieve a function).

As explained above, Lee does provide its low-level, new DCI format with the number of subframes in a TTI bundle to provide its dynamic subframe

bundling. And the Petition and Reply assert that Zhuang does so as well. Reply, 5 (citing Pet., 47-48 (which asserts Zhuang provides the number of subframes in a “subframe indicator” found in a low-level control channel and that “the information in a ‘subframe indicator’ can be used to find the start subframe of the data channel (PDSCH).”) But what Petitioners do not undertake is considering these references as whole—to provide dynamic subframe bundling, the state of the art was to include information on a start subframe and information on the number of subframes in a low-level signaling because “it is important to have a method to determine the start subframe of the physical channels” where the number of subframes is set by low-level signaling. Reply, 5.

The question remains: what motivation is there for moving You's high-level signaling of start subframe information into Lee's high-level signaling? The Reply again confirms there is none. In trying to address that question, Petitioners lean on the fact that Lee, You, and Zhuang are each directed to enhancing MTC UE devices by repetition of channels. Reply, 4-5. While that may make the references analogous, it does nothing to explain any advantage to providing You's high-level start subframe information in Lee's system where Lee already can provide start subframe information in low-level signaling for achieving dynamic bundling like Zhuang expressly teaches.

The Petition's challenges are not compelling and do not warrant institution.

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 June 30, 2025, a copy of the foregoing document was served by email upon the following counsel at the below email addresses:

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