

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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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.

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Case IPR2025-00293  
U.S. Patent No. 10,009,161

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**PATENT OWNER'S PRELIMINARY SUR-REPLY<sup>1</sup>**

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<sup>1</sup> 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 <a href="https://www.uscourts.gov/sites/default/files/2025-02/fcms_na_distcomparison1231.2024.pdf">https://www.uscourts.gov/sites/default/files/2025-02/fcms_na_distcomparison1231.2024.pdf</a> ) |
| 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)                                                                                                   |
| 2052-2202   | 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                                                                                                                                                                                                                                                    |
| 2205-2249   | Reserved                                                                                                                                                                                                                                                                                                     |
| 2250        | Appendix K 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)                                                                                      |

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| 2251 | Ex. K-3 of Appendix K 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) |
| 2252 | Ex. K-8 of Appendix K 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) |

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

**I. THE PRIOR ART DOES NOT INCLUDE THE CLAIMED SET OF CODE RATE VALUES, AND USING ALL CLAIMED CODE VALUES WOULD NOT HAVE BEEN OBVIOUS**

The Reply doubles down on Petitioners' hindsight-based reasoning underlying its obviousness challenge. On one hand, Petitioners argue that Xia discloses two very specific 256QAM code rate values, precisely selected to use one code rate value of 948 in order to match the code rate of 948 for CQI index 15 for 64QAM, and to use another code rate value of 711 in order to match the spectral efficiency value of 5.5547 for the CQI index 15 for 64QAM. On the other hand, even though Xia specifically chooses two code rates that are equidistant from these precisely selected code rates (790, 869, thus reflecting a code rate delta of 79 between the four successive CQI indices), Petitioners contend that these intermediate code rates are somehow not important and that close is good enough. This is wrong and fails to consider Xia for all it teaches.

The Reply argues that it is proper to deviate from Xia's disclosed code rates of 790 and 869 because Xia allegedly instructs that "approximately" constant intervals is sufficient. Reply, 2 (citing Ex. 1027, 84:18-31). This is misleading at best, and fails to understand what Xia meant by "approximately," or even how approximate intervals destroy the endpoint values. In the cited portion of Xia, Xia

discloses that “the spectral efficiencies of the X entries with the largest CQI indices in any of the aforementioned first CQI tables, when arranged in ascending order of spectral efficiency, form an arithmetic progression or an *approximately* arithmetic progression.” Xia, 84:18-21 (emphasis added). Xia then discloses what it means by “approximately” by explaining that “[w]hen the spectral efficiency of the X entries with the largest CQI index in the said first CQI table is arranged in an approximately arithmetic sequence in ascending order of spectral efficiency, it means that starting from the second entry of the X entries, the difference in spectral efficiency between each entry and its preceding entry *falls within a range defined by a constant minus a preset value and the same constant plus the preset value.*” *Id.*, 84:25-30 (emphasis added). In the examples that follow, Xia describes Table 5-1, where equal intervals are used, and Table 5-2, where the allowable spectral efficiency deviation is 0.0001. Xia, 85:7-86:5. In Table 5-2, the CQI index 13 code rate changes from 790 to 791 as a result of this preset value. Xia, Table 5-2 (page 85 of Ex. 1027). Notably, the CQI index 15 code rate *also changes*, from 948 to 951, thus deviating from the claimed code rate. *Id.*

Petitioners fail to appreciate two details regarding this disclosure. First, the limited range of deviation allowed by Xia—from 790 to 791—does not support a more dramatic change from 790 to 797. Xia describes “approximately” as deviating by only a spectral efficiency value of 0.0001, and this yields a small

change in code rate, not the dramatic change that Petitioners are chasing. Second, by deviating from the strictly arithmetic progression, Xia teaches that CQI index 15's code rate also deviates, and is ***no longer 948***. Thus, by arguing that Xia's code rate for CQI could be changed to 797, Petitioners fail to realize that another claimed code rate of 948 is destroyed in the process.

One more detail about Xia undercuts Petitioners' obviousness challenge. As noted above, Xia is focused on establishing an arithmetic progression of spectral efficiencies, and this yields Xia's code rates of 790 and 869 for CQI indices 13 and 14. But Xia does not disclose or suggest the claimed code rate of 797, and does not disclose or suggest a reason to deviate from 790 to this claimed code rate. As explained in the POPR, the '161 patent selects the 797 code rate value "so that differences of the required SNRs between adjacent CQI indexes are almost the same using required SNRs of FIG. 17 and Equation 2." POPR, 10 (discussing the '161 patent, 14:7-11 (describing the R code rate value of 797 in Fig. 18), 13:53-14:11; Fig. 21; 14:43-53). None of Petitioners' prior art recognizes or discloses this reason to select 797 as a code rate value, much less this actual code rate value. The Reply claims that "Petitioners explain that Xia discloses ***the same technique*** of using approximately constant intervals as the '161 Patent." Reply, 2 (emphasis in original). But this is wrong because Xia is looking at completely different values to establish uniform intervals. Xia looks at spectral efficiency and code rates,

while the ’161 patent looks at SNR intervals. These differences yield different code rates, and there is no reason why the ’161 patent’s claimed rates would have been obvious.

Relatedly, the Reply fails to address every POPR argument. Petitioners do not respond to Patent Owner’s position that “whatever ‘routine optimization’ a POSITA would use, that optimization could have an effect on the other values in the set of code rate values.” POPR, 3. Nor did Petitioners dispute that they “offered no analysis of how any ‘routine optimization’ would affect the other claimed code values and whether such a change would have any expectation of success, much less a reasonable expectation of success.” POPR, 3. There is no basis to modify one of Xia’s intermediate code values without affecting the end rates.

## **II. *YEDA RESEARCH* DOES NOT PERMIT USING NON-PRIOR ART TO DISCLOSE CLAIMED ELEMENTS**

Finally, Ex. 1028 and Ex. 1030 are admittedly not prior art and cannot be used to supply missing claimed elements. Petitioners cite *Yeda Research & Dev. Co. v. Mylan Pharm. Inc.*, 906 F.3d 1031, 1041 (Fed. Cir. 2018) to contend that their use of non-prior art was permissible, but the Petition goes far beyond *Yeda Research*. In that case, the Federal Circuit endorsed the Board’s use of a publication (“Khan 2009”) that issued after the patent’s priority date, but reflected a study that began two years before the patent’s priority date. *Id.* at 1037. Under those circumstances, the Federal Circuit permitted the use of Khan 2009 as limited

evidence “as of the priority date” since Kahn 2009 addressed choices made prior to the priority date. Here, Petitioners improperly use non-prior art to fill in what is missing in the prior art references—namely, the use of code rate value 797 in a set that includes code rate values 711 and 948. *Supercell Oy v. Gree, Inc.*, No. IPR2021-00501, Paper 7 at 8-9 (PTAB. Aug. 17, 2021) (“Evidence that supplies a specific claim limitation is not ‘supporting evidence’”). This is improper, and inconsistent with *Yeda*, which maintains that the evidence must relate to what would have been known as of the priority date of the patent-at-issue. *Yeda*, 906 F.3d at 1041 (“non-prior art evidence of *what was known*”) (emphasis added).

Also, Patent Owner made no “mischaracterization” of Petitioners’ expert’s statement. *See* Reply, 5. Petitioners’ expert stated “R1-142638 (EX1030), although not prior art, demonstrates that the selected code rate value of 797 had no criticality to the use and standardization of the CQI table.” Reply 5, (citing Ex. 1008, ¶162). Contrary to *Yeda*, that statement and evidence fails to maintain the investigative focus as of the priority date, even if the expert’s reliance on non-prior art was allegedly for a “supporting role.” Reply, 5. In any event, evidence of post-priority date success (or non-criticality) cannot be used to establish the requisite “reasonable expectation of success” as of the priority date, as required for obviousness. *See Yeda*, 906 F.3d at 1042.

As such, the Grounds should be rejected and the Petition should be denied.

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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