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)

U.S. Patent No. 11,540,272
Issue Date: December 27, 2022
TITLE: METHOD AND DEVICE FOR ALLOCATING DATA CHANNEL RESOURCE FOR NEXT-GENERATION WIRELESS ACCESS NETWORK

Inter Partes Review No.: IPR2025-00137

PETITIONERS' REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION

TABLE OF AUTHORITIES

Regulatory Cases

BMW of No. Am., LLC, v. Northstar Systems LLC, IPR2023-01017, Paper 12 at 10 (P.T.A.B. Dec. 8, 2023) 5

Petitioners' Exhibit List

Exhibit #	***Description***
1001	U.S. Patent No. 11,540,272 ("the '272 Patent")
1002	Select portions of prosecution history of the '272 Patent ("File History")
1003	Declaration of Petitioners' Expert ("Melodia Declaration")
1004	U.S. Pat. Pub. No. 2018/0376497 ("You")
1007	KR2016/008093 ("You PCT") filed on July 25, 2016
1006	Certified Translation of EX-1007
1007	U.S. Pat. Pub. No. 2020/0187169 ("Gao")
1008	CN201610849716.8 ("Gao Priority Application")
1009	Certified Translation of EX-1008
1010	3GPP Specification 36.213, Release 13.1.0 (published March 2016)
1011	3GPP Specification 36.212, Release 13.1.0 (published March 2016)
1012	Declaration of Craig Bishop ("Bishop Declaration")
1013	List of related patents
1014	Plaintiff Pegasus Wireless Innovations LLC's Disclosure of Asserted Claims and Infringement Contentions, Verizon Case.
1015	'272 Patent Priority Application (October 31, 2016)
1016	Certified Translation Of October 31, 2016 Priority Application For '272 Patent
1017	RAN 84-BIS list of attendees (including inventor)
1018	RAN 86 list of attendees (including inventor)
1019	RAN 86-BIS list of attendees (including inventor)
1020	R1-1610129
1021	RAN1#86-BIS Meeting Draft Minutes (dated October 20, 2016).

Exhibit #	***Description***
1022	*Pegasus Wireless v. Cellco Partnership d/b/a Verizon Wireless*, Case 2:23-cv-00640-JRG (EDTX), Docket Control Order
1023	Websters definition of "table" (https://www.merriam-webster.com/dictionary/table)
1024	Brittanica definition of "table" (https://www.britannica.com/dictionary/table)
1025	KT Corporation Motion For Protective Order From Questioning Beyond The Scope Of Jurisdictional Discovery (Redacted), Dkt. No. 172, case 2:23-cv-00640.
1026	Excerpts from Prosecution History Of Application 16/346,108 (parent application to '272 patent)
1027	Order Granting Protective Order, case 2:23-cv-00640-JRG Document 178 (12/12/2024)
1028	*Pegasus Wireless v. Cellco Partnership d/b/a Verizon Wireless*, Case 2:23-cv-00640-JRG (EDTX), Dkt. No. 310-15, Exhibit M to Plaintiff Motion To Amend Infringement Contentions (April 17, 2025 redacted filing of April 10, 2025 sealed motion)
1029	*Pegasus Wireless v. Cellco Partnership d/b/a Verizon Wireless*, Case 2:23-cv-00640-JRG (EDTX), Dkt. No. 310-16, Exhibit N to Plaintiff Motion To Amend Infringement Contentions (April 17, 2025 redacted filing of April 10, 2025 sealed motion)

The Petition presents compelling evidence of invalidity. PO disputes a single element: "information on a starting OFDM symbol" within a slot. Patent Owner's Preliminary Response ("POPR"), Paper 11 (April 17, 2025) at 9-14. As detailed below, both Gao (EX-1007) and You (EX-1004) teach this element.

1. Gao Teaches, Or Renders Obvious, The Claimed "Information On A Starting OFDM Symbol."

Gao discloses "slots" with OFDM symbols. Gao allocates "regions" within "time units" which are "one or more slots…." EX-1007, 0019. Figure 5 shows two "time units" (slots) each divided into multiple "regions" for downlink and uplink shared channels. EX-1003, ¶¶205-211.

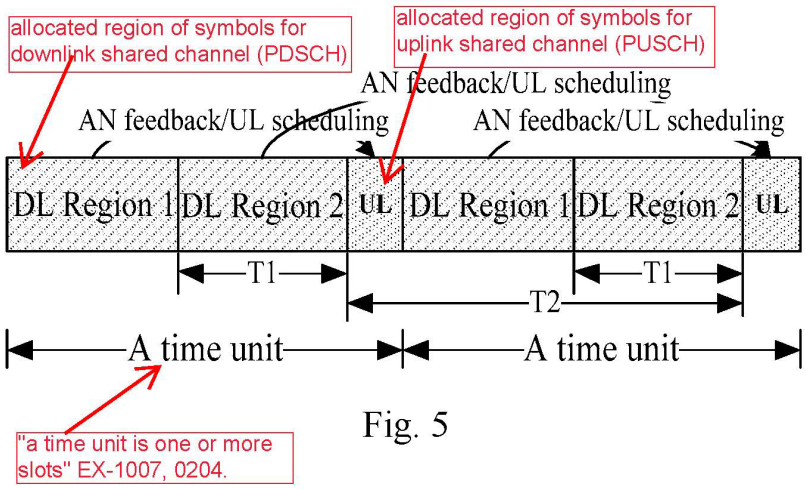

Fig. 5

EX-1007, Fig. 5, 0147 ("DL region may occupy only a part of OFDM symbols"), 0170, 0147-0161.

In Gao, "each pattern includes an allocation of lengths and **<u>positions of the DL regions in the time unit</u>**…." EX-1007, 0206. EX-1003, ¶¶238-241. Gao identifies this "position" using "*the* number of a symbol." *E.g.*, EX-1007, 0128

("indication information indicates a time domain position" using "the number of a symbol"). EX-1003, ¶283. "[T]he number of a symbol" is "information on a starting OFDM symbol" because it defines the specific start number of the DL region within the slot. Thus, Gao identifies the "position" (i.e., "the number of a symbol") within the slot – which teaches or renders obvious "information on a starting OFDM symbol." PO does not dispute that Gao's "allocation of lengths" discloses or renders obvious "the number of OFDM symbols."

PO does not address the disclosures above and cites to the following :

> [T]he notifying module is configured to notify the UE of the allocated DL regions via the configuration signaling by: … <u>notifying the UE of one of a plurality of predefined patterns, where each pattern includes an allocation of lengths and positions of the DL regions in the time unit</u>; ***or notifying the UE of start or end positions of the DL regions in the time unit***.

POPR at 13 (underlined and bolded emphases in original) (quoting EX-1007, [0191]). Gao recites separate mechanisms "to notify the UE of the allocated DL regions via the configuration signaling" (as quoted above). The content of one alternative does not dictate or limit the meaning / content of the other alternative.

PO's position devolves to the assertion that because Gao did not recite the word "start" before "positions" in the underlined passages, Gao does not disclose "information on a starting OFDM symbol" as claimed. POPR, 13-14.

PO's position makes no sense. Gao's "DL regions" are defined by

contiguous blocks of OFDM symbols within a slot as shown above. In Gao's context, there are only a few ways to interpret Gao's "positions of the DL regions in the time unit." First, and most relevant to the claims here, "positions" refers to at least the start symbol number, while "lengths" refers to how many symbols are in the "DL region" going "forward" in time. Second, "positions" refers to at least the ending symbol number, while "lengths" refers to how many symbols are in the "DL region" going "backward" in time. Third, "positions" at least identifies contiguous symbol numbers (*e.g.*, symbols 2, 3, 4). At a minimum, the first alternative provides the claimed "*information on* a starting OFDM symbol" because it conveys to the UE the number of the symbol that starts the DL block so that the UE can successfully identify, receive, and decode the OFDM symbols in the DL region. Thus, it makes no sense that Gao must expressly use the word "start" to disclose (or render obvious) the disputed claim element (as PO contends).

2. You Teaches, Or Renders Obvious, The Claimed "Information On A Starting OFDM Symbol."

You plainly teaches two separate identifications corresponding to the starting OFDM symbol. First, You teaches that "patterns" identify ("indicate") specific regions for PDSCH within an overall set of symbols:

> Alternatively, the sPDSCH transmission resource pattern may **<u>indicate</u>** not only the PRB resource region in which the sPDSCH is transmitted but also a resource region in which the sPDSCH is transmitted **<u>within</u>** an OFDM symbol region in which the sPDCCH is transmitted in the

PRB resource region in which the sPDSCH is transmitted. EX-1004, [0004]. The "indicate … within" teaches that the pattern is not some undefined block (region) of OFDM symbols but includes indicating the PDSCH region location (the "indication") within an overall OFDM symbol region that includes other regions (e.g., "information on a starting OFDM symbol…").

This embodiment is demonstrated by You's Figure 3 which shows a PRB region with both PDCCH (control) and PDSCH (data) "regions." EX-1004, Fig. 3; EX-1003, ¶¶379-385. You's "control" region may have a variable number of OFDM symbols (e.g., 3 or 4). EX-1004, 0067. You's "data" (PDSCH) region may also be in the overall resource region after the "control" region. EX-1004, 0067. EX-1003, ¶¶381-384.

Thus, because the PDCCH is of variable length within the overall PRB resource region, the starting symbol of the PDSCH may differ. Thus, You's teaching that the "the sPDSCH transmission resource pattern may **indicate** … a resource region in which the sPDSCH is transmitted **within** an OFDM symbol region in which the sPDCCH is transmitted in the PRB resource region in which the sPDSCH is transmitted" teaches that the pattern identifies (indicates) the actual starting OFDM symbol of the PDSCH region.

Second, PO incorrectly argues that You's Section "D. Starting OFDM Symbol location of sPDSCH Transmission" should be read in an exclusionary

fashion to negate the teachings of Section "C. sPDSCH PRB Allocation" in which You describes "patterns" as "Method 7." EX-1004, [0198-0225]. POPR, 11-12.

PO incorrectly interprets Section D which describes different "options" for the OFDM starting location depending on the system configuration. Section D describes "options" for different "method" scenarios for transmitting PDCCH and PDSCH. *See* EX-1004, [0233-0235], [0236-0251], [0252-0255], [0256-0271], [0272-0273], [0274-0295] (teaching "Method[s]" 1-6, respectively). For each method, Section D teaches which "options" may be used such as DCI, SIB, or RRC to configure PDSCH information. E.g., EX-1004, [0240, 0259].

PO's reading that Section D excludes or overrides Section C is unsupported by citation to You. Rather, You's Section D should be considered in conjunction with Section C. EX-1004, [0230]. For example, Section C separately teaches the "location" of PDSCH "may be configured" by RRC, SIB or DCI (consistent with Section D). EX-1004, [0216, 0218, 0220, 0205].

II. Stipulation / *Fintiv*

PO's *Fintiv* arguments fail due to: (1) the number of district court cases and the fact that trial dates have not been set for two of the three cases; (2) compelling merits support institution; and (3) Petitioners presented a *Sotera* stipulation (Paper 13, at 3). Such a pre-institution stipulation is proper. *See BMW of No. Am., LLC, v. Northstar Systems LLC*, IPR2023-01017, Paper 12 at 10 (P.T.A.B. Dec. 8, 2023).

Respectfully submitted,

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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 30, 2025, a complete and entire copy of this **Petitioners' Reply to Patent Owner's Preliminary Response to the Petition** 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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