

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ONEPLUS TECHNOLOGY (SHENZHEN) CO., LTD.,
Petitioners,

v.

PANTECH CORPORATION,
Patent Owner

IPR2025-00762

U.S. Patent No. 10,863,573

PATENT OWNER'S SUR-REPLY

Mail Stop **Patent Board**
Patent Trial and Appeal Board
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PATENT OWNER'S EXHIBIT LIST

Exhibit Number	Description
2001	Second Amended Docket Control Order, <i>Pantech Corporation and Pantech Wireless, LLC v. OnePlus Technology (Shenzhen) Co., Ltd.</i> , No. 5:24-CV-00038-RWS-JBB (E.D. Tex.) (Dkt. 58) (May 13, 2025)
2002	United States District Courts – National Judicial Caseload Profile
2003	Pantech Corporation's July 9, 2021 Notice Letter to OnePlus Technology Co., Ltd.
2004	Third Amended Docket Control Order, <i>Pantech Corporation and Pantech Wireless, LLC v. OnePlus Technology (Shenzhen) Co., Ltd.</i> , No. 5:24-CV-00038-RWS-JBB (E.D. Tex.) (Dkt. 86) (July 17, 2025)
2005	Order Modifying Dates in Docket Control Order, <i>Pantech Corporation and Pantech Wireless, LLC v. OnePlus Technology (Shenzhen) Co., Ltd.</i> , No. 5:24-CV-00038-RWS-JBB (E.D. Tex.) (Dkt. 85) (July 17, 2025)
2006	Jury Verdict, <i>Pantech Corp. v. OnePlus Technology (Shenzhen) Co., Ltd.</i> , No. 5:22-cv-00069-RWS (E.D. Tex.) (Dkt. 259) (April 1, 2024)
2007	Final Judgment, <i>Pantech Corp. v. OnePlus Technology (Shenzhen) Co., Ltd.</i> , No. 5:22-cv-00069-RWS (E.D. Tex.) (Dkt. 499) (Jan. 23, 2025)
2008	Kiri Gupta & Urska Petrovcic, <i>Evidence of Systematic "Patent Holdout"</i> , 38 Berkeley Tech. L. J. (2023)
2009	Richard A. Epstein & Kayvan B. Noroozi, <i>Why Incentives for "Patent Holdout" Threaten to Dismantle FRAND, and Why It Matters</i> , 32 Berkeley Tech. L.J. 1381 (2017)
2010	Kalyan Dasgupta & David J. Teece, <i>Protecting Innovation in the Mobile Wireless Ecosystem: Understanding & Addressing "Hold-Out"</i> , 38 Berkeley Tech. L.J. 313 (2023)

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Patent Owner's Sur-Reply

2011	Claim Construction Order from <i>Pantech Corp. et al. v. OnePlus Tech. (Shenzhen) Co., Ltd.</i> , No. 5:24-cv-00038-RWS-JBB (E.D. Tex.)
2012	Declaration of Dr. Paul Min in Support of Patent Owner's Response
2013	Transcript of December 18, 2025 Deposition of Dr. Titus Lo
2014	Certified Translation of Korean Patent Application No. 10-2013-0053408
2015	U.S. Patent Application Publication No. 2016/0113058

LISTING OF CHALLENGED CLAIMS

Claim	Claim Text
1[pre]	A method for user equipment receiving multi-flow data with respect to one evolved packet system (EPS) bearer through a macro base station (macro eNB) and a small base station (small eNB) serving a single cell in a wireless communication system supporting dual connectivity, the method comprising:
1[a]	receiving packet data convergence protocol (PDCP) packet data units (PDUs) through the macro base station and the small base station;
1[b]	obtaining PDCP service data units (SDUs) corresponding to the PDCP PDUs; and
1[c]	receiving from the macro base station information related to an in-sequence timer for the PDCP SDUs through a radio resource control (RRC) message,
1[d]	wherein the PDCP SDUs are indicated by a predefined PDCP sequence number (SN),
1[e]	wherein the RRC message includes a PDCP-configuration information element (IE), and
1[f]	the PDCP-configuration IE includes a field indicating a value of the in-sequence timer.
2	The method of claim 1, further comprising: confirming the respective PDCP SNs of the obtained PDCP SDUs and

	performing in sequence delivery of the PDCP SDUs to an upper layer from a PDCP entity according to the PDCP SN.
3[a]	The method of claim 2, further comprising: confirming whether there is a PDCP SDU of PDCP SN #n-1 which is missed notwithstanding obtaining a PDCP SDU of PDCP SN #n; and
3[b]	driving the in-sequence timer with respect to the PDCP SDU of PDCP SN #n when there is the PDCP SDU of PDCP SN #n-1 which is missed.
4[a]	The method of claim 3, wherein before the in-sequence timer for the PDCP SDU of PDCP SN #n has expired, when the PDCP SDU of PDCP SN #n-1 is obtained,
4[b]	the PDCP SDU of PDCP SN #n-1 and the PDCP SDU of PDCP SN #n are delivered to the upper layer according to the order of the PDCP SN.
5	The method of claim 2, wherein when the in-sequence timer for the PDCP SDU of PDCP SN #n has expired, the PDCP SDU of PDCP SN #n is delivered to the upper layer of the PDCP entity even though there is no PDCP SDU of PDCP SN #n-1.
8[pre]	A user equipment (UE) for receiving multi-flow data with respect to one evolved packet system (EPS) bearer through a macro base station (macro eNB) and a small base station (small eNB) serving a single cell in a wireless communication

	system supporting dual connectivity, the UE comprising:
8[a]	a receiving unit receiving packet data convergence protocol (PDCP) packet data units (PDUs) through the macro base station and the small base station and
8[b]	receiving from the macro base station information related to in-sequence timer for the PDCP SDUs through a radio resource control (RRC) message; and
8[c]	a processor obtaining PDCP service data units (SDUs) corresponding to the PDCP PDUs,
8[d]	wherein the PDCP SDUs are indicated by a predefined PDCP sequence number (SN),
8[e]	wherein the RRC message includes a PDCP-configuration information element (IE), and
8[f]	the processor determines the value of in-sequence timer based on the PDCP-configuration IE.
9[a]	The UE of claim 8, wherein the processor confirms the processor confirms the respective PDCP SNs of the obtained PDCP SDUs and
9[b]	performs in-sequence delivery of the PDCP SDUs to an upper layer from a PDCP entity according to the PDCP SN.
10[a]	The UE of claim 9, wherein the processor confirms whether there is a PDCP SDU of PDCP SN #n-1 which is missed notwithstanding obtaining a PDCP SDU of PDCP SN #n; and

10[b]	drives the in-sequence timer with respect to the PDCP SDU of PDCP SN #n when there is the PDCP SDU of PDCP SN #n-1 which is missed.
11	The UE of claim 10, wherein the processor delivers, when the in-sequence timer for the PDCP SDU of PDCP SN #n has expired, the PDCP SDU of PDCP SN #n to the upper layer of the PDCP entity even though there is no PDCP SDU of PDCP SN #n-1.
12	The UE of claim 10, wherein the processor delivers, before the in-sequence timer for the PDCP SDU of PDCP SN #n has expired, when the PDCP SDU of PDCP SN #n-1 is obtained, the PDCP SDU of PDCP SN #n-1 and the PDCP SDU of PDCP SN #n to the upper layer according to the order of the PDCP SN.

I. INTRODUCTION

Petitioner's Reply (Paper 26) fails to meaningfully rebut any of Patent Owner's arguments presented in its Patent Owner Response and offers no sound basis for concluding that its references invalidate U.S. Patent No. 10,863,573 under a proper reading of the claims.

In particular, Petitioner's Reply advocates for conveniently ignoring portions of Deenoo (*i.e.*, ¶ 211) that it cannot show are supported by its priority applications. For the first time in its Reply, Petitioner now argues that paragraph 128 of Deenoo's provisional applications supports FIG. 8; a new, untimely position that should not be afforded any weight by the Board. In addition, Petitioner's Reply and Dr. Lo's Reply Declaration fail to show, absent reliance on improper hindsight reconstruction, that any cited reference that discloses a PDCP-layer "in-sequence timer" that begins when an out-of-sequence PDCP service data unit (SDU) is detected and an RRC message that includes a PDCP-configuration information element (IE) with a field indicating a value of that timer, as required by the '573 Patent's claims. Petitioner's PDU–SDU equivalence assertions do not substitute for the missing PDCP-Config "inseqTimer" field and PDCP-layer semantics because claims 1 and 8 explicitly require receiving, via RRC, information "for the PDCP

SDUs,” that the message “includes a PDCP-configuration IE,” and that the “PDCP-configuration IE includes a field indicating a value of the in-sequence timer.” None of this is taught in Koskinen, Sammour, or Deenoo. *See e.g.*, EX2012, ¶¶ 119-125, 144-149, 174-182; EX1005, ¶¶ 37-39; EX1006, ¶¶ 145-153; EX1007, ¶¶ 208-211.

For at least these reasons, Petitioner has failed to meet its burden of showing by a preponderance of the evidence that any of claims 1-5 and 8-12 are rendered obvious based on any of Grounds 1-3. Accordingly, the Board should confirm the patentability of the '573 Patent.

II. PETITIONER'S NEW CITATIONS STILL DO NOT SHOW DEENOO IS PRIOR ART

Apparently recognizing the deficiencies in the support of Deenoo by its provisional applications, Petitioner's Reply, and Dr. Lo's Reply Declaration, change direction, newly asserting that (1) paragraph 128 in each of Deenoo's provisional applications (EX1054 & EX1055) support FIG. 8 of Deenoo and (2) “the Petition and Dr. Lo's declaration rely only on the first two sentences in Deenoo's paragraph 21.” Pet. Reply at 9. Petitioner pairs these new positions with reliance on two newly annotated versions of FIG. 8 in Dr. Lo's Reply Declaration (EX1056, ¶¶ 27-31; Reply at 8-9) to argue that paragraphs 208-210 of Deenoo alone support the relied-

upon subject matter, **neither of which was presented with the same sentence-specific framing or mapping in the Petition.** Pet. Reply at 8-9.

Petitioner had the opportunity to include these positions in the Petition, and therefore has now waived them. *See Netflix, Inc. v. DivX, LLC*, IPR2020-00558, Paper 66 at 45–47 (PTAB Feb. 22, 2024) (Final Written Decision) (declining to consider petitioner's arguments first raised in its Reply because "the Petition must set forth the petitioner's case-in-chief" and holding those arguments waived as improper new theories not presented in the Petition); *Juniper Networks, Inc. v. Swarm Tech. LLC*, IPR2021-01445, Paper 62, at 28–30 (P.T.A.B. Feb. 7, 2023) (Final Written Decision) (declining to consider petitioner's "zones" theory as waived because it was not presented in the petition and was raised for the first time in the reply, contrary to 37 C.F.R. §42.23(b) and the Trial Practice Guide); *see also Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify 'with particularity' the 'evidence that supports the grounds for the challenge to each claim.'") (quoting 35 U.S.C. § 312(a)(3) (2012)); *see also* 37 C.F.R. § 42.104(b)(4)–(5) (requiring a petitioner to identify "[h]ow the construed claim is unpatentable," "specify where each element

of the claim is found in the prior art patents or printed publications relied upon,” and identify “[t]he exhibit number of the supporting evidence relied upon to support the challenge and the relevance of the evidence to the challenge raised, including identifying specific portions of the evidence that support the challenge”).

These new positions are not simply a clarification in response to Patent Owner's Response; instead, these positions, in violation of the Trial Practice Guide (see § II(I)) rely on a new, not previously cited paragraph of Deenoo's provisional applications, rely on new interpretations of FIG. 8 and provide newly annotated versions of FIG. 8, and purport to carve out the unsupported portions of Deenoo's paragraph 211 in an apparent acknowledgement of the lack of support in the provisional applications, as pointed out in the Patent Owner's Response. Even setting aside the improper nature of these new arguments, Deenoo still fails to disclose or suggest at least (i) “receiving from the macro base station information related to an in-sequence timer for the PDCP SDUs through a radio resource control (RRC) message,” (ii) “the PDCP-configuration IE includes a field indicating a value of the in-sequence timer,” and (iii) “the processor determines the value of in-sequence timer based on the PDCP-configuration IE,” as explained herein and in the Patent Owner's Response.

III. PATENT OWNER'S CONSTRUCTION OF "AN IN-SEQUENCE TIMER" IS WELL-SUPPORTED

Petitioner's proposed construction fails to actually define the meaning of the in-sequence timer, and instead simply states an alleged purpose of using the in-sequence timer. Patent Owner does not dispute that the in-sequence timer is involved in the process of delivering PDCP SDUs and used for the situation in which an out-of-sequence SDU is detected. However, despite disagreeing with the definition proposed by Patent Owner (and defined in the '573 Patent), **Petitioner's proposed construction of "a timer used to place data that were received out of order back into sequence" *does nothing* to define the plain and ordinary meaning of the term, as instructed by the Board in the Decision Granting Institution ("DI")** (Paper 10), and instead explains a purpose or related result of implementing the in-sequence timer.

In contrast, Patent Owner's proposed construction of "a timer that begins upon the detection of an out-of-sequence SDU and lasts for a period of time" *defines the plain and ordinary meaning* of the timer itself consistent with its use in the claims and specification of the '573 Patent, as explained in detail in the Patent Owner's Response. Petitioner's criticisms of Patent Owner's construction

(*see* Petitioner's Reply at § II(B)) are misplaced and incorrect. Contrary to Petitioner's characterizations, Patent Owner's construction provides the meaning of the in-sequence timer as it would be understood by a POSITA, as Dr. Min explained in his declaration (EX2012).

Petitioner accuses Patent Owner's argument related to Koskinen as imposing a time requirement on the duration of the in-sequence timer. *See* Pet. Reply at 3-4. Not so. **Petitioner's criticism is inconsistent with the plain wording of Patent Owner's proposed construction**, which defines a starting condition for the timer but not a specified duration, and misconstrues Patent Owner's and Dr. Min's statements related to Koskinen. Dr. Min's explanations on the technical distinctions in 3GPP between a t-Reordering timer and the claimed in-sequence timer used the durations of the timers as one distinguishing aspect to illustrate that the timers are employed for different purposes in different implementations. These different implementations require a different mechanism for setting the duration of the timers – it is not the value of the duration that distinguishes the timers, but their implementations, as Dr. Min explained. *See* EX2012, ¶¶ 95-96, 114-116, 120-124.

In addition, Petitioner incorrectly conflates the limitations of claims 3-5 and 10-12 with Patent Owner's proposed construction for the in-sequence timer in claims

1 and 8; namely, Patent Owner's proposed construction does not "incorporate[] [limitations of the dependent claims] into the construction to improperly narrow the term." See Pet. Reply at 4-5. Petitioner points to claims 3 (and similarly claim 11), which recite, *inter alia*, "driving the in-sequence timer with respect to the PDCP SDU of PDCP SN #n when there is the PDCP SDU of PDCP SN #n-1 which is missed." This limitation defines the specific circumstance in which the in-sequence timer is actively "driven" (as opposed to receiving information related to an in-sequence timer, as recited in claim 1) and relates it to missed PDCP SDUs of a PDCP SN #n. Under Patent Owner's proposed construction, the in-sequence timer is not "driven," nor has the triggering action necessarily occurred in claim 1; this is added by claim 3. The remaining dependent claims similarly recite additional limitations not subsumed within Patent Owner's construction of the in-sequence timer.

Patent Owner respectfully submits that the Board should adopt its proposed construction of the in-sequence timer for the reasons outlined herein and in the Patent Owner Response, which are supported by the text of the '573 Patent and a POSITA's understanding of the term as explained by Dr. Min.

IV. THE PETITIONER'S REPLY FAILED TO CURE THE PETITION'S NUMEROUS DEFICIENCIES

A. Ground 1: The Reply's Conclusory Assertions Do Nothing to Correct the Petition's Failures to Show Obviousness Based on Koskinen

1. Elements 1[c] and 8[b]

Petitioner's Reply asserts that because PDUs contain SDUs a PDU gap implies an SDU gap. *See* Pet. Reply at 10-11. The Reply contends that "when a PDCP PDU is missed, it would have been obvious that a gap in the corresponding SDU is observed" and "a gap in SN means that PDUs are out-of-sequence, and by extension also are SDUs." *Id.* at 11. The Reply (and Petition) base their invalidity contention of Claim Elements 1[c] and 8[b] on out-of-sequence PDUs and out-of-sequence SDUs being "a distinction without a difference." This is wrong for multiple reasons.

First, as Dr. Min explained in detail, a PDU is not synonymous with an SDU. Although they are related (e.g., the SDU is the payload of the PDU), they are not equivalents. *See* EX2012, ¶¶ 50-51, 114. Of note, Dr. Min explained "in-sequence communications (including reordering) of SDUs are performed based on the sequence numbers for the PDCP SDUs, which individually may be transported

via the PDCP PDUs from different one of the multiple PDCP entities. Therefore, the sequence of SDUs is based on the sequence number of the SDUs, not based on received PDCP PDUs.” EX2012, ¶ 51.

Second, the Reply fails to show how Element 1[c] requires that the RRC message carry information related to an in-sequence timer “for the PDCP SDUs,” nor does it point to an actual PDCP-Config IE for such timer information in Koskinen. See EX1005, ¶¶ 38–39. As Dr. Min explained, *nothing* in Koskinen’s RRC discussion teaches RRC delivery of PDCP SDU-focused in-sequence timer information. EX2012, ¶¶ 118–121. Koskinen describes observing a gap in PDCP PDUs, starting a timer upon that observation, and configuring the timer’s expiry value by RRC, but it does not disclose the UE receiving, via RRC, “information related to an in-sequence timer for the PDCP SDUs,” which is independently required by element 1[c]. EX1005, ¶¶ 37–39. Paragraph 38 of Koskinen explains that “a timer, such as a reordering timer, can be started ... whenever a gap in the received protocol data units is observed,” and paragraph 39 states “the timer's expiry value can be configured by [RRC],” but neither passage identifies an RRC message that provides information for “the PDCP SDUs” as claimed. EX1005, ¶¶ 38–39.

Koskinen repeatedly frames its timer in terms of gap observation in PDUs and

later delivery of SDUs upon expiry, which is conceptually distinct from the '573 Patent's PDCP-SDU-triggered procedures for initiating a PDCP in-sequence timer and delivering SDUs pre- or post-expiry based on SDU receipt, leaving the "for the PDCP SDUs" requirement of the claims unmet by Koskinen. EX1005, ¶¶ 38–39; EX1001, 13:43–14:44. Further, although Koskinen discusses configuration "by RRC," Koskinen fails to disclose or suggest an RRC message directed to "information related to an in-sequence timer for the PDCP SDUs" or a PDCP-Config IE carrying that information, which are required by Claims 1 and 8. EX1005, ¶ 39; EX2012, ¶¶ 118–121.

2. Elements 1[e], 1[f], 8[e] & 8[f]

Petitioner's Reply leans on the general teachings of 3GPP TS 36.331 and the Board's *preliminary* observation that a POSITA could place "duration information about the timer in the IE" (DI at 14), but those statements do not supply the missing specific PDCP-Config IE field the claims recite, *i.e.*, a PDCP-configuration IE within an RRC message that includes a field indicating a value of the in-sequence timer. Petitioner still does not point to any PDCP-Config field for an in-sequence timer in Koskinen and instead relies on conclusory assertions in the "Petition's reliance on obviousness and that Koskinen expressly discloses to use a timer in the

PDCCP layer (and how to do it).” Pet. Reply at 15 (citing Pet. 18-19); *see also* EX1005, ¶ 39.

In contrast, the ’573 Patent exemplifies these claimed elements in Table 1’s PDCCP-Config entry “inseqTimer,” which is a named PDCCP-configuration IE field expressly “indicat[ing] an in-sequence timer value.” Koskinen does not identify any PDCCP-Config IE—let alone a field that indicates an in-sequence timer value for PDCCP SDUs. *See* EX1001, 15:37–45, Table 1; EX1005, ¶¶ 37–39. Dr. Min explained that relying on RLC t-Reordering context and generalized RRC messaging, as purported by Petitioner, does not disclose a PDCCP-Config IE for an SDU-triggered PDCCP timer because the traditional RRC IEs used to communicate information do not include a “PDCCP-configuration IE, which includes a field indicating a value of the in-sequence timer for a received PDCCP SDU.” EX2012, ¶¶ 119–122. Further, Dr. Min explained that the 3GPP technical specifications (*e.g.*, 3GPP TS 36.331 (EX1014) and 3GPP TS 36.322 (EX1013)) do not disclose a PDCCP-configuration IE being provided to the UE via RRC to indicate a value for the t-reordering timer disclosed in Koskinen. EX2012, ¶ 123-124. Dr. Min explained that a POSITA considering the combined teachings of Koskinen, 3GPP TS 36.322, and 3GPP TS 36.331, which teach t-reordering timers used for the RLC layer, would

not be taught how to convert these t-reordering timers for the RLC layer into a different, in-sequence timer to be configured for the PDCP layer and the associated PDCP-configuration IE communicated via RRC. *Id.* Therefore, Koskinen, either alone or in view of Petitioner's reliance on 3GPP TS 36.322 and 3GPP TS 36.331, does not render obvious Claim Elements 1[e], 1[f], 8[e], and 8[f].

3. Dependent Claims

The Reply's attacks on the dependent claims are similarly unavailing.¹ The '573 Patent describes PDCP-layer operations of confirming PDCP SNs of obtained PDCP SDUs (claims 2, 9), driving an in-sequence timer with respect to PDCP SN #n when PDCP SN #n-1 is missed (claims 3, 10), delivering SDUs in order before expiry when the prior SDU is obtained (claims 4, 12), and delivering at expiry even though the prior SDU is absent (claims 5, 11), all within a PDCP entity governed by the PDCP-Config "inseqTimer" field. *See e.g.*, EX1001, 13:43-14:55; 15:37-65; FIG. 14.; Table 1. In contrast, Koskinen focuses on observing PDU gaps,

¹ Regarding Footnote No. 5 of the Reply, Petitioner misunderstands Dr. Min's testimony – neither Patent Owner nor Dr. Min is opining that "multiple in-sequence timers are needed." Pet. Reply at 16, fn. 5.

configuring a timer by RRC, and preventing gaps from blocking delivery upon expiry, without disclosing the PDCP-level confirming, timer-driving, and pre-/post-expiry SDU-delivery semantics tied to a PDCP in-sequence timer and PDCP-Config field as the dependent claims recite. EX1005, ¶¶ 18, 37–39, FIG. 2.

B. Ground 2: Sammour Does not Cure the Deficiencies of Koskinen

In its Reply, Petitioner now disclaims any reliance on Sammour's Flush Timer as the claimed in-sequence timer and asserts that Sammour is used only to provide an IE carriage mechanism for a timer value in PDCP-Config. Regardless, this still leaves Element 1[c] unsatisfied because there remains no disclosure of receiving, via RRC, "information related to an in-sequence timer for the PDCP SDUs," either in Koskinen (as acknowledged by Petitioner (Pet. Reply at 19-20)) or Sammour.

Sammour catalogs PDCP IEs, such as "In sequence delivery IE," "Reordering Stop Mode IE," and "Flush Timer IE," and confirms that PDCP IEs can be delivered by RRC. EX1006, ¶¶ 145–153. But Sammour does not identify any PDCP IE carrying information related to "an in-sequence timer for the PDCP SDUs." Nor does Sammour, on Petitioner's narrowed theory, fill the missing content of the timer information that must be "for the PDCP SDUs," because its IEs address either lossless behavior, in-sequence delivery flags, or handover-specific reordering stop

behavior, **not** PDCP-SDU-triggered timer information. EX1006, ¶¶ 142–153.

Petitioner's Reply confirmation that it is not relying on Sammour's flush timer to replace Koskinen's timer underscores that Petitioner has not identified the specific PDCP-Config field recited in Elements 1[e] and 1[f] (and similarly 8[e], and 8[f]), and a generic IE or IE configured for another purpose cannot substitute for a missing, named PDCP-Config field for the claimed in-sequence timer.

Regarding the challenged dependent claims, because the combination still lacks a PDCP-Config "inseqTimer" field and a PDCP-layer in-sequence timer "for the PDCP SDUs," it necessarily fails to disclose the PDCP-centric confirming, timer-driving, and delivery behaviors recited in the dependent claims and described in the '573 patent. EX2012, ¶¶ 142–151.

C. Ground 3: Deenoo and Sammour's Lack of Disclosure Cannot Support Obviousness of the Challenged Claims

1. The Reply's Hindsight Reconstruction Fails

Petitioner's Reply largely repeats its insufficient and conclusory motivations to combine set forth in the Petition. *See* Pet. Reply at 22-23. The Reply does not address that Sammour fails to explain how the flush timer IE and PDCP reordering IEs could "reliably configure Deenoo's reordering timer when small cells are present

with the macro cell and both sending data to the UE.” EX2012, ¶¶ 156-162; Pet. at 46. As discussed above, generic disclosure of “using RRC,” as Petitioner asserts Deenoo teaches, does not teach a POSITA to implement the flush timer IE and PDCP reordering IEs into Deenoo’s configuration of multiple RLC entities receiving PDCP PDUs, where there is no disclosure of sequence numbers associated with a PDCP SDU. EX2012, ¶¶ 156-162.

2. Elements 1[c] and 8[b]

Petitioner's Reply leans on Deenoo’s general RRC statements to suggest obviousness for timer-value signaling. Pet. Reply at 24-25. But Deenoo’s disclosure of the “Macro eNB may configure the measurement parameters/events/triggers for the UE in RRC CONNECTED mode” (EX1007, ¶ 173), and similar disclosures in paragraphs 142, 153, and 198 relied upon by Petitioner (Pet. Reply at 24), do **not** show using RRC to communicate PDCP-SDU-focused in-sequence timer information, as required by Claims 1 and 8.

Deenoo describes a PDCP reordering algorithm with a “re-ordering timer” and acknowledges RRC configuration for other UE parameters, such as measurements, but it does not disclose the UE receiving, via RRC, “information related to an in-sequence timer for the PDCP SDUs,” as required by Element 1[c].

See EX1007, ¶¶ 142–143; ¶¶205–212. As explained above for Sammour, using PDCP IEs generically does not supply content that is “for the PDCP SDUs,” and Sammour does not identify any IE for PDCP SDU in-sequence timer information. EX1006, ¶¶ 145–153.

In addition, Petitioner's narrowed reliance to the first two sentences of paragraph 211 and the newly annotated version of FIG. 8 does not change that **Deenoo's operative disclosures concern reordering and status procedures, not RRC delivery of PDCP-SDU-focused in-sequence timer data.** EX1007, ¶¶ 208–211. Further, contrary to the Reply's attempts to state otherwise, Dr. Lo's testimony confirms his reliance on generic RRC configuration concepts rather than identifying a PDCP-Config IE for an in-sequence timer “for the PDCP SDUs,” which concedes the absence of a specific teaching for Element 1[c]. See EX2013, 94:2–97:2.

3. Elements 1[e], 1[f], 8[e] & 8[f]

Petitioner's Reply leaps to the conclusion that “the *combination* of Deenoo and Sammour renders obvious sequence numbers for PDCP SDUs.” Pet. Reply at 25. But in doing so, Petitioner overlooks that the asserted references' lack of disclosure of the PDCP-configuration IE for PDCP SDU in-sequence timer information is fatal. The '573 Patent's claims require that the PDCP SDUs are

indicated by a predefined PDCP sequence number and the related RRC message includes a PDCP-configuration IE indicating the value of the in-sequence timers for the PDCP SDUs. Contrary to Petitioner's assertions, the missing disclosure of the PDCP-configuration IE for PDCP SDU information means that the combined disclosure of Deenoo and Sammour cannot teach the claimed UE receiving the PDCP-configuration IE, via an RRC message, which includes a field indicating a value of the in-sequence timer for a received PDCP SDU to serve as a timer for receiving a missed PDCP SDU. EX2012, ¶ 177. Deenoo teaches configuring "measurement parameters/events/triggers for the UE in an RRC CONNECTED mode" and Sammour teaches a "Reordering Stop Mode IE" and a "Flush Timer IE" that are provided via RRC. However, even if Sammour's IEs can be configured using Deenoo's RRC parameter configuration process, the resulting combination still fails to disclose a PDCP-based in-sequence timer for a received PDCP SDU that sets a time (signaled via a PDCP-configuration IE) for receiving a missed PDCP SDU having a sequence number that is previous in sequence number to the received PDCP SDU. EX2012, ¶¶ 179-181.

Neither Deenoo nor Sammour identifies a PDCP-Config IE field "indicating a value of the in-sequence timer," and Petitioner does not point to any PDCP IE

corresponding to the '573 Patent's named "inseqTimer" field in Table 1. EX1007, ¶¶ 208–211; EX1006, ¶¶ 145–153; EX2012, ¶¶ 174–182. Sammour's "Reordering Stop Mode IE" and "Flush Timer IE" address stopping reordering after handover or defining a flush value for that handover context, not a PDCP-Config field indicating an in-sequence timer value for PDCP SDUs as claimed. EX1006, ¶¶ 148–153. Accordingly, contrary to the Reply's conclusory assertion otherwise, the alleged combination of Deenoo and Sammour fails to render obvious Claim Elements 1[e], 1[f], 8[e], and 8[f].

4. Dependent Claims

Because the combination of Deenoo and Sammour still lacks the PDCP-Config "inseqTimer" field and a PDCP-SDU-triggered in-sequence timer, it does not teach the PDCP-layer confirming, timer-driving, and pre-/post-expiry SDU-delivery operations that the dependent claims require. *See* EX1007, ¶¶ 208–212; EX1006, ¶¶ 145–153; EX2012 ¶¶ 157–162, 174–180.

V. CONCLUSION

For all of the foregoing reasons, Patent Owner respectfully requests that the Board confirm the patentability of Claims 1-5 and 8-12 of U.S. Patent No. 10,863,573.

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Patent No. 10,863,573
Patent Owner's Sur-Reply

Dated: May 13, 2026

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CERTIFICATE OF SERVICE

I hereby certify that on this 13th day of May, 2026, a copy of the attached **PATENT OWNER'S SUR-REPLY** was served by electronic mail to the attorneys of record, at the following addresses:

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CERTIFICATION PURSUANT TO 37 C.F.R. § 42.24(d)

Pursuant 37 CFR 42.24(d), the undersigned certifies that this Patent Owner's Sur-Reply complies with the type-volume limitation of 37 CFR § 42.24(a). The word count application of the word processing program used to prepare this Patent Owner's Sur-Reply indicates that it contains 3,684 words, excluding the parts of the brief exempted by 37 C.F.R. § 42.24(a).

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