

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS, INC.; INSTAGRAM, INC.; WHATSAPP LLC; META
PLATFORMS TECHNOLOGIES, LLC; AND GIPHY, INC.

Petitioners

v.

VL COLLECTIVE IP LLC

Patent Owner

Case IPR2023-00923
U.S. Patent 7,266,682

PATENT OWNER'S SUR-REPLY

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PATENT OWNER'S EXHIBIT LIST

Exhibit	Description
2001	Declaration of Jaime F. Cardenas-Navia in Support of Motion for Admission Pro Hac Vice
2002	The Secure Real-time Transport Protocol (SRTP)
2003	Compare Results for EX1005
2004	Declaration of Stuart Stubblebine in Support of Patent Owner's Response
2005	Curriculum Vitae of Stuart G. Stubblebine, Ph.D.
2006	Transmission Control Protocol: RFC 793
2007	User Datagram Protocol: RFC 768
2008	Shai Halevi and Hugo Krawczyk, <i>MMH: Software Message Authentication in the Gbit/Second Rates</i>
2009	2024-07-18 Deposition of Dr. Sylvia Hall-Ellis
2010	2024-07-19 Deposition of Dr. Henry Houh

I. INTRODUCTION

Petitioners' primary references are not prior art. All grounds of patentability thus fail.

Petitioners rely on either Handley or PacketCable as the primary reference for their invalidity theories. With respect to Handley, Petitioners fought tooth and nail to have their supplemental evidence related to public accessibility entered into the proceeding. Yet, in Reply, Petitioners do not cite any of their supplemental evidence, and do not even argue that Handley was publicly accessible before the critical date. Because the Petition also does not argue that Handley is prior art, PO's analysis of why Handley was not publicly accessible is uncontested, and Petitioners have forfeited the right to argue to the contrary. Handley is therefore not prior art.

As for PacketCable, Petitioners likewise sought to admit additional evidence post-institution—a supplemental declaration from a librarian, Dr. Hall-Ellis. PO did not contest its admission because, upon reviewing it, it was clear that it did not support the public accessibility of PacketCable. And in fact, Hall-Ellis provided an abundance of evidence at her deposition that confirms that PacketCable is not prior art—she admitted that she searched for but could not find evidence of PacketCable being accessible on the Internet or anywhere else as at the relevant time, that she has no personal knowledge about (and did not research) CableLabs' policies and processes for releasing documents, and that she found no evidence that people would

have been led to the PacketCable reference at the relevant time.

Petitioners' invalidity arguments also fail on the merits, as detailed below. The Board need not reach those issues, however, as neither Handley nor PacketCable is prior art.

II. HANDLEY AND PACKETCABLE ARE NOT PRIOR ART

A. Handley

1. Petitioners Forfeited the Right to Argue that Handley Was Publicly Accessible and to Rely on Supplemental Evidence.

Petitioners' Reply acknowledges PO's arguments that Handley is not prior art, but does not dispute any of PO's arguments on that point or affirmatively argue that Handley is prior art. Reply, 2. Petitioners thus forfeit the right to do so. *Unified Patents, LLC v. Gesture Technology Partners, LLC*, IPR2021-00917, Paper 31 at 33 (PTAB Nov. 21, 2022) (finding "that by failing to argue in the papers" a position "that should have been advanced in the Reply," petitioner waived the argument).

The Petition also does not argue in favor of Handley being prior art. Petition, 4. Petitioners thus wholly failed to argue that Handley is prior art in the pertinent papers, much less meet its burden of persuasion on the issue. Handley is thus not prior art. *Apple, Inc. v. Gesture Technology Partners, LLC*, IPR2021-00923, Paper 27 at 13-14 (PTAB Dec. 2, 2022) (finding waiver where minimal argument in petition was not explained further in reply); *Parus Holdings, Inc. v. Google LLC*, 70 F.4th 1365, 1372 (Fed. Cir. 2023) ("The burden of production cannot be met without

some combination of citing the relevant record evidence with specificity and explaining the significance of the produced material in briefs.”); *Apple Inc. v. Masimo Corp.*, IPR2022-01465, Paper 73, at 85-86 (PTAB Feb. 2, 2024).

Petitioners also do not cite the supplemental information regarding Handley (*i.e.*, Exhibits 1016-1018 and 1020-1028) in Reply, and thus forfeit the right to rely on it. Reply, 2. This forfeiture is of little significance given the forfeiture on the entire issue of the public accessibility of Handley, but it is a forfeiture nonetheless.

The only argument Petitioners make regarding the prior art status of Handley is that the Board’s ruling on their motion for supplemental information purportedly “confirmed” Handley’s alleged public accessibility, “thus, confirming Handley is . . . prior art.” Reply, 2. This argument is frivolous. The Board could not have ruled that Handley is prior art in the context of a motion to submit supplemental information—Petitioners did not request that relief and the Board did not grant it. Indeed, the Board’s order specifically noted that “Patent Owner is able to argue any publication or evidentiary issues . . . in the normal course of scheduled briefing.” Paper 28, 6. The prior art issue is to be decided in the Board’s final written decision. And Petitioners have now forfeited the right to argue that Handley is prior art.

Petitioners do not claim that they are incorporating their arguments from the Motion to Submit Supplemental Information into their Reply. In all events, doing so would be improper. *In-Depth Geophysical Inc. v. ConocoPhillips Co.*, IPR2019-

00850, Paper 56 at 35 (PTAB Sept. 3, 2020) (“Our Rules unambiguously foreclose such attempts to incorporate by reference arguments from other documents.”); *Apple Inc. v. Qualcomm Inc.*, IPR2018-01279, Paper 45 at 17-18 (PTAB Jan. 2, 2020) (“We decline Petitioner’s invitation to consider arguments presented in papers outside of the Petition and Petitioner’s Reply.”). Moreover, simply placing Exhibits 1016-1018 and 1020-1028 into the record does not mean they can be considered; to find otherwise would “eviscerate all page limits” on Petitioners “while maintaining restrictions on” Patent Owner. *Parus*, 70 F.4th at 1372; 37 C.F.R. § 42.24(c)(1); 37 C.F.R. § 42.6(a)(3); *see also In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (“[T]he Board must base its decision on arguments that were advanced by a party, and to which the opposing party was given a chance to respond.”); *Nike, Inc. v. Adidas AG*, 955 F.3d 45, 52 (Fed. Cir. 2020) (citing *Magnum Oil Tools*, 829 F.3d at 1380); *Apple Inc. v. Corephotonics, Ltd.*, 81 F.4th 1353, 1362 (Fed. Cir. 2023).

2. In All Events, Petitioners’ Supplemental Evidence Proves That Handley Is Not Prior Art.

In view of Petitioners’ forfeitures, the Board can resolve the prior art status of Handley without assessing the pertinent evidence or law. If the Board is inclined to consider the merits, taking into account Petitioners’ supplemental evidence, then the outcome is the same, as the supplemental evidence further confirms that Handley

(EX1005) is not prior art.

a. Handley (EX1005) Was Not Published in Computer Networks Journal on February 11, 1999.

The only public accessibility theory disclosed in the Petition, and thus the only one properly at issue in this proceeding, is that Handley (EX1005) was allegedly “published [on] February 11, 1999, in the Computer Networks journal.” Pet., 4. This assertion, which Petitioners made repeatedly to the Board to obtain institution, is false. Paper 14 at 1.

A different document, EX1028, is what actually published in Computer Networks journal in February 1999. It is materially different than Handley (EX1005). EX1028 has a different title, authorship, and substantive content than Handley. *Compare* EX1005 *with* EX1027 *and* 1028; *see* EX2003 (identifying differences between EX1005 and EX1028, including entire sections, paragraphs, footnotes, figures, bibliographic references, copyright, and publisher marks that are in one and not the other, as well as different pagination and formatting).

EX1005 is different from EX1028 because, as Dr. Crowcroft, an author of Handley, states, EX1005 is a “[d]raft version[]” of the article that eventually published in Computer Networks Journal, *i.e.*, EX1028. EX1016 ¶¶13-18. Crowcroft also confirmed that there are “differences” between EX1005 and a different “version” (EX1028) that he describes as the version that was actually

“published in Computer Networks.” *Id.* ¶¶15-16. Houh’s declaration also indicates that EX1005 is a “version” of an article “*before* being formally published in Computer Networks” that “[led] to the publication of EX1027 and EX1028” (*i.e.*, different references) in Computer Networks, which further confirms that EX1005 itself was not published in Computer Networks. EX1017 ¶13.

b. Alternative Theories Should Not Be Considered.

In its Reply to PO’s Preliminary Response, Petitioners raised two additional theories for why Handley (EX1005) is prior art. Petitioners asserted that Handley was available on a UCL website and on an FTP server, and is thus prior art. Paper 14, 1-3. Because these theories are not in the Petition, they are not at issue in this proceeding. Pet., 4. These theories are also not addressed in Petitioners’ Reply, and so have been forfeited. Reply, 2.

Federal Circuit precedent shows that each public accessibility theory must be assessed independently. In *Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1369-70 (Fed. Cir. 2019), Samsung presented three public accessibility theories on appeal: that the reference was (1) disclosed at meetings, (2) uploaded to websites, and (3) emailed to a listserv. *Id.* Each of those theories was deemed a ***separate argument*** subject to the rules of timely disclosure, and the court found the first had been waived because Samsung did not previously argue that the reference was publicly accessible *in that way*. *Id.* On remand, the Board likewise refused to

consider a public accessibility theory based on a mode of dissemination not raised in the petition, finding it to be “a new argument or theory of public disclosure” and therefore waived. *Samsung Electronics Co., Ltd. v. Infobridge PTE, Ltd.*, IPR2017-00099, Paper 43 at 42 (PTAB Nov. 13, 2020).

Here, the only public disclosure theory in the Petition is that Handley (EX1005) itself was published in Computer Networks journal on February 11, 1999. Pet., 4. The Petition does not argue that Handley (EX1005) was publicly disclosed based on EX1005 being purportedly accessible via the UCL website or an FTP. *See id.* Petitioners waived those different public accessibility theories by not including them in the Petition.

Liquidia is distinguishable and does not support a finding of non-waiver here. The Board in *Liquidia* found the petitioner’s arguments were raised in the petition. *Liquidia Technologies, Inc. v. United Therapeutics Corp.*, IPR2021-00406, Paper 78 at 10 (PTAB Jul. 19, 2022); *see id.* Paper 29 at 12-18 and Paper 44 at 2-9. The Federal Circuit agreed, stating that “*Liquidia*’s arguments were not inconsistent with, and therefore not new over, the grounds raised in its IPR petition.” *United Therapeutics Corp. v. Liquidia Techs., Inc.*, 2023 WL 8794633, at *3 (Fed. Cir. Dec. 20, 2023).

This case is different because Petitioners’ new public accessibility theories were **not** included in the Petition. POPR, 35-36. Moreover, Petitioners’ new

arguments—that EX1005 was publicly accessible on the UCL website and FTP—**are** inconsistent with the Petition because they rely on “entirely new rationale” and “proceed in a new direction” than the Petition. Pet., 4; Paper 28, 2-6; CTPG at 74; *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369-70 (Fed. Cir. 2016). Additionally, Petitioners did not advance these theories in its Reply to the POR, thereby forfeiting them. These theories are thus firmly not part of the proceeding.

c. Even If Considered, the Alternative Theories Fail.

Even if Crowcroft’s testimony that he “uploaded” EX1005 to his UCL website and an FTP server is credited, such “technical accessibility” is insufficient. *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 773-74 (Fed. Cir. 2018). Instead, Petitioners must show that EX1005 was “disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.” *Id.* at 772 (cleaned up).

As in other cases where references were not found publicly accessible, here, there is no evidence that EX1005 “was viewed or downloaded” at the relevant time, or that “a person interested” in the relevant subject matter “would be independently aware of the web address” for Crowcroft’s UCL website or ftp site at the relevant time. *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1349-50 (Fed. Cir. 2016).

There is also no evidence that “an anonymous user skilled in the art [at the relevant time] would have gained access to the UCL website or FTP server and would have freely navigated through the directory structure to find [EX1005].” *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1196-97 (Fed. Cir. 2008). That Crowcroft knew where to find EX1005—which is all the evidence shows—is insufficient. *Samsung*, 929 F.3d at 1371-73 (“[A] work is not publicly accessible if the only people who know how to find it are the ones who created it.”).

Petitioners have never argued that the eventual publication of portions of Handley (EX1005) in EX1027 and EX1028 renders Handley itself a printed publication, or that EX1027 and EX1028 can be substituted into the proceeding in place of Handley. Indeed, Petitioners have denied that they are making these arguments. Paper 27, 1-3. This makes sense. These are not credible theories.

The “teachings” of EX1005 divorced from its media are not a “printed publication.” See *In re Klopfenstein*, 380 F.3d 1345, 1349 n.4 (Fed. Cir. 2004) (information presented orally at a conference “that includes neither slides nor copies of the presentation is without question not a ‘printed publication.’”). Thus, those “teachings” cannot be the basis of a ground of unpatentability. 35 U.S.C. § 311(b). Nor can Exhibits 1027 and 1028 stand in for EX1005 as the asserted printed publication. Paper 28 at 4; see *B/E Aerospace, Inc. v. C & D Zodiac, Inc.*, 709 F. App’x 687, 698 (Fed. Cir. 2017) (petitioner’s burden was to establish that “the

version of the [reference] in the record was publicly accessible” and that the POSITA “could have located the relevant version of the [reference] before the priority date”).

B. PacketCable

In arguing for institution of this IPR, Petitioners and Houh made numerous unsupported factual assertions about the public accessibility of PacketCable and implied that additional evidence would ultimately prove Petitioners to be correct. *See, e.g.*, Paper 14, 3. The Board took these statements at face value and thus instituted review. Paper 16, 26-28. Months later, after briefing a Motion to Submit Supplemental Information (Paper 21) and continuing with this IPR proceeding, Petitioners’ and Houh’s representations to the Board about PacketCable remain unsubstantiated or have been proven false.

For example, Petitioners represented that “Reasonably diligent POSITAs would confirm with CableLabs.” Paper 14, 3. But Petitioners have not proffered any supporting evidence for this statement. Petitioners also averred that “[a] standard’s purpose is to be adopted, thus inferring public accessibility,” implying that CableLabs was either part of a standard or at least related to a standard. *Id.* Here again, there is zero evidence supporting Petitioners’ statement to the Board.

Following institution, the only evidence Petitioners sought to admit was a supplemental declaration from Hall-Ellis that has merely three paragraphs of analysis. EX1019, ¶¶18-20. It distills down to an assertion that PacketCable was

publicly available by December 1, 1999 because PacketCable has that date stamped on it and describes the date as the “release” date. This falls far short of meeting the standard of public accessibility.

Petitioners nonetheless assert that Hall-Ellis “confirmed” that PacketCable was allegedly public accessible by December 1, 1999. Reply, 3. But Hall-Ellis’ only evidence of PacketCable’s accessibility is the *present-day* CableLabs website where she found it, which says nothing about PacketCable’s availability in 1999 or 2000. *Id.*, ¶19; EX2009 57:12-22; *see Blue Calypso*, 815 F.3d at 1349 (evidence of accessibility at the relevant time required); EX2009 24:22-25:18.

Hall-Ellis also conceded several facts during her deposition that undermine the public accessibility of PacketCable but were not disclosed in her declaration. First, she checked to see if PacketCable was available on the Internet as of December 1, 1999, but found no evidence that it was; this included checking on the Wayback Machine. EX2009 24:22-26:8, 28:9-30:17, 32:7-12, 35:19-36:12. Second, after conducting a “pretty thorough search,” as “that is my practice, that is my procedure,” she couldn’t find proof that PacketCable was accessible anywhere else. *Id.*, 36:13-37:15. Third, she confirmed that she found no evidence that PacketCable was catalogued, indexed, or in a library. EX2009 36:13-37:15, 50:9-51:19 (“No cataloguing, no indexing, and no library presence that I can identify.”).

Despite finding no evidence that PacketCable was accessible at the relevant

time, Hall-Ellis concludes that PacketCable was publicly accessible online by December 1, 1999. EX1019, ¶¶20-21; EX2009 24:22-25:5. Her conclusion is based on the word “release” that appears in the “Revision History” information on page 3 of PacketCable. EX1019, ¶18; EX2009 16:10-17:18. However, Hall-Ellis admits that PacketCable says nothing about what “release” means, EX2009 17:19-18:1, that she has no personal knowledge about CableLabs’ policies and processes for releasing documents, EX2009 19:4-19, 37:21-38:15, and that she did not even research PacketCable’s procedures for releasing documents in the relevant timeframe, EX2009 20:9-15. Hall-Ellis does not know who wrote PacketCable, how many people wrote PacketCable, who the member companies of PacketCable were in 1999, or any people at PacketCable. EX2009, 11:9-12:22, 30:18-31:8. Absent such evidence, her opinions amount to no more than speculation. *In re Lister*, 583 F.3d 1307, 1317 (Fed. Cir. 2009) (“[A]bsent any evidence pertaining to the general practices of the” entity that allegedly made the reference accessible, “any presumption along those lines would be pure speculation.”). EX2009, 38:16-39:3.

Petitioners and Hall-Ellis infer public accessibility from CableLabs’ purported intent to disseminate PacketCable to members of the industry. Reply, 3. But their inferences are insufficient to prove public accessibility because there is no evidence that PacketCable was actually disseminated at the relevant time. *Norian Corp. v. Stryker Corp.*, 363 F.3d 1321, 1330 (Fed. Cir. 2004) (generalized testimony

about dissemination practices insufficient absent evidence of actual dissemination); EX2009, 19:4-19 (“they [CableLabs] are not particularly interested in interacting with the public”).

Moreover, Petitioners provide **no** argument or explanation as to whether or how the interested POSITA, exercising reasonable diligence, would have been able to locate PacketCable *before* January 18, 2000. Reply, 2-3; *See Blue Calypso*, 815 F.3d at 1349. Hall-Ellis admits she has never met the qualifications of the POSITA (including at the relevant time), EX2009 52:11-14, 55:4-18, and that she found no “evidence of other websites or resources directing people to the PacketCable reference as of December 1999.” EX2009 51:20-52:8.

Furthermore, the copyright date on PacketCable does not indicate when or how PacketCable was made *publicly accessible* such that the POSITA exercising reasonable diligence would have been able to locate it. *See In-Depth Geophysical, Inc. v. Conocophillips Co.*, IPR2019-00849, Paper 14 at 9-11 (PTAB Sept. 6, 2019) (copyright date and uncorroborated date on cover insufficient). Indeed, Hall-Ellis found no records for PacketCable in the database of the Copyright Office. EX2009 57:12-22.

Based on the evidence as a whole, Petitioners have not shown that PacketCable was publicly accessible before January 18, 2000.

C. Petitioners' Conduct Regarding the Prior Art Status of Handley and PacketCable Warrants Sanctions

The only logical explanation for the series of events that have taken place in this IPR is that Petitioners never had a good faith belief about the prior art status of Handley and PacketCable. *Supra*, Section II.A, II.B. Post-institution, Petitioners have failed to present credible evidence and arguments about their public accessibility. For Handley, Petitioners' supplemental evidence disproved the only theory as to how it is prior art that was in the Petition, leading Petitioners to ultimately forfeit the issue in Reply. For PacketCable, Petitioners' supplemental evidence did not prove up any of the representations Petitioners made to the Board pre-institution. The Hall-Ellis declaration also omitted evidence she discovered and analysis she performed when preparing the declaration that was unfavorable to Petitioners. EX2009 26:3-8, 32:7-12, 36:13-37:15, 36:13-37:15, 50:9-51:19. Petitioners' pre-institution factual representations were not based on any evidence, but merely wishful thinking. Such misuse of government resources should not be condoned.

Patent Owner thus intends to request leave to file a motion for sanctions following the issuance of a final written decision. Patent Owner intends to request monetary sanctions to compensate it for its fees and costs in having to continue with this proceeding post-institution, as well as any other relief that is warranted at that

time. This sanction, at a minimum, is warranted and necessary to penalize Petitioners for their behavior and deter future similar behavior by them or others. The Board has the authority to grant such sanctions. 37 C.F.R. § 42.12(a); *Apple Inc. v. Voip-Pal.com, Inc.*, IPR2016-01198, Paper 70 at 9–10 (PTAB Dec. 21, 2018) (Boalick, C.J.) (citing 37 C.F.R. § 42.11(d)(4)), *aff'd*, 976 F.3d 1316, 1326 (Fed. Cir. 2020).

III. GROUND I

A. **The POSITA would not have been motivated to combine Handley and Basturk.**

1. **Under Petitioners’ theory, Basturk’s “on-the-fly” processing cannot practice the claims and is inconsistent with basic principles of packet processing using a protocol stack and the OSI model.**

Basturk addresses security problems at the transport layer. EX1006, 1. Basturk’s solution is a transport protocol with added security features. *Id.* at 1, 4. Basturk teaches that those added security features come with processing latencies caused by the need to retrieve and process context information. EX1006, 7-8 (“INCREASED PROCESSING”), 12-13. Basturk teaches minimizing those specific latencies by performing signature processing “on-the-fly.” EX1006, 7-8, 12-13. EX2004, ¶¶84-89. Basturk teaches three specific “design rules” required to achieve “on-the-fly” processing, and that achieving “on-the-fly” processing depends on two “major components.” *Id.*; EX1006, 8, 12-13. Those specific design rules and “major

components” relate to ensuring that signature (*i.e.*, MAC) processing itself is not slowed by context retrieval or the nature of the signature algorithm. *Id.*¹

Petitioners and Houh view Basturk’s “on-the-fly” processing differently. Based on Basturk’s statement that “MAC generation (verification) should be carried out as data transmissions (receptions) proceeds,” they interpret Basturk to mean that “the process of computing the MAC [occurs] in parallel to the transmission of the packet.” Reply, 4-5; EX1033, ¶¶12-14. Houh explained during his deposition that he and Petitioners interpret Basturk to mean that “on-the-fly” processing is achieved by starting the MAC computation and inserting the MAC into the packet “in parallel to the actual transmission of a packet,” meaning at the instant the last byte of the packet is leaving the transmitter through the device interface, which he admitted is “clearly at a lower layer.” EX2010, 65:6-13, 72:1-16, 74:11-75:3, 85:20-86:7, 92:6-93:22, 95:18-101:2, 102:13-104:9, 104:11-106:10, 108:10-110:9, 116:18-119:16. That “lower layer” is, of course, the physical layer, which is the lowest layer in the OSI model. EX2004, ¶¶30-35; EX2010, 129:14-132:11. Houh was unequivocal that with “on-the-fly” processing, MAC generation and insertion happens “at a lower layer,” and not at the application layer. EX2010, 66:1-9, 108:10-110:9, 116:18-

¹ Placing the signature in a trailer is not one of Basturk’s “design rules” or “major components” for achieving “on-the-fly.” EX2004, ¶¶84-89; EX2010, 55:16-56:15.

119:16.

Under Petitioners’ theory, Basturk’s on-the-fly processing cannot practice claim 1. Claim 1 requires providing authentication “by inserting...authentication data at end of a whole RTP packet payload” specifically “as an *application* protocol on an *application* layer,” not at the physical layer or other lower layer. EX1001, 7:54-67. And there is no dispute that “application layer” in the ’682 patent means “the layers above the transport layer (layers above 4).” POR, 14-18; Reply, 1; EX1033, ¶10; EX2010, 24:16-27:2. But, under Petitioners’ theory, the computation and insertion of the MAC/signature (*i.e.*, the alleged “authentication information”) occurs at a “lower layer” (*i.e.*, the physical layer)—not the application layer.

Petitioners’ theory also defies basic principles of packet processing using a protocol stack and the OSI model. As Dr. Stubblebine explained, packets are processed along the layers of a protocol stack using an encapsulation process where a PDU is generated at higher layer (starting with the application layer) and passed down and encapsulated at the next lower layer to form a lower layer PDU. EX2004, ¶¶30-35. Houh agrees that PDUs in a protocol stack are processed this way. EX2010, 153:3-154:2, 161:22-164:9. Petitioners’ theory that Basturk’s transport layer MAC is not computed or inserted until physical layer processing defies these principles. EX2004, ¶¶108, 129-132.

2. Petitioners’ interpretation of the OSI model is inconsistent with the ’682 patent’s lexicography.

Petitioners’ argument that “strict boundary requirements between layers do not exist” is inconsistent with the inventors’ lexicography. Reply 5-6. The claims require providing authentication “as an *application* protocol on an *application* layer.” The ’682 patent defines the “application layer” as “the layers above the transport layer (layers above 4),” and “application protocol” as “the protocol for communication between a transmitter application layer situated above the transport layer and a receiver application layer situated above the transport layer.” POR, 14-18. Petitioners do not dispute this. Reply, 1; EX1033, ¶10. That there may not be strict boundaries between sublayers *within* the application layer (*i.e.*, between layers 5 through 7) does not negate patent’s distinction between the application layer (“layers above 4”) and lower layers (*i.e.*, layer 4 and below). *Grace Instrument Indus., LLC v. Chandler Instruments Co., LLC*, 57 F.4th 1001, 1010 (Fed. Cir. 2023).

3. Basturk’s protocol *extends*, and therefore includes, standard transport level reliability features, making it incompatible with Handley.

Petitioners’ attempt to distinguish “*secure* delivery” from “*reliable* delivery” misses the point. Reply 8-11. Basturk teaches that its protocol is “an *extension* of the standard transport level reliability feature to the more adversarial setting we are discussing,” *i.e.*, it *adds* security to reliability. EX1006, 4 (emphasis added); EX2004, ¶77; EX2010, 126:15-127:19 (Basturk’s “extension” is the addition of

security). Accordingly, Basturk is a reliable delivery protocol, just a secure one. EX2004, ¶¶77, 111-116. Basturk's *addition* of security features does not remove the standard reliability characteristics that make it incompatible with Handley's use of RTP over UDP, and Petitioners do not show otherwise. *Id.*

4. Basturk's "on-the-fly" processing has no purpose in Handley's architecture because, as Petitioners admit, Handley does not use a signature or MAC for authentication.

Petitioners admit that "Handley does not disclose the use of a MAC or signatures" for authentication. Reply 14; ; EX1033, ¶39.² Accordingly, the alleged speed and efficiency benefits of generating a MAC using Basturk's "on-the-fly" processing do not motivate combining Basturk's "on-the-fly" processing with Handley's architecture because Handley has no MAC to compute "on-the-fly." Pet. 10-11; Reply 11-13.

B. Elements [1.1] and [1.2]

Under Petitioners' theory, Basturk's on-the-fly processing cannot practice elements [1.1] and [1.2]. These elements require providing authentication "by

² When confronted with this admission during his deposition, Houh contradicted his declaration testimony, arguing that Handley teaches the "functional equivalent" of a MAC. EX2010, 135:15-142:6. His new argument is inconsistent with Petitioners' argument and his prior opinion.

inserting...authentication data at end of a whole RTP packet payload” specifically “as an *application* protocol on an *application* layer,” not at the physical layer or other lower layer. EX1001, 7:54-67. And there is no dispute that “application layer” in the ’682 patent means “the layers above the transport layer (layers above 4).” POR, 14-18; Reply, 1; EX1033, ¶10; EX2010, 24:16-27:2. As explained above, however, under Petitioners’ theory, “Handley does not disclose the use of a MAC or signatures” for authentication,” Reply, 14-15; EX1033, ¶39, and Basturk’s computation and insertion of the MAC/signature (*i.e.*, the alleged “authentication information”) occurs at a “lower layer” (*i.e.*, the physical layer)—not the application layer, *see* §III.A.1, *supra*. Petitioners’ theory of combining Handley and Basturk therefore fails to disclose or render obvious the claimed invention.

Petitioners also identify no “authentication data” inserted “as an application protocol on an application layer” in either Handley or Basturk. Petitioners argue that successful decryption using symmetric key encryption (like DES) in Handley means that “the receiver authenticated the sender.” Reply, 15. But the claims require providing authentication “by inserting ... *authentication data*” in the RTP packet and “ascertaining ... whether the receiver knows the transmitter” based on that “*authentication data*.” EX1001, claim 1; *see* EX1001 at 7:6-48; EX2004, ¶57. Petitioners identify no such “authentication data” inserted into an RTP packet in Handley—indeed, Petitioners admit that “Handley does not disclose the use of a

MAC or signatures” for authentication. Reply, 14-15. Petitioners also do not dispute that Basturk computes the signature/MAC at the *transport* level based on a session key (α) that is never seen at the application layer. POR, 33-34; EX2010, 34:19-35:14, 68:18-69:16, 75:5-21, 120:5-122:17. Petitioners misleadingly quote Dr. Stubblebine out of context to suggest that he agrees that Basturk signs packets at the application layer. Reply, 15. But the signing Dr. Stubblebine was asked about is not part of Basturk’s transport protocol or on-the-fly processing, as Basturk itself indicates. EX1031, 170:18-174:19; EX2004, ¶¶76-77, ¶¶78-83.

Nor does Dr. Stubblebine apply an “overly strict interpretation of boundaries between layers.” Reply 17. Indeed, Houh agrees that that PDUs in a protocol stack are passed down and encapsulated from one layer to the next. EX2010, 153:3-154:2, 161:22-164:9. Petitioners argue that boundaries between layers do not matter because “hardware protocol accelerators” (or “dedicated hardware” in Basturk) can be used to insert data into a packet “at a lower layer in the protocol stack.” Reply, 6-7. But Petitioners’ theory is inconsistent with the ’682 patent’s lexicography, which distinguishes the “application layer” from lower layers. See §III.A.2, *supra*. Accordingly, inserting information “at a lower layer” using hardware acceleration (which Houh testified is the purpose of “dedicated hardware” in Basturk) does not satisfy the claims’ requirement of inserting authentication data “as an application protocol on an application layer.” EX2010, 67:3-13, 116:18-119:16.

C. Element [1.3]

Petitioners rest on their arguments for elements [1.1] and [1.2], which Patent Owner addressed above.

D. Independent Claims 25-28

Petitioners arguments for claims 25-28 fail for the same reasons as claim 1.

IV. GROUND II

A. Element [1.1]

Petitioners have not shown that RTP is implemented in PacketCable as an application protocol on an application layer, rather than as “a separate layer” from the application layer. POR42-45 (citing EX1008 at 4). As Dr. Stubblebine explains, PacketCable’s disclosure does not support Petitioners’ assumption that it is. *Id.* (citing ¶¶140-143). Petitioners do not show otherwise in their Reply. Instead, Petitioners turn to hindsight reasoning, suggesting that because the ’682 patent teaches implementing RTP “above layer 4” (defined as the application layer), PacketCable must be understood as teaching the same thing because it implements RTP. Reply 19-20. “However, the inventor’s own path itself never leads to a conclusion of obviousness; that is hindsight. What matters is the path that the person of ordinary skill in the art would have followed, as evidenced by the pertinent prior art.” *Millennium Pharms., Inc. v. Sandoz Inc.*, 862 F.3d 1356, 1367 (Fed. Cir. 2017) (cleaned up). Petitioners’ suggestion that PacketCable “does not preclude

applications on the [MTA] device from performing authentication” does not show that PacketCable discloses that the MTA application *does* perform authentication. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (warning against “the distortion caused by hindsight bias”). As Dr. Stubblebine explains, that is not disclosed in PacketCable. POR42-45; EX2004, ¶¶140-143.

B. Element [1.2]

Patent Owner explained that Petitioners have not shown explicit or inherent disclosure of element [1.2] in PacketCable, and that PacketCable is completely silent as to where a MAC would be located. POR, 45-47. Houh’s opinions that there are multiple places where a MAC could be placed demonstrates a lack of inherency. EX1033, ¶60; EX2010, 142:14-143:19; *PersonalWeb Techs., LLC v. Apple, Inc.*, 917 F.3d 1376, 1382 (Fed. Cir. 2019) (“[M]ere possibility is not enough.”). Indeed, Houh does not dispute that RTP does not define a trailer, or that RTP provides space in the header where it would be possible to place a MAC. Reply, 20-21; EX1033, ¶67; EX2010, 148:10-20.

Petitioners claim to have identified fragmentation issues that favor locating a MAC at the end of an RTP packet. Reply 21. They did not. Separating data into “segments” *within a packet* by placing a MAC between them is not packet fragmentation. EX1009, 43-44 (fragmentation results in the generation of multiple packets with their own headers); EX2010, 145:21-146:3, 147:16-20 (segmentation

separates data within a single packet).

Regardless, Petitioners have not shown that their “performance” impacts would be avoided by locating the MAC at the end of an RTP packet payload, given that RTP does not define a trailer (as petitioners concede), and the RTP payload is a variable-length field, which would require additional resources to find a MAC if located there. POR, 48-49; EX2004, ¶¶41-42, 150, 152. Moreover, Patent Owner explained why Petitioners’ “benefits” arguments are incorrect and do not motivate the use of a trailer. POR, 48-51.

Petitioners’ arguments that it allegedly would have been obvious to place PacketCable’s MAC at the end of the RTP packet in order to reduce packet transmission latency (*i.e.*, by performing computations in parallel with packet transmission) fail for the same reasons discussed above with respect to the combination of Handley and Basturk. *See* §§III.A-B, *supra*.

C. Element [1.3]

Petitioners rest on their arguments for elements [1.1] and [1.2], which Patent Owner addressed above.

D. Dependent Claims 22 and 24

Patent Owner explained that the Petition failed show how PacketCable allegedly discloses or renders obvious claims 22 and 24. POR 54. Rather than show that the Petition’s explanation was sufficient, Petitioners and their expert provided

new reasons and opinions. Reply, 24. The Board should decline to consider these untimely new arguments. CTPG at 74; *Intelligent Bio-Sys.*, 821 F.3d at 1369–70.

E. Independent Claims 25-28

Petitioners arguments for claims 25-28 fail for the same reasons as claim 1.

V. GROUND III

A. Motivation to Combine

Patent Owner explained that PacketCable’s MMH-based MAC is incompatible with Basturk’s “on-the-fly” requirements because computation of an MMH-based MAC requires a key and therefore cannot begin before context retrieval. POR, 56-58. Petitioners do not dispute this. Instead, Petitioners cite Dr. Stubblebine’s discussion of instances where context retrieval time is insignificant. Reply, 24-25. Petitioners miss the point. Computation of PacketCable’s MAC cannot start before context retrieval—whether or not that retrieval time is insignificant—thus it is incompatible with Basturk’s “on-the-fly” technique. POR, 56-58.

B. Dependent Claims 22 and 24

See §IV.D, *supra*.

C. Independent Claims 25-28

Petitioners’ arguments for claims 25-28 fail for the same reasons as claim 1.

VI. GROUND IV

A. Dependent Claims 22 and 24

See §IV.D, supra.

Dated: July 24, 2024

By: /Christine E. Lehman/
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CERTIFICATE OF COMPLIANCE

The undersigned hereby certifies that this Patent Owner's Sur-Reply complies with the type-volume limits of 37 C.F.R. § 42.24 and consists of 5,560 words, excluding the table of contents, a table of authorities, certificate of service, this certificate of compliance, or table of exhibits, and claim listing. The undersigned has relied on the word count feature of the word-processing system used to prepare this paper (Microsoft Word).

Dated: July 24, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing **PATENT OWNER'S SUR-REPLY** was served on July 24, 2024, via electronic mail to Meta_VideoLabs@kirkland.com, as agreed to by counsel for Petitioners, upon the following counsel:

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