UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMMSCOPE, INC.
Petitioner

v.

TQ DELTA, LLC,
Patent Owner

Case: IPR2022-00833
Patent No. 9,485,055

PRELIMINARY RESPONSE TO PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,485,055

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2002	Consolidation Order, *TQ Delta, LLC v. CommScope Holding Company, Inc., et al*., No. 2-21-cv-00310-JRG (E.D. Tex.)
2003	March 14, 2022 Declaration of Bruce McNair Regarding Claim Construction
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2005	March 14, 2022 Declaration of Richard D. Wesel, Ph.D. Regarding Claim Construction
2006	Nokia's Amended Invalidity Contentions, *TQ Delta, LLC v. CommScope Holding Company, Inc., et al*., No. 2-21-cv-00310-JRG (E.D. Tex.)
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I. Introduction

Patent Owner TQ Delta, LLC ("TQ Delta" or "Patent Owner") submits this Preliminary Patent Owner Response to the Petition filed by CommScope, Inc. ("CommScope" or "Petitioner") requesting *Inter Partes* Review ("IPR") of the Challenged Claims (claims 1, 4, 5, 7, 9, 10, 11, 15, 17, 19, and 20) of U.S. Pat. No. 9,485,055 (the "'055 Patent").

Institution should be denied. First, the Board should exercise deny institution for failure to list a real-party-in-interest (Nokia) and under *Fintiv*. TQ Delta has sued CommScope (and its co-Defendant Nokia) for infringing the '055 Patent, and that case is scheduled to go to trial in January 2022.

Should Board address the merits of this petition, the merits are not strong, much less compelling (as the Director's recent guidance requires). None of the references upon which the petition relies discloses the claimed "transceiver," which the parties agree (based on the construction of two District Courts) should be construed as a "communications device capable of transmitting and receiving data wherein the transmitter portion and receiver portion share at least some common circuitry." The petition does not show that any of the references teach the "share at least some common circuitry" language from the construction. The petition also does not show that any of the references teach "header field of the first type of packet" that comprises "a sequence identifier (SID) that is incremented after the first

type of packet is transmitted." The sequence numbers the petition points to do not have the claimed properties, as discussed below. For these reasons, and those below, TQ Delta respectfully requests that the Board deny the petition.

II. Factual Background

A. Background Of The Patented Technology

The '055 Patent originates from the inventive work of individuals at a company called Aware, Inc. ("Aware"). Ex. 1028 at ¶¶ 28–33. Aware was a leading innovator and provider of digital-subscriber-line ("DSL") technologies, which, generally, provide high-speed internet over traditional phone lines. *Id.* The inventor of the '055 Patent, Marcos Tzannes, has worked on DSL-related technologies for almost 30 years. *Id.* Mr. Tzannes was the head of the DSL technology group at Aware, and major semiconductor companies purchased Aware's chip designs. *Id.* Mr. Tzannes also has had significant involvement in developing industry standards for DSL (since 1997 and continuing today). *Id.*

The '055 Patent relates to retransmission of packets in a communications environment, particularly DSL environments. Ex. 1001 at 2:28–33, 8:66–9:4. Because DSL uses telephone lines, there is significant noise that can impact the transmission, including impulse noise (*e.g.*, intermittent bursts of errors, such as the switching of high-voltage electrical equipment). DSL systems address this noise by, among other ways, using forward error correction ("FEC") and interleaving.

1. FEC and Interleaving

Forward error correction generally refers to encoding schemes that provide redundant data to correct errors without requiring retransmission (the system can thus correct errors on a forward basis). The encoding scheme results in creating "codewords" from a group of bits and then dividing a codeword into a number of symbols. The redundant data allows the system to correct errors due to noise.

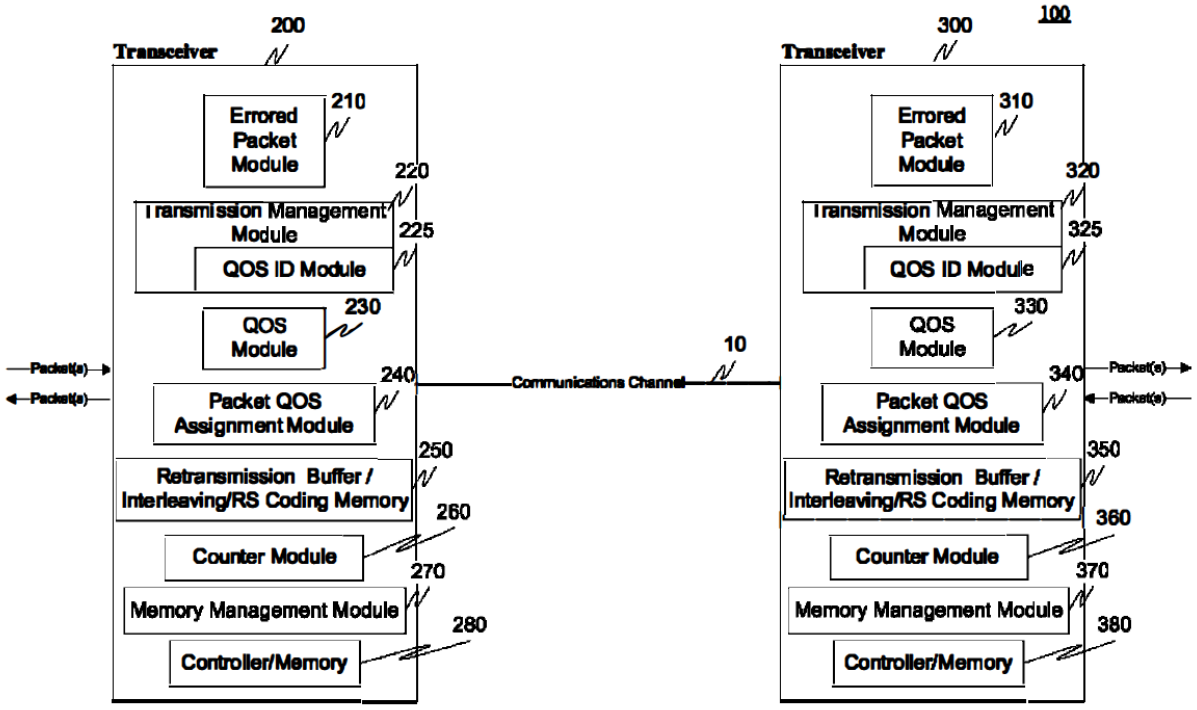
Interleaving similarly provides a way to deal with noise. Interleaving, in general, refers to rearranging the order in which codeword symbols are transmitted. Because noise may be relatively short in duration (such as impulse, or burst, noise), spreading out the codewords in time can help address noise. Upon receipt of the bytes of interleaved codewords, the codewords are reassembled by rearranging the bytes back into their original order. This is called deinterleaving.

FEC and interleaving are often used to avoid the additional delay from retransmitting information; using FEC and interleaving, a system can avoid retransmission delays by being able to correct errors on a going-forward basis. FEC and interleaving, however, can add additional delay. For example, the amount of redundancy added by an FEC technique can slow down the data rate of the system (as redundant data is transmitted). Interleaving has a similar tradeoff. The more interleaving spreads out the data is in time, for example, the slower the data rate of the system (as the receiver needs to delay to reconstruct the data that has been

rearranged). Thus, depending on the circumstances, it may be faster to retransmit the data instead of increasing the amount of error protection provided by FEC and interleaving.[1]

2. The Retransmission Techniques Of The '055 Patent

The '055 Patent discloses a technique to use a retransmission buffer for certain types of packets (*e.g.*, for packets transmitted on a channel that has a low packet-error rate) and avoid a retransmission buffer for other types of packets (*e.g.*, for packets transmitted on a channel with low latency). *See, e.g.*, Ex. 1001, at Figs. 2 and 3, 21:7–61. Figure 1 of the '055 Patents shows two transceivers (transceivers 200 and 300) that communicate over a channel (communications channel 10).



[1] More detail can be found in TQ Delta's POPR in IPR2022-00697 at pp. 2–7.

As shown above, each transceiver contains common circuitry used by both the transmitting and receiving portions of the device, *e.g.*, the retransmission buffer, interleaving, and coding memory. *See, e.g.*, Ex. 1001 at 9:64–10:6 (disclosing memory for "retransmission buffer/interleaving/deinterleaving/RS coding/RS Decoding ").[2]

Figure 2 discloses example steps taken at the transceiver that is transmitting the packet. *See, e.g.*, Ex. 1001 at Fig. 2, 21:7–34. The transceiver determines if the packet is a retransmittable type of packet (S120). *Id.* If so, the transceiver updates the packet (s150), stores the packet in a transmission buffer (s160), and forwards the packet to the receiving transceiver (s170). *Id.* The update can include a sequence identifier or other information that allows the receiving transceiver to determine which packet(s) need retransmission. *Id.*; *see also id.* at 12:40–53 (describing sequence ID and appending it to a packet). If it is determined that packet needs retransmission (s180), the packet is retransmitted. *Id.* If it is determined that retransmission is not required, the transceiver deletes the packet from the

[2] *see also id.* at 18:40–45 ("For example, 40% of the memory could be allocated to the interleaving/deinterleaving/RS coding/RS decoding functionality with the remaining 60% allocated to the retransmission of functionality. However, it should be appreciated, that in general, the memory can be divided, i.e., shared, in any manner."); *id.* at 19:1–5 ("[E]ven when the majority of the shared memory is allocated to a retransmission function to address channel noise (such as impulse noise), a smaller amount of memory may be allocated to the FEC/interleaving function for the coding gain advantage.").

retransmission buffer (s190). *Id.* For packets that are not a retransmittable type of packet, the transceiver may update the packet (s125) and then forward the packet to the receiving transceiver (s130).

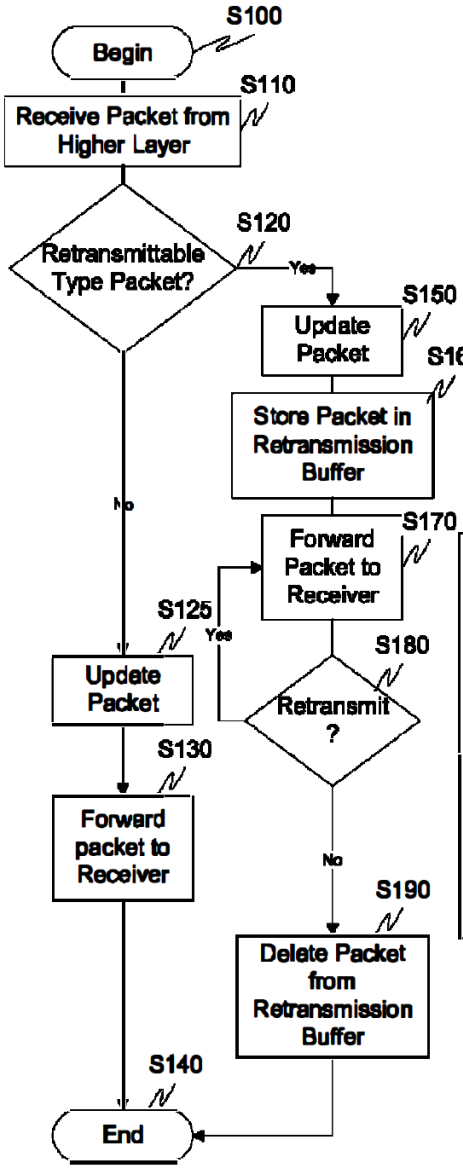


Fig. 2

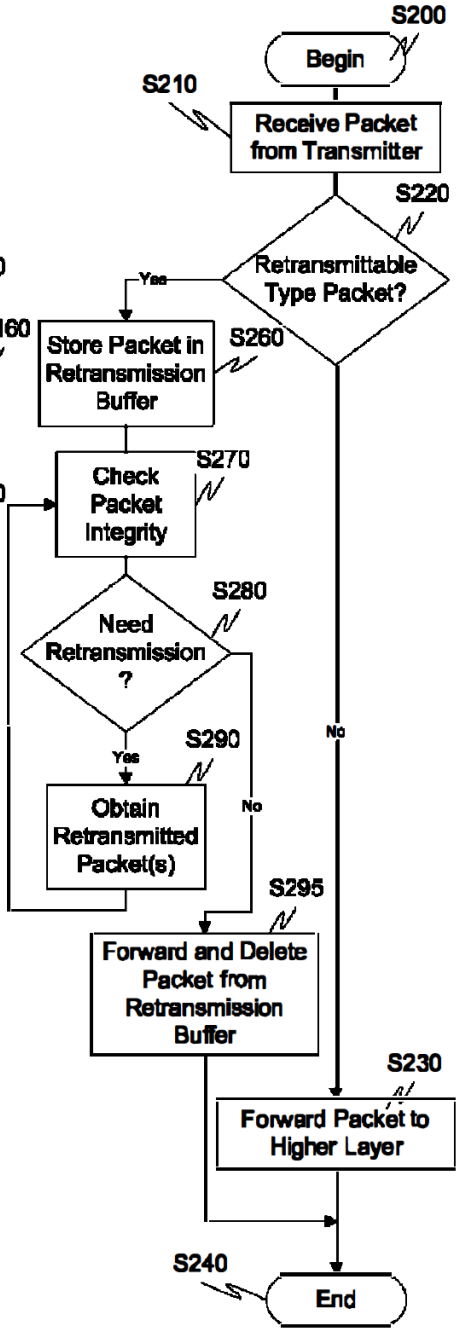


Fig. 3

Figure 3 discloses the example steps at the receiving transceiver. Ex. 1001 at Fig. 3, 21:35–61. After receiving the packet, the transceiver determines if the packet is a retransmittable type of packet (s220). *Id.* If not, the packet is sent to a higher layer for processing (s230). *Id.* If the packet is a retransmittable type of packet, the transceiver stores the packet in a retransmission buffer (s260), checks the integrity of the packet (*e.g.*, for errors) (s270), and determines if the packet needs retransmission (S280). If the packet needs retransmission, the transceiver obtains the retransmitted packet (*e.g.*, the transmitting transceiver retransmits the packet) and checks the integrity of the retransmitted packet. *Id.* If the packet does not need retransmission, the transceiver forwards the packet to a higher layer for process and deletes the packet from the retransmission buffer (S295). *Id.*

Claim 11 of the ’055 Patent recites the following:

> A transceiver operable to
>
> transmit a first type of packet and to transmit a second type of packet,
>
> wherein the first type of packet is stored in a retransmission buffer after transmission and the second type of packet is not stored in a retransmission buffer after transmission,
>
> and wherein the first and second types of packet comprise a header field that indicates whether a transmitted packet is a first type of packet or a second type of packet, and
>
> wherein the header field of the first type of packet comprises a sequence identifier (SID) that is incremented after the first type of packet is transmitted and the header field of the

second type of packet does not comprise the SID of the first type of packet.

B. The Texas Litigation

On August 13, 2021, TQ Delta sued the "CommScope Defendants" (CommScope Holding Company, Inc., CommScope Inc., ARRIS International Limited, ARRIS Global Ltd., ARRIS US Holdings, Inc., ARRIS Solutions, Inc., ARRIS Technology, Inc., and ARRIS Enterprises) for infringement of several of its patents in Civil Action No. 2:21-cv-00310 (E.D. Tex.), including the '055 Patent. Ex. 1028. On that same day, TQ Delta also sued Nokia Corp., *et al*. ("Nokia Defendants" or "Nokia")), for infringement of several of its patents in Civil Action No. 2:21- cv-00309 (E.D. Tex.), including the '055 Patent. Ex. 2001.

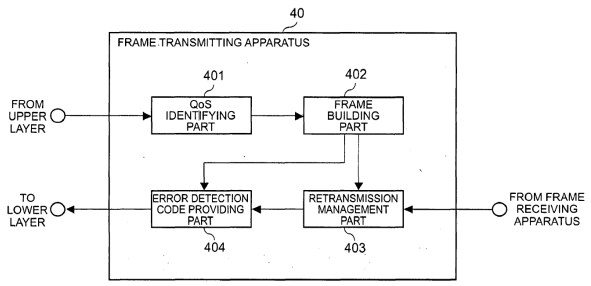
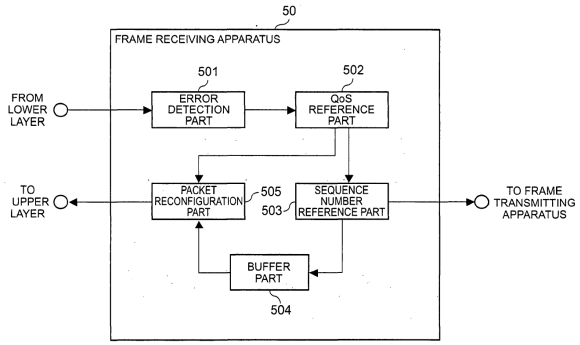
On October 22, 2021, the Texas Court consolidated both cases into Case No. 2:21-cv-00310 (the "Texas Lawsuit"). Ex. 2002. TQ Delta subsequently, according to the Court's Order narrowing claims (Ex. 2013), asserted that Nokia infringes at least claims 17 of the '055 Patent and the CommScope Defendants infringe at least claim 17 as well. Ex. 2008 at 2. Trial in the Texas Lawsuit is scheduled for January 2023. Ex. 2016.

On April 22, 2022, CommScope filed this Petition, and, as of the date of this filing, Nokia has not filed a Petition for IPR of the '055 Patent. CommScope does not identify Nokia as a real party in interest or a party in privity ("RPI") in its petition.

C. The Asserted References

1. Kawakami

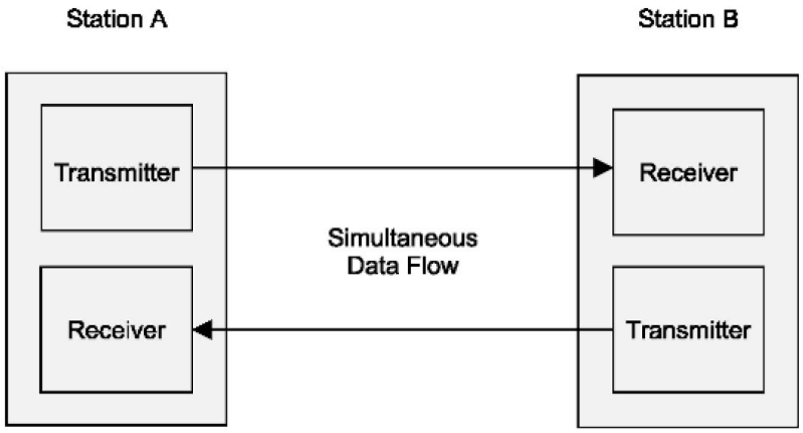
Kawakami (Ex. 1004) relates to a "frame transmission/reception system, a frame transmitting apparatus, a frame receiving apparatus, and a frame transmission/reception method," such as for mobile stations. Ex. 1004 at [0003]. Relevant to this petition, the reference discloses a "frame transmitting apparatus" and a separate "frame receiving apparatus," as shown below. *Id.* at Figs. 2 and 3.

Frame Transmitting Apparatus	**Frame Receiving Apparatus**
	

The reference explains that the "frame transmitting apparatus" has circuitry for transmitting and the "frame receiving apparatus" has circuitry for receiving. *See, e.g.* Ex. 1004 at [0035]–[0040] (describing transmitting apparatus that receives a data packet from the mobile network on the upper layer and loads it on to a radio frame on the lower layer); *id* at [0041]–[00046] (describing receiving a radio frame on the lower layer and transferring a frame at the upper layer). As the petition admits (at 73), Kawakami was considered during prosecution of the '055 Patent.

2. Reynders

Reynders (Ex. 1005) is a Practical TCP/IP and Ethernet Networking textbook. Relevant here, the textbook describes a station that contains a separate transmitter and receiver device within a station (Ex. 1005 at 28).



The reference describes general TCP/IP-related concepts (*e.g.*, the concepts of ports, sockets, sequence numbers, acknowledgement numbers, sliding windows, frames, and the like). *E.g.*, Ex. 1005 at 93–96 (describing introduction to TCP/IP); *id.* at 141–151 (describing host-to-host layer protocols, like TCP and UDP).

3. RFC Protocols

The petition combines three Request For Comment ("RFC") Protocols into a single reference, the Internet Protocol ("IP") (RFC 791, Ex. 1006), the Transmission Control Protocol ("TCP") (RFC 793, Ex. 1007), and the User Datagram Protocol ("UDP") (RFC 791, Ex. 1008). These documents describe the communication protocol and data structure sent between devices, such as TCP endpoints. The

protocols, however, do not disclose the specific transmitter and receiver utilized for those transmissions. The petition does not allege that any of the RFC Protocol documents disclose a "transceiver." *See, e.g.*, Pet. at 62 (alleging only obviousness).

III. The Board Should Deny Institution On Procedural Grounds

The Board should deny institution for two main reasons. First, Nokia is not disclosed as a real party in interest. Second, the petition should not be instituted under the Board's discretion under Section 314(a). The petition fails under the *Fintiv* factors, including under the Director's recent guidance.

A. Section 312 Bars Institution Because Nokia is an Undisclosed Real-Party-in-Interest

A petition is improper unless it "identifies all real parties in interest." 35 U.S.C. § 312(a)(2). As explained below, Nokia is a real party in interest. CommScope's failure to disclose Nokia as an RPI has significant effects, including on the analysis of whether the Board should use its discretion to deny institution.

The "terms 'real party in interest' and 'privy' were included in § 315" to safeguard[] patent owners from having to defend their patents against belated administrative attacks by related parties via § 315(b)." *Applications in Internet Time, LLC v. RPX Corp.*, 897 F.3d 1336, 1350 (Fed. Cir. 2018) ("*AIT*"). The intent of the "RPI and privity requirements were designed to avoid harassment and preclude parties from getting 'two bites at the apple' by allowing such parties to avoid ... the time bar." *RPX Corp. v. Applications in Internet Time, LLC*, IPR2015-01750, Paper

128 at 9 (P.T.A.B. Oct. 2, 2020) (precedential).

Determining whether a party is a RPI involves a "flexible approach that takes into account both equitable and practical considerations, with an eye toward determining whether the non-party is a clear beneficiary that has a preexisting, established relationship with the petitioner." *AIT*, 897 F.3d at 1351. Congress intended for the term RPI to have an "expansive" meaning and formulation, *id.* at 1350, and the RPI inquiry has no "bright line test," and is assessed "on a case-by-case basis." Consolidated Trail Practice Guide ("CTPG") at 16–17, available at https://www.uspto.gov/TrialPracticeGuideConsolidated. The term RPI should "apply broadly" and the determination of who is an RPI should consider "who, from a 'practical and equitable' standpoint will benefit from the redress that the chosen tribunal might provide." *AIT*, 897 F.3d at 1346-49. Indeed, the "two questions lying at its heart are whether a non-party 'desires review of the patent' and whether a petition has been filed at a nonparty's 'behest.'" *Id.* at 1351.

Accordingly, Nokia is an RPI. *See CTPG*, at 14 ("[A]t a general level, the [RPI] is the party that desires review of the patent"); *AIT*, 897 F.3d at 1348, 1349, 1351 ("the focus of the [RPI] inquiry is on the patentability of the claims challenged in the IPR petition, ***bearing in mind who will benefit from having those claims canceled or invalidated***;" "when it comes to evaluating the relationship between a party bringing a suit and a non-party, the common law seeks to ascertain ***who, from***

a 'practical and equitable' standpoint, will benefit from the redress that the chosen tribunal might provide;" the "two questions lying at its heart are whether a non-party 'desires review of the patent' and whether a petition has been filed at a nonparty's 'behest'") (emphases added).

The '055 Patent is also asserted in the Texas Lawsuit against Nokia. Nokia and CommScope are co-defendants in the Texas Lawsuit, and they have acted in a clearly cooperative form in filing over actions before the Board: IPR2022-352, 470, 471, 640, 656, 644, 655, 66, 678, 697, 809, 833, and 1012. Significantly, none of Nokia's and CommScope's combined 13 IPR petitions overlap and cover the same patents, confirming a contract on joint strategy.

As discussed in other IPR proceedings, Nokia filed multiple IPRs (without disclosing CommScope as a real-party-in-interest) on patents that were only asserted against CommScope in the 2Wire Lawsuit—they are not asserted in Texas against either party. *See, e.g.*, IPR2022-664 §II.A.2. CommScope is, of course, barred from challenging these proceedings under § 315(b), making its omission as an RPI critical and illustrating the depth of Nokia's and CommScope's cooperation.

The apparent exchange is that CommScope is filing IPRs against patents that TQ Delta has accused both CommScope and Nokia of infringing in Texas (that are were not asserted in Delaware). *See also* IPR Nos. 2022-697, 809, 833, 1012. As apparent compensation for Nokia's action on the Delaware-only patents,

CommScope is contributing a stipulation, which Patentee contends is deficient, to not pursue certain claims in the Texas Lawsuit if its IPRs are instituted, presumably to attempt to increase the chances of institution. RPI Nokia has provided no such stipulation, even though it is accused of infringing the same claims and asserts the same or similar prior art in Texas.

The parties' agreement appears to be intended to leave Nokia free to assert the parties' prior art in the Texas lawsuit—where they have identified overlapping art (including identical art) and share the same experts on validity. This agreement appears to be intended to allow the parties to potentially assert a maximum amount of prior art, in Texas trial proceedings, before the Board, and on appeal. So, stepping back, CommScope raises IPR challenges that assert combinations of art not specifically raised in the Texas Lawsuit, and Nokia asserts the parties' art in the Texas lawsuit, while also attempting to seek PTAB review of patents CommScope is estopped from challenging. To the extent either forum finds a TQD patent is invalid, both CommScope and Nokia benefit.

As mentioned above, Nokia and CommScope are also using the same experts. *See* Ex. 2003 (Bruce McNair), 2004 (George Zimmerman), and 2005 (Richard Wesel) (all identically declaring they have been "retained as a technical expert by counsel" for both CommScope and Nokia). Nokia and CommScope are also using these same three experts in their IPRs. Nokia and CommScope are also using the

same prior-art expert—Sylvia Hall-Ellis—in their IPRs. Nokia and CommScope are also sharing the same expert used in the 2Wire Lawsuit—Krista S. Jacobsen—in their IPRs. IPR2022-656, 697. The parties are also cooperators outside of being co-defendants in Texas; CommScope is Nokia's "featured partner[]" in business. https://www.nokia.com/networks/partners/technology/.

While Nokia is not subject to a one-year bar for the '055 Patent, including Nokia as a real-party-in-interest impacts this proceeding, including the *Fintiv* analysis, and weighs in favor of denying institution.

B. The Board Should Exercise Its Discretion Under *Fintiv*

The Board should exercise its discretion to deny institution under the factors[3] from *Apple Inc. v. Fintiv Inc.*, IPR2020-00019, Paper 11 (P.T.A.B. March 20, 2020) (precedential). The Court in Texas will be able to determine the issue of validity for the Challenged Claims (or their equivalents), again likely including art raised here, in both the Nokia and CommScope cases, more than eight months before the Final

[3] The factors for determining "whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding" are 1) whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted; 2) proximity of the court's trial date to the Board's projected statutory deadline for a final written decision; 3) investment in the parallel proceeding by the court and the parties; 4) overlap between issues raised in the petition and in the parallel proceeding; 5) whether the petitioner and the defendant in the parallel proceeding are the same party; and 6) other circumstances that impact the Board's exercise of discretion, including the merits. *Id.* at 6.

Written Decision. To the extent art or combinations of art in this petition was not raised in Texas, it is because the Texas defendants decided that different art was stronger.

1. Whether The Court Granted A Stay Or Evidence Exists That One May Be Granted If A Proceeding Is Instituted

The Court has not granted a stay, and there is no evidence that the Court may grant a stay. On May 24, 2022, Petitioner moved for a stay in Texas on patents and products it contended had been at issue in Delaware, but, in July, the Court denied that request as not meeting the required stay factors.

This case is scheduled for trial on January 2, 2023. Given this schedule, it is highly unlikely that the Court will grant a stay even if the Board institutes proceedings.[4] This factor thus weighs in favor of denying institution. *See SK*

[4] *See, e.g.*, *HTC Corp. v. Telefonaktiebolaget LM Ericsson Inc.*, No. 6:18-CV-00243-JRG, 2019 U.S. Dist. LEXIS 62097, at *5 (E.D. Tex. Jan. 16, 2019) (denying motion to stay pending arbitration where "the Court have already expended significant resources preparing for the upcoming pretrial conference and jury trial that are scheduled later this week and in four weeks, respectively[,]"); *Realtime Data LLC v. Actian Corp.*, No. 6:15-CV-463-RWS-JDL, 2016 WL 9340796, at *4–5 (E.D. Tex. Nov. 29, 2016) (denying motion to stay "[g]iven the advanced stage of litigation"). In addition, should a stay be requested prior to an institution decision, the Eastern District of Texas Court "has a consistent practice of denying motions to stay when the PTAB has yet to institute post-grant proceedings." *Nanoco Techs. v. Samsung Elecs. Co.*, No. 2:20-CV-00038-JRG, 2021 U.S. Dist. LEXIS 134729, at *4 (E.D. Tex. Jan. 8, 2021) (citing *Trover Group, Inc. v. Dedicated Micros USA*, No. 2:13-cv-1047-WCB, 2015 U.S. Dist. LEXIS 29572, 2015 WL 1069179, at *6 (E.D. Tex. Mar. 11, 2015) (Bryson, J.).

Innovation Co. v. LG Chem., Ltd., IPR2020-01239, Paper 14, at 15 (PTAB Jan. 12, 2021) (finding this factor weighed in favor of denying institution where "a stay is unlikely given the advanced state of that proceeding"); *Nintendo Co., Ltd. v. Gamevice, Inc.*, IPR2020-001197, Paper 13, at 11–12 (P.T.A.B. Jan. 12, 2021) (same).

2. Proximity Of The Court's Trial Date To The Board's Projected Statutory Deadline For A Final Written Decision

Trial is currently scheduled to start January 2, 2023. CommScope asserts the institution decision is likely to issue by October 2022 with a final written decision issuing in September 2023, but that places the final decision 8 months after the scheduled January trial date. CommScope also argues that the current 17-month time-to-trial date is faster than the district average time to trial of 21 months which would realistically place jury selection and a potential trial in May 2023, but that would still be four months before the likely final-decision deadline.

Using the Director's Guidance to use the median time interval for the district reaches the same results. The current "Median Time Interval in Months," from table C-5 of the March 31, 2021 Federal Judicial Caseload Statistics (from the month the petition was filed) for disposition during trial for the Eastern District of Texas is 19.8 months. Ex. 2017; *see also* Ex. 2018 (showing 19.1 months for March 2020); Ex. 2019 (showing 27 months for March 2019). Petitioner's DocketNavigator

statistics confirm a median time to trial around 19 months for the Texas Judge, showing a median time of 19.7 months on 21 recent trials. Ex. 1030. Assuming the Court delayed trial by two months to reach this average median date for the District, that would place the trial, rounding up, in April. That date is still five months before the projected final-decision deadline in September.

The available evidence points to a 17-month time-to-trial or, at the latest 19 months. Petitioner provides no explanation why or how trial would be delayed nine months to place the trial in the same month as the projected final-decision deadline. But even such a delay would only place the trial the same month as the decision, not substantially after the decision. This factor weighs against institution.

3. Investment In The Parallel Proceeding By The Court And The Parties

Petitioner asserts that "a claim construction order may not issue before the Board's projected September institution decision date and "the district court will not invest significant resources or issue substantive orders … prior to the issuance of an institution decision," but both statements proved untrue. Pet. at 75–76.

In the Texas Lawsuit, the Court is addressing 17 patents,[5] including the '055 Patent, and proceedings are far along, with the close of all fact and expert discovery

[5] Several patents have fallen out of the case as it has progressed and the Court's Narrowing Order has applied.

set to occur within the next 60 days. *See* Ex. 2011 at ¶¶ 6–60. The parties have exchanged infringement and invalidity contentions, fully briefed their claim construction positions, had a Markman Hearing, and the Court has issued a 116-page Markman Order. *Id.* The parties also have completed substantial document production and conducted many depositions, as one would expect with the upcoming close of fact discovery. For example, TQ Delta has produced over 540,000 pages, CommScope has produced over 44,000, and Nokia has produced over 800,000. *Id.* at ¶ 88. Moreover, over 12 witnesses have been deposed, and over 15 more depositions have been noticed and scheduled for the near future. *Id.* at ¶¶ 27, 88. In addition, TQ Delta has served document subpoenas on three third parties, CommScope has served document subpoenas on four third parties, and Nokia has served document and deposition subpoenas on nine third parties. *Id.* at ¶ 88.

Further, the parties have served and responded to interrogatories and requests for admission. Ex. 2011 at ¶ 88. The Court has ruled on a CommScope's motion to transfer (denying it) and Nokia's motion to dismiss, and several other fully briefed motions are pending with or have been ruled on by the Court. *Id.* at ¶¶ 6–87. The Court also has entered a specific case-management order, addressing and focusing the patent claims and prior art, and appointed a Technical Advisor. *Id.* The Court's and parties' investment is ongoing, and both the close of fact discovery and all expert

discovery, including expert reports, are scheduled to occur (September 23, 2022) before the institution-decision deadline. *Id.* at ¶ 80; Ex. 2016.

This investment favors denial. *10X Genomics, Inc. v. President and Fellows of Harvard College*, IPR2020-01467, Paper 21 at 13 (P.T.A.B. Feb. 22, 2021) ("[A]t this late stage in the district court proceeding the investment made by the court and both parties is significant, we find this factor weighs heavily in favor of exercising our discretion to deny institution."); *Google LLC v. Personalized Media Commc'ns*, LLC, IPR2020-00722, Paper 25 at 7 (P.T.A.B. Nov. 5, 2020) ("The issuance of the 94-page claim construction order and the completion of expert discovery on validity, all done in preparation for a trial scheduled to commence less than two months after our Decision was due, is evidence that 'the parallel proceeding is more advanced, a stay may be less likely, and instituting would lead to duplicative costs,' all of which are factors that 'favor[] denial' because 'the court and parties have invested sufficient time in the parallel proceeding to favor denial.' *Fintiv*, Paper 11 at 9–10.").

4. Overlap Between Issues Raised In The Petition And In The Parallel Proceeding

There is material overlap between the issues raised in the petition and the Texas Lawsuit. TQ Delta has asserted claim 17 of the '055 patent against CommScope. Petitioner does not explain TQ Delta has also asserted claim 17 against Nokia. Thus, at least one of the Challenged Claims is being addressed in the Texas Lawsuit. Accordingly, there is at least some claim and subject-matter overlap.

See Samsung Elec. Co. v. Clear Imaging Research, LLC, IPR2020-01551, Paper 12 at 18 (P.T.A.B. Feb. 17, 2021) ("Petitioner does not show that the non-overlapping claims differ significantly in some way. Rather, both sets of claims recite similar subject matter.").

In addition, Factor 4 does not state that a jury must hear the exact same grounds found in a Petition in order for there to be overlap. The issue is, reasonably, whether there is "overlap between issues raised in the petition and in the parallel proceeding." *Fintiv*, Paper 11 at 6. Here, there is overlap because the Texas Court will hear argument on claim 17 and its validity.

Therefore, Factor No. 4 does not favor institution. *See PEAG LLC v. VARTA Microbattery GmbH*, IPR2020-01213, Paper 9 at 18 (P.T.A.B. Jan. 6, 2021) ("[S]ubstantially identical prior art and invalidity grounds are asserted in both the district court and the *inter partes* review proceedings.... Accordingly, the fourth Fintiv factor weighs in favor of exercising discretion to deny institution."); *Fintiv*, Paper 11 at 12 ("[I]f the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial.").

5. Whether The Petitioner And The Defendant In The Parallel Proceeding Are The Same Party

CommScope is the petitioner here and a defendant in the Texas Litigation. RPI Nokia is also a defendant in the Texas litigation. Thus, Factor No. 5 favors

denial. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12, 19 (P.T.A.B. Dec. 1, 2020).

6. Other Circumstances That Impact The Board's Exercise of Discretion, Including The Merits

Other circumstances favor denial. This is far from a compelling case for institution; the petition fails to explain how the references contain certain claim elements, including the shared common circuitry of a transceiver. This further weighs against institution.

The Board should also exercise its discretion because CommScope is working to circumvent the procedural safeguards imposed both by Congress and the Texas Court. Congress expected that petitioners would face a tradeoff for institution whereby they would be estopped from raising "any ground that the petitioner raised or reasonably could have raised during that *inter partes* review." 35 U.S.C. §315(e)(2). Here, Petitioner will face trial before the final-written decision issues, circumventing the estoppel consequences provided by Congress.

CommScope, in this Petition, also circumvents the Rules and an Order of the Texas Court. That Court has procedural Patent Local Rules, modeled after the Northern District of California's, for parties that provide matched disclosure tradeoffs for patentees and patent challengers. *See* E.D. Tex. Patent Local Rules 3-1; 3-3. At the request of defendants in the Texas Litigation, the Court also entered

its order narrowing patent claims, which forces the parties to respectively reduce asserted patent claims and prior-art references. Ex. 2013.

CommScope is circumventing the Texas Court's Rules and Narrowing Order by electing different art combinations in Texas than it asserts before the Board. For example, CommScope did not identify Kawakami, Reynders, or the RFC Protocols as a primary reference it would consider for invalidating the '055 Patent. Ex. 2010. Consequently, CommScope chose to not raise either ground Texas (though it did raise different grounds), making any stipulation it might offer on the specific grounds here meaningless at narrowing the validity issues. CommScope's choice to circumvent these rules has the effect of creating more work in each forum, since CommScope is raising more art than it otherwise would be permitted.

C. The Board Should Also Deny Institution Under the Director's Recent Guidance

The Board should also exercise its discretion to deny institution under the Director's June 21, 2022 guidance. As explained above, even if the Texas Court were to substantially delay its trial to the district's median time-to-trial date, trial would still complete months before a final decision is expected. As explained below, Petitioner does not present a compelling merits position, including on the "transceiver" claim element.

Finally, Petitioner has not made the required stipulation that it will not pursue in the Texas Court "the same grounds or any grounds that could have reasonably

been raised before the PTAB." CommScope has only stipulated that "if the Board institutes" it will not pursue, "in connection with" the specific patent the specific grounds that it petitioned on or "any other ground for a given patent for which the Board institutes." Ex. 2015. CommScope is not providing a blanket stipulation it will not pursue "the same grounds or any grounds that could have reasonably been raised before the PTAB."

Because the stipulation limits its effect, whatever they may be, to the individual patent (not all proceedings in the Texas Court) it is, essentially, meaningless in terms of what will occur in the district court. First, CommScope has asserted identical (or nearly identical art) in the Texas Court across multiple patents, including patents there is no PTAB petition on. *See* Ex. 2010 (showing that for the '055 Patent, its asserted references are also asserted against another Texas patents). Therefore, the Texas Court will consider similar arguments and issues even if CommScope's stipulation takes its limited effect for a specific patent. Second, as discussed above, Petitioner's structured its references in both forums so they did not technically overlap, so the stipulation to not pursue the specific grounds raised is also largely meaningless.

RPI Nokia also provides no such stipulation, meaning it will be able to assert art against the same patents, including the '055 Patent without restriction. As explained above Nokia and CommScope are cooperating, and, even if there were an

appropriate stipulation by CommScope, Nokia would remain free to assert the parties' art in Texas. The problem created by Nokia's failure to, at least equivalently, stipulate illustrates why Nokia is a proper RPI in these proceedings.

IV. The Board Should Deny Institution On The Merits

The Board can also deny institution on the merits. As detailed below, the petition fails to show that any of the references contain (1) a "transceiver" and (2) a "header field of the first type of packet" that comprises "a sequence identifier (SID) that is incremented after the first type of packet is transmitted." On either of these independent grounds, the Board can deny institution.[6]

A. Claim Construction

For the purposes of this POPR, TQ Delta does not dispute the constructions of "transceiver" and "packet" recited in the petition. Pet. at 11.[7]

[6] TQ Delta reserves the right to challenge the petition on any ground should the Board institute review, including on the basis that CommScope has failed to show that the references qualify as prior art and that the references are not enabled or otherwise properly combinable. For the purposes of this Patent Owner Preliminary Response only, TQ Delta does not contest CommScope's level of ordinary skill in the art as an individual with a handful of years of experience but no specialized knowledge of DSL.

[7] TQ Delta reserves its right to challenge Petitioner's constructions and propose its own constructions should the Board institute review.

B. The Petition Fails To Show That Any Of The References Disclose The Claimed "Transceiver" Elements

The references on which the petition relies do not disclose the claimed transceiver, an element of each Challenged Claim. Two courts—the Delaware Court and the Texas Court—have construed the term "transceiver" as a "communications device capable of transmitting and receiving data wherein the transmitter portion and receiver portion share at least some common circuitry." Ex. 2014 at 15 (emphasis added); *TQ Delta, LLC v. 2Wire, Inc.*, No. 1:13-CV-01835, Dkt. No. 477, at 4 (D. Del. Jan. 30, 2018). Petitioner agrees to this construction.

The references do not meet this construction. At most, the petition points to the disclosure of a device that contains a transmitter and a receiver. But the Texas Court found that a "person of ordinary skill in the art would understand the term 'transceiver' as referring not merely to a device that includes both a transmitter and a receiver." Ex. 2014 at 14 (emphasis added). Rather, the person would understand a "transceiver" to refer to "a device in which a transmitter portion and a receiver portion share at least some common circuitry." *Id.* The petition fails to show that any of the references disclose this aspect of the "transceiver" element.

1. Kawakami

Kawakami does not disclose a "transceiver." It instead discloses a separate transmitter and receiver apparatus. The reference explicitly shows this configuration in the Figures: the frame transmitting apparatus is shown as a separate device than

the frame receiving transmitting apparatus. Figure 2 shows a "transmitting apparatus" that has circuitry for transmitting. *See, e.g.* Ex. 1004 at [0035]–[0040] (describing transmitting apparatus that receives a data packet from the mobile network on the upper layer and loads it on to a radio frame on the lower layer).

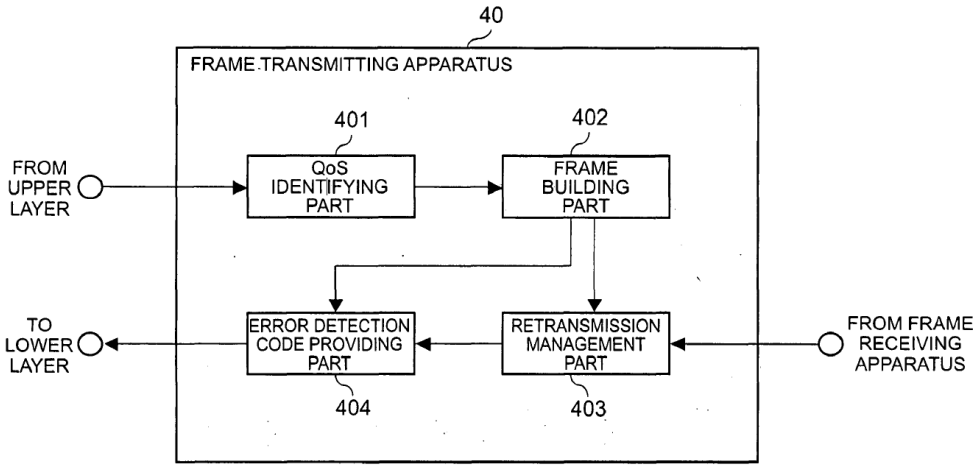
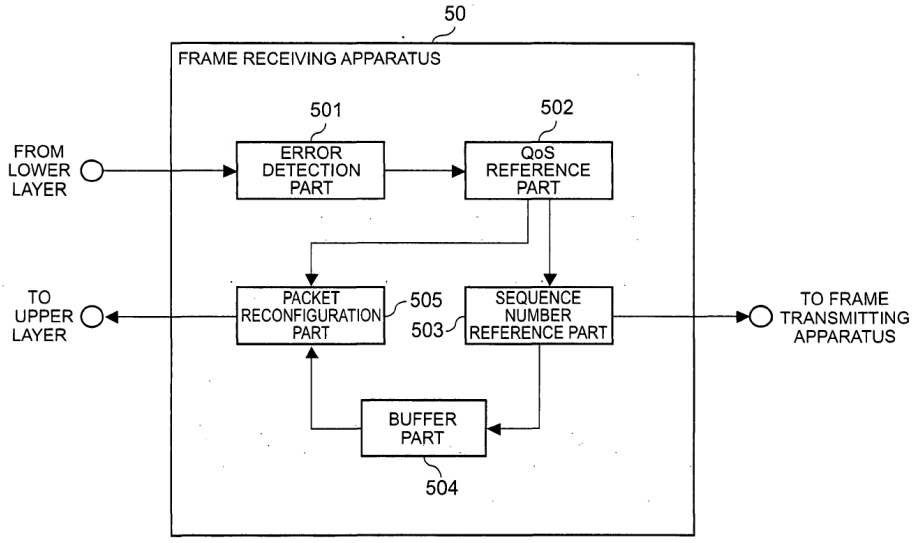


Figure 3 likewise shows a "receiving apparatus" that has circuity for receiving. *See, e.g.*, Ex. 1004 at [0041]–[00046] (describing receiving a radio frame on the lower layer and transferring a frame at the upper layer).



There is no disclosure of the two apparatuses "shar[ing] at least some common circuitry." Despite that, the petition (at 34) points to two sentences in Kawakami to argue that the retransmission management part (403) is the common circuitry shared by the frame receiving apparatus and the frame transmitting apparatus: "The frame building part 402 outputs acknowledgement type frames to the retransmission management part 403 and outputs unacknowledgement type frames to the error detection code providing part 404. . . . [T]he retransmission management part 403 is a part that buffers an acknowledgement type frame for retransmission and, when receiving a request from the frame receiving apparatus 50, outputs a corresponding acknowledgement type frame to the error detection code providing part 404." Ex. 1004 at [0037], [0039]. These sentences do not disclose the claimed transceiver for the following reasons.

First, the retransmission management part 403 is not "common circuity"—it is circuitry in the frame transmitting apparatus. While the part may receive a message from the frame receiving apparatus, the part is not circuity common to both the transmitting and receiving apparatuses. It is not used by the receiving apparatus to receive a message or related processing, unlike the common memory disclosed in the '055 Patent that is common to both the transmitter and receiver and used by both (*e.g.*, interleaving, deinterleaving, encoding, decoding, and retransmission). *See, e.g.*, Ex. 1001 at 9:64–10:6 (disclosing memory for "retransmission

buffer/interleaving/deinterleaving/RS coding/RS Decoding ").[8] That a device receives a message from a different device, without more, does not mean the receiving device is "common circuity" shared by both devices; receiving a text message from a friend's smartphone does not mean that your smartphone is "common circuitry" shared with your friend's phone. They are separate phones. Likewise, the frame transmitting apparatus and frame receiving apparatus in Kawakami are separate devices; there is no common circuitry.

Second, and relatedly, the retransmission management part 403 is not "shared" between the frame transmitting and frame receiving apparatuses. The retransmission management part 403 buffers an acknowledgement-type frame for transmission and, when it receives a request from the frame receiving apparatus, discards the frame. Ex. 1004 at [0037], [0039]. The part is not utilized by the frame receiving apparatus for any functionality of that apparatus (*e.g.*, receiving and processing received packets). It does not store any information or perform any processing for the receiving apparatus, unlike, for example, the shared memory

[8] *See also id.* at 18:40–45 ("For example, 40% of the memory could be allocated to the interleaving/deinterleaving/RS coding/RS decoding functionality with the remaining 60% allocated to the retransmission of functionality. However, it should be appreciated, that in general, the memory can be divided, i.e., shared, in any manner."); *id.* at 19:1–5 ("[E]ven when the majority of the shared memory is allocated to a retransmission function to address channel noise (such as impulse noise), a smaller amount of memory may be allocated to the FEC/interleaving function for the coding gain advantage.").

disclosed in the ’055 Patent. The retransmission management part 403 simply receives a message and, based on that message, takes an action (discards a buffered frame). Ex. 1004 at [0039].

> [T]he retransmission management part 403 is a part that buffers an acknowledgement type frame for retransmission and, when receiving a request from the frame receiving apparatus 50, outputs a corresponding acknowledgement type frame to the error detection code providing part 404. The retransmission management part 403 starts a retransmission timer at the same time as transmission of a frame, and buffers the frame for retransmission before receiving an acknowledgement response (ACK) from the frame receiving apparatus. When receiving an ACK, the retransmission management part 403 discards the buffered frame. When detecting a timeout of the retransmission timer or detecting a frame loss from a sequence number of an ACK, the retransmission management part 403 outputs the buffered frame to the error detection code providing part 404.

To continue with the smartphone analogy, a phone that displays a notification when it receives a text message is not circuitry “shared” with the phone that sent the text message. They are two separate phones. Similarly, that the transmitting apparatus takes an action based on receiving a message from the receiving apparatus does not mean that the two devices share common circuitry; it just means that they are able to communicate (in one direction). For these reasons, the petition fails to show that Kawakami discloses the claimed “transceiver.”

The petition (at 35–36) also tries to fill in the lack of Kawakami's disclosure by citing two additional references, U.S. Patent No. 7,016,658 (Ex. 1024) and U.S. Pat. App. No. 2006/0039330 (Ex. 1025). This fails for a number of reasons.

First, the petition does not allege an obviousness combination (or even a *prima facie* case) based on combining Kawakami with either of these references. These references thus cannot be used to make out an obviousness combination. *See, e.g.*, *Wasica Fin. GmbH v. Cont'l Auto. Sys.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017) (explaining that "an entirely new theory of prima facie obviousness absent from the petition" was "foreclosed by statute, our precedent, and Board guidelines").

Second, the disclosure cannot support inherency, which appears to be the petition's argument. Pet. at 34 ("To the extent that Kawakami does not explicitly disclose that the transmitting and receiving portions of mobile station 20 share at least some common circuitry, a POSITA would have understood that they do."). That other references may indicate that a transceiver could be used in other systems for other purposes is insufficient to show that Kawakami itself inherently discloses a transceiver: the standard is that Kawakami itself must use a transceiver, not that it potentially could use one. *Bettcher Indus. v. Bunzl USA, Inc.*, 661 F.3d 629, 639 (Fed. Cir. 2011) ("Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.") (quoting *In re Oelrich*, 666 F.2d 578, 581 (CCPA

1981)). *HTC Corp. v. Cellular Communs. Equip., LLC*, 877 F.3d 1361, 1369 (Fed. Cir. 2017) (". . . HTC has only shown that it is possible for the start of a frame preceding an ACK/NACK signal to correspond to the start of a message transmission. This possibility, however, is not enough to find that Baker necessarily discloses the 'start of a message transmission' limitation . . . ."). There is no allegation or disclosure showing inherency.

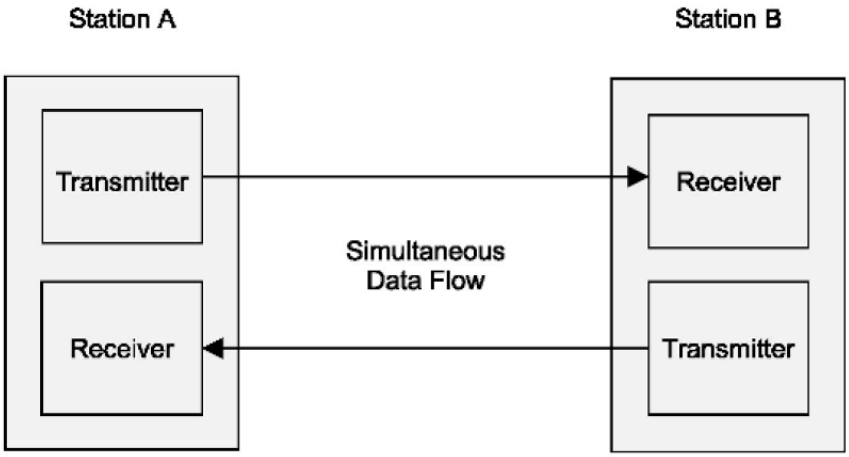
Third, had the petition adequately plead obviousness and inherency, the petition would fail on the merits. The petition does not explain why a skilled artisan looking at Kawakami would even look to these two other references to rearchitect the frame transmitting apparatus and frame receiving apparatus. There is no need in Kawakami to share any circuitry between those separate devices because they do not perform any common functions or need to share resources (*e.g.*, memory) for their respective operations. The petition does not provide (or even allege) a motivation.

The petition likewise does not show that these other references actually disclose a "transceiver," as construed. It does not attempt to show that either reference discloses that the "the transmitter portion and receiver portion share at least some common circuitry." The petition points to the figures where certain components may contain the same text and labels across in different figures. But the petition does not explain what those components are (are they common circuity?)

or how they are allegedly used (are they shared and what are they shared for?). Without that allegation and supporting evidence, Petitioner fails to carry its burden.

2. Reynders

The petition also fails to show that Reynders discloses a "transceiver," as claimed. Like Kawakami, the disclosure in Reynders Petitioner points to expressly discloses separate transmitter and receiver devices within a station (Ex. 1005 at Fig. 1.11)—not common circuity, and certainly not common circuitry shared between transmitter and receiver portions.



There simply is no disclosure of "the transmitter portion and receiver portion shar[ing] at least some common circuitry." The petition (at 44–45) admits as much and attempts to fill this gap by pointing to Reynder's disclosure 160 pages later of a "modem" in a completely different section of the textbook (connecting a single host to the Internet). The petition then asserts—without any documentary support—that those skilled in the art would understand that the transmitting and receiving portions

of a modem would share circuitry. Pet. at 44–45. But there is no such teaching or suggestion in Reynders. There is no disclosure of the internals of a "modem" at all—there is no disclosure of any internal circuitry, let alone a transmitter portion and a receiver portion with (1) common circuitry that is (2) shared between the portions. There is simply no evidence of that in the reference. Nor is there any evidence or allegation that such circuitry is even necessary or required for a modem to operate. There is also no evidence or allegation that skilled artisans would be motivated to modify the stations or modem in Reynder to include common circuitry that is shared between a transmitter portion and a receiver portion.

Similarly, the petition's claim (at 45–46) that would have been obvious to use a "transceiver" lacks supporting evidence. The petition points to a statement in Reynder that 100Base-T2 systems "use[] both pairs for simultaneously transmitting and receiving . . . this is achieved by using digital signal processing (DSP) techniques." Ex. 1005 at 83. But this statement does not speak to how the transmitting and receiving is implemented. It does not disclose the circuitry involved, whether that circuitry is common to transmitter and receiver, and whether that circuitry is shared. Nor does the passage teach, suggest, or motivate the use of shared common circuitry, and the petition does not allege otherwise.

Lastly, the petition asserts (at 45) that "it would have been obvious to use the methods of Reynders with DSL systems, which were known to include

transceivers." This also fails to raise a question of patentability. Reynders does not mention "DSL" at all (or "digital subscriber line," which is what DSL refers to). Nor does the petition point to any motivation, teaching, or suggestion to use Reynders (a "Practical TCP/IP Ethernet Networking Guide") with DSL systems (which transmit data on phone lines) to create a new system. Indeed, the VDSL1 standard (ITU-T 993.1) that the petition cites does not mention "TCP/IP" or "Ethernet" at all. Ex. 1018. The petition also does not identify an alleged "transceiver" in the cited DSL standards, identify any common circuitry, or identify circuitry that is shared.

Reynders does not disclose a transceiver. The petition's hand-waiving that it would have obvious to use a transceiver is not a substitute for evidence. The petition thus fails to raise a reasonable likelihood of unpatentability based on Reynders.

3. RFC Protocols

The petition also fails to show that the RFC Protocols (RFC 791, RFC 793, and RFC 768) teach a "transceiver," as construed. The petition does not point to any disclosure in those references as teaching or suggesting a transceiver. The petition instead makes only the following allegation, which cites its expert declaration regarding Reynders, not the RFC Protocols.

> A POSITA would have found it obvious to use the TCP/IP protocol suite disclosed in RFCs 791, 793, and 768 with DSL systems. It was common knowledge as of the priority date that DSL systems had advantages over previous Internet access methods, and DSL systems were rapidly being deployed. It would have been obvious to a POSITA

> to use the TCP/IP protocol suite in combination with any standard method of Internet access, including DSL. It was common knowledge in the art that DSL systems included transceivers and multiple standards for the functionality of those transceivers were published.

Pet. at 62 (citations omitted); *see also* Ex. 1003 at ¶ 236 (similar allegation regarding Reynders, but not the RFC protocols).

Like the deficiencies in Reynders, this allegation is insufficient for obviousness. The petition points to the specifications for the UDP, TCP, and IP protocols. Ex. 1006, 1007, 1008. None of those references mention DSL (or digital subscriber line), let alone teach, suggest, or motivate use of the protocols in DSL systems. Again, the DSL standard that the petition cites (Ex. 1018) does not mention using TCP, IP, or UDP protocols (the DSL standards typically address lower-level functionality associated with transmitting data over copper lines, not higher-level protocols). And, again, the petition fails to identify an alleged "transceiver" in the cited DSL standard, identify any common circuitry, or identify shared circuitry.

* * * * *

The petition fails to show that any of the cited references disclose a "transceiver," as the parties agree it should be construed. The petition also fails to conduct an obviousness analysis showing why it would have been obvious to utilize a transceiver in connection with any of these references. And the petition fails to explain how the secondary evidence that the petition cites (to the extent it cites any

evidence at all) even discloses a "transceiver," *viz.*, the petition makes no attempt to show common circuitry shared by the transmitter portion and receiver portion. Due to this lack of proof, the Board should deny institution.

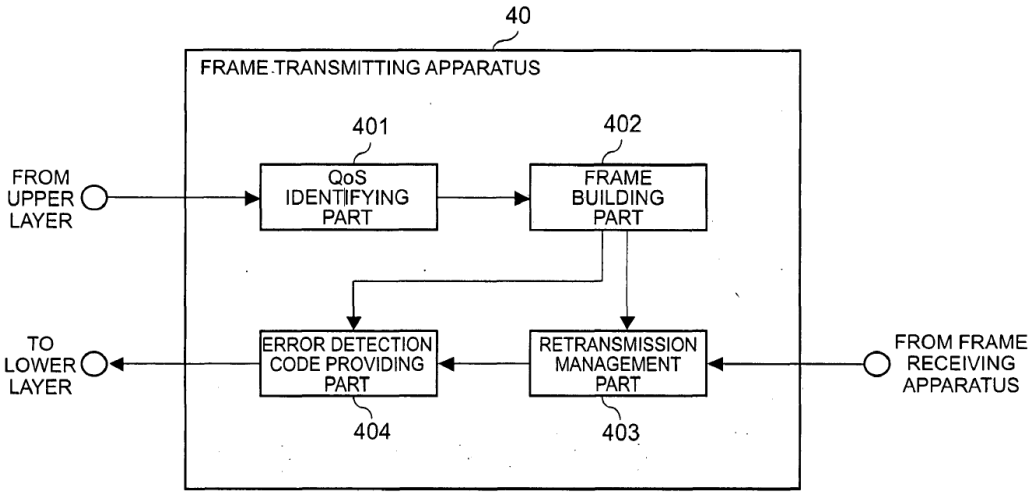
C. Petitioner Fails to Show That Any Of The References Disclose A "Header Field Of The First Type of Packet Comprises A Sequence identifier (SID) That Is Incremented After The First Type Of Packet Is Transmitted"

Beyond "transceiver," the Board can also deny institution for at least another reason. The petition fails to show that any of the references teach a "header field of the first type of packet" that comprises "a sequence identifier (SID) that is incremented after the first type of packet is transmitted."

1. Kawakami

The petition fails to show that Kawakami discloses that the sequence identifier (SID) is incremented after the alleged first type of packet is transmitted. The petition (at 38) asserts that the "sequence numbers" in the reference is the claimed sequence identifier. The petition (at 35, 38–39) also asserts that the "acknowledgement type frame" is the claimed first type of packet. But the petition does not show that Kawakami discloses that the sequences numbers are incremented after transmission.

The petition points to the following disclosure. Ex. 1004 at Fig. 2, [0037].



> The frame building part 402 sequentially provides acknowledgement type frames of one radio protocol connection with sequence numbers. The frame building part 402 outputs acknowledgement type frames to the retransmission management part 403 and outputs unacknowledgement type frames to the error detection code providing part 404.

Lacking from this disclosure is any indication of when the sequence numbers are incremented. And, as is apparent from the disclosure and figure, the frame building part 402 is utilized before transmission of the acknowledgement type frames (which occurs at the "to lower layer" output).

There is no evidence that the frame is transmitted first and, after that, the sequence number is incremented. Kawakami states that, after "sequentially provid[ing] acknowledgement type frames of one radio protocol connection with sequence numbers," the frame building part outputs those frames to the retransmission management part 403. That part then holds the frame and waits for

a timer to timeout before outputting the frame (or a message, which results in discarding the frame, not transmitting it). (Ex. 1004 at [0037]).

> [T]he retransmission management part 403 is a part that buffers an acknowledgement type frame for retransmission and, when receiving a request from the frame receiving apparatus 50, outputs a corresponding acknowledgement type frame to the error detection code providing part 404. The retransmission management part 403 starts a retransmission timer at the same time as transmission of a frame, and buffers the frame for retransmission before receiving an acknowledgement response (ACK) from the frame receiving apparatus. When receiving an ACK, the retransmission management part 403 discards the buffered frame. When detecting a timeout of the retransmission timer or detecting a frame loss from a sequence number of an ACK, the retransmission management part 403 outputs the buffered frame to the error detection code providing part 404.

There is simply no disclosure of incrementing the sequence number after transmitting the acknowledgement type frame; the above disclosure indicates the opposite. Despite that, the petition claims that the reference meets this element by focusing on the transmission of the unacknowledgement type of frame (which the petition points to as the "second type of packet"). Pet. at 39; *see also id.* at 36 (identifying the "unacknowledgement type frames" as the second type of packet). But the timing of when that packet is transmitted does address the issue: the claims recite incrementing the sequence identifier "after the first type of packet is transmitted." And the petition does not identify any disclosure of incrementing the sequence number after transmitting the acknowledgement type frame.

The petition's obviousness arguments (at 39–40) fail for many of the same reasons. The petition focuses on the transmission of the unacknowledgement type frame (the alleged second type of packet), which, again, does not address the issue. The petition also asserts (at 39–40) that "[a]ppending an SID to a packet that is incremented after transmission is a fundamental part of all selective repeat retransmission systems that allows a receiving transceiver to determine if a frame was lost due to error, request that the frame be retransmitted, and then put the frames in the correct order after receiving." But the petition does not explain why this is true or identify any supporting documentary evidence. For example, the petition (as well as its accompanying expert declaration) does not explain why a retransmission system could not increment a sequence identifier prior to transmission. Nor does the petition assert, let alone show, that incrementing after transmission of the acknowledgement type packet is inherent in Kawakami.

The petition also does not connect its assertion about retransmission systems to modifying the actual Kawakami system, whose disclosure indicates that the system provides sequence numbers before transmission of the acknowledgement type packet. The petition does not explain how such a modified system would operate, what would need to be modified, how the system would be modified, and why a skilled artisan would be motivated to modify Kawakami in that way. The petition thus fails to raise a reasonable likelihood of unpatentability.

2. Reynders

The petition also fails to show that Reynders discloses this limitation. The number that the petition points to is not included the header field of the transmitted packet. The petition cites a passage in Reynders that states that the receiver increments a sequence number for each byte it receives to track the order of the bytes. Ex. 1005 at 143 (emphasis added).

> A fundamental notion in the TCP design is that every BYTE of data sent over the TCP connection has a unique 32-bit sequence number. Of course this number cannot be sent along with every byte, yet it is nevertheless implied. However, the sequence number of the FIRST byte in each segment is included in the accompanying TCP header, for each subsequent byte that number is simply incremented by the receiver in order to keep track of the bytes.

As the reference explains, only "the sequence number of the FIRST byte in each segment is included in the accompanying TCP header." Ex. 1005 at 143. The petition, however, does not point to incrementing that sequence number for transmitted packets (*e.g.*, whether it happens before or after the transmission). The petition instead focuses on the receiver keeping track of the bytes (*e.g.*, the byte order) using a different variable: "for each subsequent byte that number is simply incremented by the receiver in order to keep track of the bytes." Ex. 1005 at 143; *see also* Ex. 1007 (TCP specification) at 47 ("The receiver of data keeps track of the next sequence number to expect in the variable RCV.NXT. . . . When the receiver accepts a segment[,] it advances RCV.NXT and sends an acknowledgment."). There

is no disclosure that this receiver-tracking number is included the header field of the transmitted packets from the transmitter (*e.g.*, used as a sequence identifier). And by failing to point to where the sequence number in the packet header is incremented for transmitted packets (and when and how), the petition fails to raise a reasonable likelihood that the claims are unpatentable in view of Reynders.

3. RFC Protocols

For similar reasons as Reynders, the petition fails to show that the RFC Protocols disclose this limitation. The petition points to the "Sequence Number" of a TCP header as meeting the "sequence identifier (SID)" element of the claims (Pet. at 67 (reproducing Ex1007 at Fig. 3)). The petition then points to the TCP glossary definition of "send sequence," (at 67) which is as follows.

```
send sequence
          This is the next sequence number the local (sending) TCP will
          use on the connection.  It is initially selected from an
          initial sequence number curve (ISN) and is incremented for
          each octet of data or sequenced control transmitted.
```

This cited passage and the petition, however, is silent on when or how the "send sequence" is updated and the timing of the update, *e.g.*, before transmitting the data or afterwards. The petition does not cite to any part of the TCP specification that indicates when this incrementing occurs. And without that explanation, the petition fails to raise a reasonable likelihood that the claims are unpatentable in view of the RFC Protocols.

V. Conclusion

TQ Delta respectfully requests that the Board deny institution.

Dated: August 5, 2022

Respectfully submitted,
THE DAVIS FIRM PC

By:/Christian J. Hurt/
Christian J. Hurt

CERTIFICATE OF COMPLIANCE

I hereby certify that the foregoing Preliminary Response complies with the type-volume limitation and general format requirements pursuant to 37 C.F.R. §§42.24 and 42.6. I further certify that this response contains 9,515 words, excluding parts exempted by 37 C.F.R. §42.24. The word count is based on the word count of the Microsoft Word program used to prepare this petition.

Dated: August 5, 2022

/Christian J. Hurt/
Christian J. Hurt

CERTIFICATE OF SERVICE

I hereby certify that on August 5, 2022, a true copy of the following document(s):

PATENT OWNER TQ DELTA, LLC'S PRELIMINARY RESPONSE TO PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,485,055

was served via ***electronic mail*** to the address and parties as follows:

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I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on August 5, 2022 at Southlake, Texas.

/Christian J. Hurt/
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