

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ERICSSON INC. and TELEFONAKTIEBOLAGET LM ERICSSON,
Petitioner,

v.

INTELLECTUAL VENTURES II LLC,
Patent Owner.

Case IPR2014-01330
Patent 8,310,993 B2

Before BRIAN J. McNAMARA, DAVID C. McKONE, and
JASON J. CHUNG, *Administrative Patent Judges*.

CHUNG, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Inter Partes Review
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Procedural Background

Ericsson Inc. and Telefonaktiebolaget LM Ericsson (collectively “Petitioner”) filed a Petition (“Pet.”) for *inter partes* review of claims 1–12 of U.S. Patent No. 8,310,993 (“the ’993 patent”) (Ex. 1001) pursuant to 35 U.S.C. §§ 311–319. Paper 2. Intellectual Ventures II LLC (“Patent Owner”) filed a Preliminary Response (“Prelim. Resp.”). Paper 6. On February 23, 2015, we instituted review as to claims 1–12 of the ’993 patent and instituted trial on two grounds of unpatentability as set forth below. Paper 8 (“Dec. on Inst.”).

Claims	Grounds	Reference
1, 2, 4–8, and 10–12	§ 103(a)	Kakani ¹ , Sipola ² , and AAPA ³
3 and 9	§ 103(a)	Kakani, Sipola, AAPA, and Rinne ⁴

Patent Owner filed a Patent Owner’s Response (Paper 14, “PO Resp.”), and Petitioner filed a Reply (Paper 20, “Reply”). We heard Oral Argument on November 18, 2015. Paper 28, “Tr.”

¹ U.S. Patent Publication No. 2005/0054347 published Mar. 10, 2005 (Ex. 1008, “Kakani”).

² U.S. Patent No. 7,260,073 filed Dec. 2, 2002 (Ex. 1007, “Sipola”).

³ Petitioner cites to column 1, line 21, through column 4, line 4, in the Background of the Invention section of the ’993 patent as an admission of prior art (Applicant Admitted Prior Art, or “AAPA”). We agree that this section is an admission of the scope and content of the prior art and refer to AAPA to inform the knowledge of a person of ordinary skill in the art at the time of the invention. *Cf. Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015).

⁴ U.S. Patent No. 8,572,250 B2 filed Feb. 24, 2006 (Ex. 1011, “Rinne”).

B. Related Matters

Petitioner and Patent Owner identify five related district court proceedings. Pet. 1; Paper 5, 1.

C. Summary of Conclusions

In this Final Written Decision, issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 2, 4–8, and 10–12 are unpatentable.

II. THE '993 PATENT (Ex. 1001)

The '993 patent relates generally to packet data transmission in a wireless communication system. Ex. 1001, 1:15–19. According to the '993 patent, what the patent refers to as “transfer communication protocol” or “TCP” data segments are buffered in downlink (“DL”) TCP transmissions. *Id.* at 4:55–60. The buffered TCP data segments are transmitted from the buffer to the user equipment (“UE”). *Id.* at 4:60–63, Fig. 5. As the TCP segments are transmitted from the buffer, a counting logic counts a number of transmitted TCP segments that are transmitted to the UE. *Id.* at 5:4–7. The counting logic ensures that when a second segment is sent, uplink (“UL”) resources are allocated. *Id.* at 5:8–12; Fig. 5. After the UL resources are allocated and the DL message is processed, a stand-alone acknowledgement (“ACK”) message is transmitted in the UL. *Id.* at 5:36–39, Fig. 5.

Independent claim 1, reproduced below, is illustrative.

1. A wireless network comprising:
 - a circuit located in the wireless network, wherein the circuit buffers segments of transfer communication protocol (TCP) data for downlink (DL) transmission;
 - a transmitter arranged to transmit the buffered segments of TCP data to a user equipment (UE);
 - the circuit is further configured to count a number of transmitted segments of TCP data;
 - wherein the circuit is further configured, in response to the count exceeding a predetermined number, to transmit a message that indicates an allocation of uplink resources to transfer an uplink segment and the allocation of uplink resources is sufficient to have information indicating acknowledgment; and
 - wherein the circuit is further configured to receive, in response to the uplink resources, the uplink segment which includes the information indicating acknowledgment of receipt of the transmitted segments of TCP data.

III. CLAIM CONSTRUCTION

As a step in our analysis for determining whether to institute a review, we determine the meaning of the claims. In an *inter partes* review, a claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears. *See* 37 C.F.R. § 42.100(b). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). We construe the terms below in accordance with these principles.

Claim 1 recites a “circuit is further configured *to count* a number of transmitted segments of TCP data” and taking action “in response to *the count* exceeding a predetermined number.” Similarly, claim 7 recites “*counting*, by the network, a number of transmitted segments of TCP data” and taking action “in response to *the count* exceeding a predetermined number.” Patent Owner contends that Webster’s New World Dictionary of Computer Terms defines “count” as “the successive increase or decrease of a cumulative total of the number of times an event occurs.” PO Resp. 11–12; Ex. 2003. Petitioner, in response, contends the prosecution history indicates that “the count is of a number of sent segments of TCP data in the downlink.” Reply 4–6 (citing Ex. 1004, 14:2, 14:16–17).

We note that claim 1 recites “count” twice. Ex. 10:26–29. Claim 1 first recites “to count,” which is a verb.⁵ *Id.* at 10:26–27. Next, claim 1 recites “the count,” which is a noun. *Id.* at 28–29. Claim 7, similarly, first recites “counting” as a verb, then recites “the count,” a noun. *Id.* at 61–64. We address the verb and noun definitions of “count” in turn.

We agree with Patent Owner’s argument that “to count,” as recited in claim 1 (and “counting” as recited in claim 7) means “the successive increase or decrease of a cumulative total of the number of times an event occurs.” This is consistent with the verb form of “count,” as evidenced by

⁵ The expression “to count” actually is an infinitive, which is defined as “a verb form normally identical in English with the first person singular that performs some functions of a noun and at the same time displays some characteristics of a verb and that is used with *to* (as in “I asked him to go”) except with auxiliary and various other verb (as in “no one saw him *leave*).” Webster’s New Collegiate Dictionary at 591 (published by G. & C. Merriam Co. 1977).

Patent Owner's dictionary definition. Ex. 2003. It also is consistent with the Specification, which indicates that "[i]t is therefore possible to easily count DL segments (for each TCP flow, if necessary) and then when the counter reaches two allocate UL resources accordingly." Ex. 1001, 8:36–39.

We agree with Petitioner's argument as to the noun form of "count," however, namely that "*the count* is of a number of sent segments of TCP data in the downlink" (emphasis added). This is consistent with the Specification's description (Ex. 1001, 8:36–39, quoted above) of taking an action when a discrete number of downlink segments is reached by a counter.

IV. ANALYSIS

A. *Obviousness Claims 1, 2, 4–8 and 10–12*

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." We resolve the question of obviousness on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

In an obviousness analysis, some reason must be shown as to why a person of ordinary skill would have combined or modified the prior art to achieve the patented invention. See *Innogenetics, N.V. v. Abbott Labs.*, 512

F.3d 1363, 1374 (Fed. Cir. 2008). A reason to combine or modify the prior art may be found explicitly or implicitly in market forces; design incentives; the “interrelated teachings of multiple patents”; “any need or problem known in the field of endeavor at the time of invention and addressed by the patent”; and the background knowledge, creativity, and common sense of the person of ordinary skill. *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1328–29 (Fed. Cir. 2009) (quoting *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–21 (2007)).

1. Level of Skill in the Art

In determining the level of ordinary skill in the art at the time of the invention, various factors may be considered, including “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). The level of ordinary skill in the art also is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

Petitioner’s Declarant states that a person of ordinary skill in the art would have had a Bachelor or Master Degree in computer engineering, computer science, electrical engineering or equivalent experience or training. Decl. of Mark R. Lanning (“Lanning Decl.”) Ex. 1002 ¶ 37. Petitioner’s Declarant also states that this person would have at least three to five years of industrial or academic experience in communication systems, such as 3rd Generation Partnership Project and wireless cellular

communication systems. *Id.* Petitioner's Declarant states that this person would be familiar with Internet Protocol suite of protocols and understand the functionality of these protocols and interact in different layers of network topology. *Id.*

Patent Owner's Declarant proposes that a person of ordinary skill in the art would have an undergraduate degree in physics, electrical engineering, or equivalent and a minimum of three years of industrial or academic experience in 3rd Generation Partnership Project and familiarity with Internet Protocol suite of protocols. Decl. of Dr. Jonathan Wells ("Wells Decl.") Ex. 2002 ¶ 21). Alternatively, Patent Owner's Declarant states that this person would have a Master Degree in the same subjects and at least two years of such professional experience. *Id.*

Although we do not find that proposed definitions of one of ordinary skill to be significantly different for purposes of this decision, Petitioner's statement of the level of ordinary skill is consistent with Mr. Lanning's testimony and the technology described in the '993 patent and the cited prior art. Ex. 1002 ¶ 37. Accordingly, we adopt Petitioner's statement of the level of ordinary skill.

2. Scope and Content of the Prior Art

a. Kakani (Ex. 1008)

Kakani describes allocating uplink resources. Ex. 1008, Abs. Kakani also describes sending an acknowledgement packet in an uplink in response to every TCP data segment sent in a downlink. *Id.* at 33. Kakani further describes that an amount of uplink data is the amount that is required to transmit an acknowledgement signal, which allows an estimation and appropriate allocation of the uplink resources. *Id.*

b. Sipola (Ex. 1007)

Sipola describes detecting that a number of data packets have been transmitted, and generating an acknowledgement message in response.

Ex. 1007, Abs., 4:27–30, claim 13. Figure 1 is reproduced below.

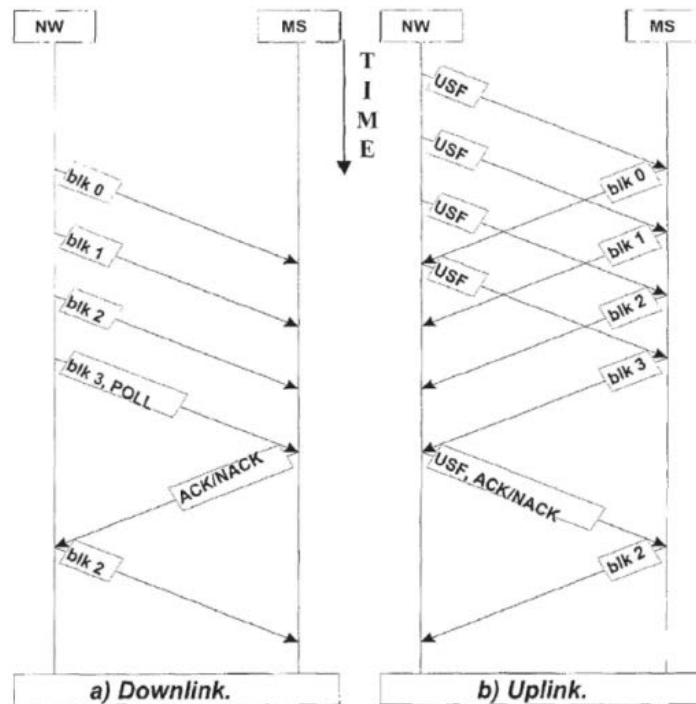


Fig. 1

Fig. 1 of Sipola illustrates, on the level of individual blocks, behavior in the downlink (Fig. 1a) and the uplink (Fig. 1b), respectively. Ex. 1007, 5:27–30. Sipola illustrates in Figure 1a “that a certain (sometimes predetermined) number of data packets are transmitted . . . before an acknowledgement procedure is carried out for this number of packets.” *Id.* at 6:60–64. Figure 1a further illustrates that “[a]s the network entity ‘knows’ that only four blocks in this example are to be transmitted, the fourth block blk3 includes a poll, i.e. a request for acknowledgement that the blocks were correctly received (Ack) or not (Nack). Upon receipt of the poll the terminal (MS) returns the acknowledgement message (in uplink)

direction to the network entity NW.” *Id.* at 8:6–13. Figure 1b, which represents the uplink, illustrates that a network entity “knows . . . that a continuous transmission turn includes four packets and may detect/count the number of received packets, or the packets themselves indicate their packet number thereby informing the network entity about the end of the continuous transmission turn . . . illustrated in Fig. 1b” *Id.* at 8:48–61.

c. AAPA (Ex. 1001)

AAPA is a portion of the “Background of the Invention” section of the ’993 patent describing Figures 1–3, each of which is labeled “prior art.” AAPA explains that it was known to buffer a TCP segment at a network’s downlink buffer. Ex. 1001, 4:23–32, Fig. 3. AAPA discusses UE 305 transmitting a message to network 310 that requests uplink resources for transmitting an acknowledgement message and “[i]n response thereto, the network 310 transmits a message to the UE 305 allocating UL resources.” *Id.* at 4:35–41. AAPA further describes transmitting an acknowledgement in response to a TCP segment transmission. *Id.* at 3:64–4:1.

3. Comparing the Prior Art and the Claimed Subject Matter; Reason to Combine

We are persuaded by Petitioner that Kakani teaches allocating resources in an uplink of a wireless/cellular communication system, which teaches the claimed limitation “a wireless network,” as recited in claim 1 (and similarly recited in claim 7). Pet. 33 (citing Ex. 1008 ¶ 2).

We are persuaded that Sipola teaches a packet scheduler controlling a Media Access Control (MAC) layer to transmit in the uplink and indicate to which mobile station each block is targeted, which teaches the claimed

limitation “a circuit located in the a wireless network,” as recited in claim 1 (and similarly recited in claim 7). Pet. 33 (citing Ex. 1007, 2:1–11).

We are persuaded that AAPA teaches at least one TCP segment buffered in a network’s downlink buffer, which teaches the claimed limitation “wherein the circuit buffers segments of transfer communication protocol (TCP) data for downlink (DL),” as recited in claim 1 (and similarly recited in claim 7). Pet. 33 (citing Ex. 1001, 4:23–28, Fig. 3).

We are persuaded that AAPA teaches a TCP segment transmitted between a buffer and a UE and that the TCP segment is received by the UE after being buffered, which teaches the claimed limitation “a transmitter arranged to transmit the buffered segments of TCP data to a user equipment (UE),” as recited in claim 1 (and similarly recited in claim 7). Pet. 34 (citing Ex. 1001, 4:27–32, Fig. 3).

We are persuaded that Sipola teaches a network entity (e.g., circuit) that detects the number of transmitted blocks, which teaches the claimed limitation “the circuit is further configured to count a number of transmitted segments of TCP data,” as recited in claim 1 (and similarly recited in claim 7). Pet. 34–35 (citing Ex. 1007, Abs., claim 13). Patent Owner contests this limitation. We address Petitioner’s and Patent Owner’s respective contentions regarding this limitation in detail below.

We are persuaded that Sipola teaches detecting that a certain number of packets have been transmitted, and in response thereto, generating an acknowledgement message, which teaches the claimed limitation “wherein the circuit is further configured, in response to the count exceeding a predetermined number,” as recited in claim 1 (and similarly recited in claim 7). Pet. 35 (citing Ex. 1007, 4:27–29). Patent Owner contests this

limitation. We address Petitioner's and Patent Owner's respective contentions regarding this limitation in detail below.

We are persuaded that AAPA's disclosure of "the network 310 transmits a message to the UE 305 allocating UL resources" to transmit an acknowledgement teaches the limitation "to transmit a message that indicates an allocation of uplink resources to transfer an uplink segment and the allocation of uplink resources is sufficient to have information indicating acknowledgement" as recited in claim 1 (and similarly recited in claim 7). Pet. 35–36 (citing Ex. 1001, 4:35–41). Patent Owner contests this limitation. We address Petitioner's and Patent Owner's respective contentions regarding this limitation in detail below.

We are persuaded that AAPA's disclosure of "the network 310 transmits a message to the UE 305 allocating UL resources . . . to implement the data transfer . . . which includes an 'ACK' message" teaches "wherein the circuit is further configured to receive, in response to the uplink resources, the uplink segment which includes the information indicating acknowledgement of receipt of the transmitted segments of TCP data." Pet. 36–37 (citing Ex. 1001, 4:35–41).

We are persuaded that Kakani teaches allowing uplink resources to be estimated and appropriately allocated to the mobile station for an acknowledgement signal to be transmitted, which teaches the claimed limitation, "indicat[ing] an allocation of uplink resources . . . in response to the uplink resources, the uplink segment which includes the information indicating acknowledgement of receipt of the transmitted segments of TCP data," as recited in claim 1 (and similarly recited in claim 7). Pet. 35–37 (citing Ex. 1008 ¶ 33).

Furthermore, we find persuasive Petitioner’s argument that it would have been obvious to one of ordinary skill in the art to combine Kakani, Sipola, and AAPA “for the purpose of counting the number of TCP packets sent ‘in the downlink,’ so that ‘[t]he network can allocate uplink resources accordingly.’” Pet. 39 (citing Ex. 1008 ¶ 40; Ex. 1002 ¶ 123). Moreover, we find persuasive Petitioner’s argument that it would have been obvious to combine the features of Kakani, Sipola, and AAPA “to comply with RFC 1122, as noted in AAPA, to ensure ‘an ‘ACK’ is transmitted for ‘every second full-sized data segment’ received.’” Pet. 40 (citing Ex. 1001, 3:59–61; Ex. 1002 ¶ 128). RFC1122 is titled “Requirements for Internet Hosts – Communications Layers.” Ex. 1001, at [56]. Both Patent Owner and Petitioner acknowledge that a person having ordinary skill in the art would have familiarity with Internet Protocol suite of protocols. Ex. 1002 ¶ 37; Ex. 2002 ¶ 21. The ’993 patent describes RFC 1122 as one of the protocols of the TCP/IP suite of protocols describing acknowledgment functionality that a skilled artisan would have been familiar with. Ex. 1001, 3:50–56. We find that a skilled artisan would have understood that conforming to RFC 1122 would have made a device more likely to be compatible with the Internet Protocol (“IP”) suite of protocols. Ex. 1002 ¶ 128. Patent Owner contests both of these rationales to combine. We address Petitioner’s and Patent Owner’s respective contentions regarding these rationales to combine in detail below.

As Petitioner notes, AAPA in the ’993 Patent teaches that it is known in the art for TCP to use a “shared channel” in a request and allocate wireless system. Pet. 41–42 (citing Ex. 1001, 4:23–25). Thus, the AAPA in

the '993 Patent teaches the corresponding limitations recited in claims 2 and 8.

As Petitioner notes, AAPA in the '993 Patent teaches that TCP responses with stand-alone acknowledgments sent from the user equipment to the network are known in the art. Pet. 42–43 (citing Ex. 1001, Figs. 2–3). Thus, the AAPA in the '993 Patent teaches the corresponding limitations recited in claims 4 and 10.

As Petitioner notes, AAPA in the '993 Patent teaches that “piggyback[ing]” data with an uplink acknowledgement message is known in the art. Pet. 44 (citing Ex. 1001, 3:44–45). Thus, the AAPA in the '993 Patent teaches the corresponding limitations recited in claims 5 and 11.

As Petitioner notes, AAPA in the '993 Patent teaches base stations referred to as Node-Bs, as well as radio network controllers that control transmission over the air interface, are known in the art. Pet. 45 (citing Ex. 1001, 2:24–29). Thus, the AAPA teaches the corresponding limitations recited in claim 6 and similarly recited in claim 12.

The parties' dispute is directed to whether the combination of Kakani, Sipola, and AAPA in the '993 Patent teach the limitation “to count” as recited in claim 1 (and “counting” as recited in claim 7).

Patent Owner advances four related arguments, which include: (1) the prior art fails to teach “in response to [a] count” of “transmitted segments” as recited in claims 1 and 7; (2) Sipola and Kakani fails to teach “transmit[ting] a message that indicates an allocation of uplink resources” as recited in claim 1 (and similarly recited in claim 7); (3) the prior art fails to teach “to count a number of transmitted [downlink] segments of TCP data” as recited in claim 1 (and similarly recited in claim 7) because the only

counting or detecting of received TCP segments taught by the prior art is on the uplink side; and (4) the “motivations to combine Kakani, Sipola, and AAPA are flawed because” the motivations rely on downlink counting that is not taught in the prior art or the motivations rely on a certain number of “received packets.” PO Resp. 12–14. We address each of Patent Owner’s four arguments in turn.

a. The Prior art Teaches the Limitation “in Response to” as Recited in Claims 1 and 7

Petitioner contends that Sipola’s description of “*detecting that a certain number of packet data has been transmitted* via the transmission resource, and *in response thereto*, generating an acknowledgement message” (Ex. 1007, 4:27–29 (emphasis added)) teaches “a message that indicates an allocation of uplink resources” that is “in response to [a] count” of “transmitted segments” as recited in claims 1 and 7. Pet. 35. Petitioner notes that the Background of the Invention of the ’993 patent Specification quotes RFC 1122, which, according to Petitioner, “confirms that it was well known to utilize a counter/detector for similar purposes, such as ‘measuring the amount of retransmissions that has occurred . . . as a *count* of retransmissions’ to detect ‘[w]hen the number of transmissions of the same segment reaches or exceeds threshold R1’” (emphasis added). Reply 10 (citing Ex. 2007, 95, 100, 105; Ex. 1001, 3:50–56). Thus, according to Petitioner, a person of ordinary skill would have recognized “that detecting the certain number of data packets in Sipola would be accomplished by the network *counting* the number of data packets transmitted” (emphasis added). *Id.* at 10–11 (citing Ex. 1002 ¶ 120).

Moreover, Petitioner relies on AAPA's disclosure of UE 305 transmitting a message to network 310 that requests uplink resources for transmitting an acknowledgement message and “[i]n response thereto, the network 310 *transmits a message to the UE 305 allocating UL resources*” (emphasis added) to teach the limitation “a message that indicates an allocation of uplink resources” as recited in claims 1 and 7. Pet. 35–36 (citing Ex. 1001, 4:35–41).

In addition, Petitioner cites Kakani, which teaches transmitting data segments in the downlink (similar to Sipola and AAPA) and sending acknowledgement packets in the uplink (similar to Sipola and AAPA). Pet. 34–35 (citing Ex. 1008 ¶ 33). Petitioner also relies on Kakani's disclosure of “the uplink resources [for the uplink acknowledgement] to be estimated and appropriately *allocated* to the MS” (emphasis added) to teach the limitation “an allocation of uplink resources” as recited in claims 1 and 7. Pet. 34–35 (citing Ex. 1008 ¶ 33). Mr. Lanning testifies that it would have been obvious to combine Sipola, Kakani, and AAPA for the purpose of “comply[ing] with RFC 1122, as noted in AAPA, to ensure ‘an ‘ACK’ is transmitted for ‘every second full-sized data segment’ received.’” Pet. 40 (citing Ex. 1001, 3:59–61; Ex. 1002 ¶ 128).

Patent Owner argues the Sipola fails to teach “a message that indicates an allocation of uplink resources” that is “in response to [a] count” of “transmitted segments” as recited in claims 1 and 7 because focusing on individual elements of the claim while ignoring the link between the claim elements does not render the claim obvious. PO Resp. at 14–15. Patent Owner argues that the claimed invention as a whole is not obvious because the “in response to” counting nexus is missing from the applied prior art. *Id.*

According to Patent Owner, Sipola links detecting transmissions with an acknowledgement message, instead of linking detecting transmissions with a message allocating resources. PO Resp. 15 (citing Ex. 1007, 4:27–29; Decl. of Dr. Jonathan Wells (“Wells Decl.”) Ex. 2002 ¶ 46).

Petitioner rebuts Patent Owner’s argument concerning the teachings of Sipola with persuasive testimony that a skilled artisan, when analyzing Sipola, would have recognized that counting is a straightforward and well known way of detecting a number of transmissions. Reply 10–11 (citing Ex. 1002 ¶ 120). Sipola’s disclosure of receiving an acknowledgement is “in response thereto” a certain number of transmitted packets. Ex. 1007, 4:27–29. As stated *infra* in Part IV.A.3.c.ii., “counting” is obvious from Sipola’s “detect[ing].” In view of this evidence, we find that Sipola renders obvious the limitation “receiv[ing] . . . acknowledgement” that is “in response to [a] count” of “transmitted segments” as recited in claim 1 (and similarly recited in claim 7).

Patent Owner argues that AAPA fails to teach the “in response to” link because AAPA’s message indicating an allocation of uplink resources is made in response to a user equipment request rather than “in response to the count exceeding a predetermined number.” PO Resp. 16 (citing 2002 ¶ 44). Patent Owner further argues that Petitioners do not rely on Kakani for this feature and Kakani fails to teach this feature. PO Resp. 16.

Petitioner rebuts Patent Owner’s arguments concerning the AAPA with evidence that includes the cross-examination of Patent Owner’s witness, Dr. Wells, (Reply 13–14 (citing Deposition of Dr. Jonathan Wells (“Wells Deposition”) Ex. 1014, 53:11–15)), which confirms that AAPA’s disclosure of transmitting a message to UE 305 requesting an allocation of

uplink resources (Ex. 1001, step 345 of Fig. 3) is in response to transmitted segments (Ex. 1001, step 325 of Fig. 3). In view of this testimony, we find that AAPA teaches the limitation “a message that indicates an allocation of uplink resources” that is “in response to” “transmitted segments” as recited in claim 1 (and similarly recited in claim 7).

Petitioner also cites evidence that Kakani itself describes receiving an “allocat[ion] to the MS” of uplink resources that is in response to a “data segment sent in the downlink.” Pet. 34–36 (citing Ex. 1008 ¶ 33). In view of this evidence, we find that paragraph 33 of Kakani, thus, teaches the limitation “an allocation of uplink resources” that is “in response to” a “transmitted segment[]” as recited in claim 1 (and similarly recited in claim 7).

We agree with Petitioner because Patent Owner cannot show nonobviousness “by attacking references individually” where Petitioner’s grounds of unpatentability are based on combinations of references. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (citing *In re Keller*, 642 F.2d 413, 426 (CCPA 1981)). In addition, we find that Petitioner’s evidence demonstrates that each of Sipola, Kakani, and AAPA teach a triggering event that is “in response to” transmitted segments. We agree with Petitioner’s evidence that one having ordinary skill in the art would have combined the “in response to” features taught in Sipola, Kakani, and AAPA “for the purpose of counting the number of TCP packets sent ‘in the downlink,’ so that ‘[t]he network can allocate uplink resources accordingly’” (Pet. 39) and “to comply with RFC 1122, as noted in AAPA, to ensure ‘an ‘ACK’ is transmitted for ‘every second full-sized data segment’ received’” (Pet. 40). Thus, the combination of Kakani, Sipola, and AAPA teaches the

claim as a whole because the “in response to” nexus, as recited in claims 1 and 7, is taught in the prior art.

b. The Prior art Teaches the Limitation “Transmit[ting] a Message that Indicates an Allocation of Uplink Resources is Sufficient to have Information Indicating Acknowledgement” as Recited in Claim 1 (and similarly recited in Claim 7)

Petitioner introduces evidence that includes the cross-examination of Dr. Wells (Reply 13–14 (citing Ex. 1014, 53:11–15)), which includes “there ***necessarily*** must have been an allocation of uplink resources provided from the network to the UE prior to the UE transmitting the acknowledgement message” (emphasis added by Petitioner).

Petitioner also introduces evidence that Kakani describes receiving an “acknowledgement signal” in response to an “allocat[ion] to the MS” of uplink resources. Pet. 34–36 (citing 1008 ¶ 33).

Patent Owner argues that Kakani fails to teach “transmit[ting] a message that indicates an allocation of uplink resources to transfer an uplink segment and the allocation of uplink resources is sufficient to have information indicating acknowledgement” as recited in claim 1 (and similarly recited in claim 7). Specifically, Patent Owner argues that paragraph 33 of Kakani does not teach “a message” indicating uplink resources allocation; rather, paragraph 33 of Kakani merely teaches allocating uplink resources. PO Resp. 17 (citing 2002 ¶ 50). In addition, Patent Owner contends that Kakani fails to teach what triggers the message indicating an allocation and when to transmit the allocation message. PO Resp. 18 (citing Ex. 2002 ¶ 51)

Patent Owner's Declarant, however, confirms that before an acknowledgement is sent, "there *necessarily* must have been an allocation of uplink resources provided from the network to the UE prior to the UE transmitting the acknowledgement message" (emphasis added by Petitioner). Reply 13–14 (citing Ex. 1014, 53:11–15). This argument is premised on AAPA's disclosure of transmitting a message to UE 305 requesting an allocation of uplink resources that leads to an acknowledgement transmission from UE 305 to network 310 (Ex. 1001, step 355 of Fig. 3). Petitioner, thus, relies on AAPA's disclosure of transmitting a message to UE 305 requesting an allocation of uplink resources that leads to an acknowledgement transmission from UE 305 to network 310 to teach the limitation "transmit[ting] a message that indicates an allocation of uplink resources is sufficient to have information indicating acknowledgement" as recited in claim 1 (and similarly recited in claim 7). Reply 13; Pet. 35–36.

We find that column 4, lines 37–41, of AAPA pertains to AAPA's Figure 3 because the element numbers in lines 37–41 correspond to AAPA's Figure 3. Furthermore, in view of Patent Owner's Declarant testimony and AAPA's Figure 3, we find that specific steps of AAPA's Figure 3 teach the limitation "transmit[ting] a message that indicates an allocation of uplink resources" (see Ex. 1001, step 345 of Fig. 3) that "is sufficient to have information indicating acknowledgement" (see Ex. 1001, step 355 of Fig. 3) as recited in claim 1 (and similarly recited in claim 7).

Patent Owner argues that Sipola and AAPA fail to teach "a message that indicates an allocation of uplink resources to transfer an uplink segment and the allocation of uplink resources is sufficient to have information indicating acknowledgement" as recited in claim 1 (and similarly recited in

claim 7). PO Resp. 18. In particular, Patent Owner contends that Sipola fails to teach a message indicating uplink resource allocation and merely is relied upon to teach transmitting blocks in a downlink and incorporating a polling flag in the final block of a data transmission. *Id.* at 18–19 (citing Ex. 2002 ¶ 53; Ex. 1007, 8:10–12). Patent Owner also alleges that AAPA fails to teach this limitation because Petitioner merely relies on AAPA for providing a motivation to combine. *Id.* (citing Ex. 1002 ¶¶ 127–130; Pet. 40–41).

As stated *supra*, we find that AAPA teaches the limitation “transmit[ting] a message that indicates an allocation of uplink resources is sufficient to have information indicating acknowledgement” as recited in claim 1 (and similarly recited in claim 7).

We have considered Petitioner’s evidence discussed *supra*, and find that Petitioner relies on AAPA for more than motivation to combine because Petitioner cited and quoted column 4, lines 37–41, of AAPA on pages 35 and 36 of the Petition; pages 35 and 36 of the Petition pertain to the limitation “transmit[ting] a message that indicates an allocation of uplink resources is sufficient to have information indicating acknowledgement” as recited in claim 1 (and similarly recited in claim 7). Petitioner also cites column 4, lines 37–41, of AAPA on page 13 of the Reply. Thus, Patent Owner’s argument is not persuasive.

c. The Prior art Teaches “to Count a Number of Transmitted Segments” as Recited in Claim 1 (and Similarly Recited in Claim 7)

According to Petitioner, Sipola’s disclosure of the network entity “know[ing]” the number of transmitted blocks teaches the limitation “the

circuit is further configured to count a number of transmitted segments of TCP data” in the downlink direction in claim 1 (and the similarly recited limitation in claim 7). Reply 6–8. In addition, Petitioner contends that Sipola’s disclosure of “detecting that a certain number of packet data has been transmitted” in the downlink direction teaches “to count a number of transmitted segments” as recited in claim 1 (and similarly recited in claim 7). Pet. 19–20. According to Petitioner, a person of ordinary skill would have recognized “that detecting the certain number of data packets in Sipola would be accomplished by the network *counting* the number of data packets transmitted” (emphasis added). Reply 10–11 (citing Ex. 1002 ¶ 120).

Patent Owner argues that Petitioner’s argument that the limitation “to count a number of transmitted segments of TCP data” as recited in claim 1 (and similarly recited in claim 7), would not have been obvious. PO Resp. 20. In particular, Patent Owner contends that “counting” as recited in claim 7 (and similarly recited in claim 1) is on the transmission side. *Id.* (citing Ex. 2002 ¶ 57). Patent Owner, thus, argues that Sipola’s “knowing” and “detecting” fails to teach “to count a number of transmitted segments of TCP data” as recited in claim 1 (and similarly recited in claim 7). We address Sipola’s “knowing” and “detecting” in turn.

*i. Sipola’s Knowing That Blocks “Are To Be Transmitted” Does Not Teach
“to Count a Number of Transmitted Segments”*

According to Petitioner, Sipola’s disclosure of the network entity “know[ing]” the number of transmitted blocks teaches the claim 1 limitation (and similarly recited in claim 7) “the circuit is further configured to count a number of transmitted segments of TCP data” in the downlink direction. Reply 6–8. Specifically, Petitioner argues that Sipola’s disclosure of

“knowing” teaches “to count” as recited in claim 1 (and “counting” as recited in claim 7) because the Specification of the ’993 patent equates “knowing” with “to count” as recited in claim 1 (and “counting” as recited in claim 7). Reply 7–8. Attempting to illustrate that “knowing” in Sipola teaches the “to count” and “counting” limitations, Petitioner cites the Specification of the ’993 patent, which states:

The network determines that an ACK is likely to be generated by the receiving UE in response to the transmitted TCP data segment, in step 515. **The knowledge** is based on the fact that with a delayed ACK feature **there will be an ACK every other segment. It is therefore possible to easily count DL segments (for each TCP flow, if necessary) and then when the counter reaches two allocate UL resources accordingly.**

Id. at 7–8 (citing Ex. 1001, 8:32–39) (emphasis added by Petitioner).

However, the cited disclosure in the ’993 Patent illustrates the difference between knowing and counting. The Specification of the ’993 patent, states that “[t]he knowledge” is based on an acknowledgement and a counter reaching a certain number. Ex. 1001, 8:32–39. Put another way, the Specification of the ’993 patent states the knowledge is acquired from: (1) an acknowledgement; and (2) a counter reaching a certain number. *Id.* The Specification of the ’993 patent, thus, does not illustrate that “knowing” is a teaching of “to count” as recited in claim 1 (or “counting,” as recited in claim 7). Specifically, Petitioner has not shown that Sipola’s “know[ing]” is a teaching of “the successive increase or decrease of a cumulative total of the number of times an event occurs,” as we have construed “to count” and “counting,” as discussed *supra* in Part III.

Petitioner also contends that it would have been obvious to use Sipola's knowledge of blocks to be transmitted to "count the number of blocks transmitted to carry out an acknowledgement procedure 'upon completion of the transmission of blk3.'" Reply 8 (citing Ex. 1007, 8:7–14).

Petitioner's obviousness rationale, however, lacks citation to expert testimony evidence explaining why it would have been obvious "to count" the number of transmitted blocks from Sipola's knowledge of blocks to be transmitted. Patent Owner, in contrast, relies on expert testimony evidence to show four examples of why "it is also not an obvious substitution" to replace "knowing" with "counting" as recited in claim 7 (and similarly recited in claim 1). PO Resp. 22 (citing Ex. 2002 ¶ 59).

We further note that claim 1 recites a circuit configured "to count a number of *transmitted* segments." In contrast, the disclosure in Sipola relied upon by Petitioner teaches a network entity knowing that a number of blocks "are to be transmitted." Reply 8 (citing Ex. 1007, 8:7–14). Thus, claim 1 recites counting a number of segments that already have been transmitted while Sipola teaches knowing a number of blocks in advance of transmission. In another example, Sipola teaches that "the number may be determined *during* transmission" (emphasis added). Ex. 1007, 6:67–7:1. However, here Sipola does not discuss how this number is determined during transmission. Sipola's disclosures of a network device knowing that four blocks are *to be* transmitted or determining the number *during* transmission are not teachings of "the circuit is further configured *to count a number of transmitted segments* of TCP data" (emphasis added), as required in claim 1 (and similarly required in claim 7).

ii. One of Ordinary Skill in the Art Would have Recognized that Sipola's Detecting that a Certain Number of Packet data have been Transmitted Would Render Obvious "to Count a Number of Transmitted Segments"

Sipola describes "detecting that a certain number of packet data has been transmitted" in the downlink direction. Ex. 1007, 4:27–28. Petitioner contends that "detecting" teaches "counting." Pet. 19–20. For example, Petitioner notes that the Background of the Invention of the '993 patent Specification quotes RFC 1122, which, according to Petitioner, "confirms that it was well known to utilize a counter/detector for similar purposes, such as 'measuring the amount of retransmissions that has occurred . . . as a *count* of retransmissions' to detect '[w]hen the number of transmissions of the same segment reaches or exceeds threshold R1'" (emphasis added). Reply 10 (citing Ex. 2007, 95, 100, 105; Ex. 1001, 3:50–56). Thus, according to Petitioner, a person of ordinary skill would have recognized "that detecting the certain number of data packets in Sipola would be accomplished by the network *counting* the number of data packets transmitted" (emphasis added). *Id.* at 10–11 (Ex 1002 ¶ 120).

Sipola also describes, in the uplink direction, "[t]he network entity knows in this chosen example that a continuous transmission turn comprises four packets and may *detect/count* the number of received packets." Ex. 1007, 8:56–58. Petitioner contends that this disclosure shows that detecting is synonymous with counting. Pet. 19–20.

Patent Owner contends Figure 1b of Sipola's uplink transmission fails to teach any features relevant to a downlink transmission because the downlink and uplink transmissions are different. PO Resp. 23 (citing Ex. 1007, 8:62–67; Ex. 2002 ¶ 62). In particular, Patent Owner argues that

Sipola's network entity "detects/counts" "the 'number of *received* packets'" (emphasis added by Patent Owner) in uplink transmissions to determine and return an acknowledgement or non-acknowledgement message. *Id.*

Moreover, Patent Owner argues neither Petitioner nor Sipola provide a rationale for why counting in the uplink transmission would be applicable to the downlink transmission. *Id.* (citing Ex. 2002 ¶ 62).

Patent Owner further contends a person having ordinary skill in the art would recognize the significant differences between downlink and uplink communications in a wireless transmissions network so that they would not apply blindly the uplink techniques with the downlink techniques. PO Resp. 23 (citing Ex. 2002 ¶¶ 55, 59, 64). Specifically, Patent Owner presents evidence that in uplink data transmissions, optimizing wireless transmissions is important for power efficiency; in contrast, in a downlink data transmission, optimizing wireless transmissions is important for sharing the limited spectrum between multiple users simultaneously while managing quality of service and data to each user. PO Resp. 23–24 (citing Ex. 2002 ¶ 64). Patent Owner further contends that Mr. Lanning fails to account for these differences. PO Resp. 24 (citing Ex. 1007, 7:4–6; Ex. 1002 ¶¶ 119–123).

Petitioner contends that Mr. Lanning's testimony shows that Sipola's disclosure of Figure 1b depicting "a *similar* scenario in the uplink transmission" (emphasis added) evidences that the teachings of Figure 1b could be used with those of Figure 1a. Pet. 20–21 (citing Ex. 1007, 8:48–58; Ex. 1002 ¶ 63). At the oral hearing, Petitioner noted that Sipola explains that the uplink procedure shown in Figure 1b could be used in the downlink. Tr. 16:13–21, 21:1–5 (citing Ex. 1007, 7:20–22 ("The first method is

especially suitable for the uplink and the second for the downlink, although both methods are of course possible in each link.”). Thus, Sipola itself shows the applicability of Figure 1b’s teachings to both uplink and downlink transmissions. This evidence supports the testimony of Mr. Lanning on this point and contradicts Dr. Wells’ testimony. Accordingly, we credit Mr. Lanning’s testimony that a skilled artisan would have recognized the applicability of Figure 1b’s teachings for uplink transmissions.

Patent Owner contends that Mr. Lanning admits that “detecting” and “counting” were distinct concepts by stating “[o]nce you have detected that you have a legitimate packet, then you count it but you don’t count before you detect that you have got a legitimate packet and a receiver.” PO Resp. 24 (citing Deposition of Mark R. Lanning (“Lanning Deposition”), Ex. 2001, 92:13–93:1).

Although Petitioner admits that “detecting” and “counting” are distinct concepts, Petitioner notes that the Background of the Invention of the ’993 patent Specification quotes RFC 1122, which, according to Petitioner, “confirms that it was well known to utilize a counter/detector for similar purposes, such as ‘measuring the amount of retransmissions that has occurred . . . as a *count* of retransmissions’ to detect ‘[w]hen the number of transmissions of the same segment reaches or exceeds threshold R1’” (emphasis added). Reply 10 (citing Ex. 2007, 95, 100, 105; Ex. 1001, 3:50–56). Thus, according to Petitioner, a person of ordinary skill would have recognized “that detecting the certain number of data packets in Sipola would be accomplished by the network *counting* the number of data packets transmitted” (emphasis added). *Id.* at 10–11 (Ex. 1002 ¶ 120).

Petitioner has introduced evidence, including expert testimony and the teachings of Sipola itself, that a skilled artisan would have recognized that counting is a straightforward and well known way of detecting a number of transmissions. Thus, even if Sipola does not explicitly state that it performs counting of transmission in the downlink direction, it would have been obvious to do so in light of Petitioner's evidence. A person having ordinary skill in the art would have recognized Sipola to render obvious the limitation "to count a number of transmitted segments" as recited in claim 1 (and similarly recited in claim 7). Petitioner, thus, demonstrates that "detecting" and "counting" are obvious concepts with respect to each other.

d. Petitioners Proffer Sufficient Motivation to Combine Kakani, Sipola, and AAPA Because the Asserted Art Teaches Counting Transmitted Packets

Petitioner argues that the disclosure in claims 13 and 17 of Sipola describes that "[a] control device compris[es] . . . a first detector configured to detect that the number of packet data has been transmitted" and that Sipola's description of "[t]he control device . . . further comprising . . . a transmitter configured to transmit at least one packet" teaches that detecting the number of transmitted downstream packets is performed on the transmitting side of the control device. Pet. 34 (citing Ex. 1007, claims 13 and 17). In addition, as stated *supra* in Part IV.A.3.c.ii., Petitioner contends that "counting" and "detecting" are obvious variations of each other.

Patent Owner contends that Petitioner's two rationales to combine Kakani, Sipola, and AAPA fail because they rely on counting the number of *received* packets sent in the downlink. PO Resp. 25 (citing Ex. 1002 ¶¶123, 128). In particular, Patent Owner contends the first rationale that "[o]ne of

ordinary skill in the art would have been motivated to apply the teachings of Sipola to Kakani for the purpose of *counting the number of TCP packets sent in the downlink* so that “[t]he network can allocate uplink resources accordingly” (emphasis added by Patent Owner) fails because it relies on counting received packets rather than counting transmitted packets. PO Resp. 25 (citing Ex. 1007, 8:58; Ex. 2002 ¶¶ 59–60). Patent Owner further contends that Mr. Lanning admits that counting on the receive side is different than counting on the transmitting side. PO Resp. 25 (citing Ex. 2001, 99:11–16). Patent Owner argues that Petitioner’s motivation would have led to a person having ordinary skill in the art using a conventional method of monitoring received packets rather than monitoring transmitted packets. PO Resp. 25 (citing Ex. 2002 ¶ 71).

We have considered Petitioner’s evidence discussed *supra*, and we credit Mr. Lanning’s testimony that Sipola’s disclosure of Figure 1b depicting “a *similar* scenario in the uplink transmission” (emphasis added) illustrates that the teachings of Figure 1b could be used with those of Figure 1a. Pet. 20–21 (citing Ex. 1007, 8:48–58; Ex. 1002 ¶ 63). In addition, we agree with Petitioner’s rebuttal argument that Sipola explains that the uplink procedure shown in Figure 1b could be used in the downlink. Tr. 16:13–21, 21:1–5 (citing Ex. 1007, 7:20–22 (“The first method is especially suitable for the uplink and the second for the downlink, although both methods are of course possible in each link.”)).

In addition, we agree with Petitioner that claims 13 and 17 of Sipola teach that detecting the number of transmitted downstream packets is performed on the transmitting side of the control device. Pet. 34 (citing Ex. 1007, claims 13 and 17 (“[a] control device compris[es] . . . a first

detector configured to detect that the number of packet data has been transmitted” and “[t]he control device . . . further comprising . . . a transmitter configured to transmit at least one packet”).

Petitioner’s first rationale, thus, is sufficient reason to combine Kakani, Sipola, and AAPA.

Patent Owner contends that Petitioner’s second rationale of “[o]ne of ordinary skill in the art would have been motivated to apply Sipola to perform a bulk TCP data transfer taught by Kakani in order to comply with RFC 1122: to ensure ‘an ACK’ is transmitted for ‘every second full-sized data segment *received*’” fails for the same reasons as the first rationale because it focuses on “counting a number of *received* segments, and not the number of *transmitted* segments” (emphasis added by Patent Owner). PO Resp. 26 (citing Ex. 1002 ¶ 128).

We have considered Petitioner’s evidence discussed *supra*, and we agree with Petitioner’s second rationale for the same reasons stated *supra* pertaining to our agreement with Petitioner’s first rationale.

Petitioner’s second rationale, thus, is sufficient motivation to combine Kakani, Sipola, and AAPA.

Accordingly, Petitioner has shown by a preponderance of the evidence that the combination of Kakani, Sipola, and AAPA teach the limitations in claims 1, 2, 4–8, and 10–12. In addition, Petitioner has shown by a preponderance of the evidence that the combination of Kakani, Sipola, and AAPA renders obvious the subject matter recited in claims 1, 2, 4–8, and 10–12.

B. Dependent Claims 3 and 9

1. Scope and Content of Rinne (Ex. 1011)

Rinne describes transmitting allocation information in accordance with at least one allocation rule. Ex. 1011, Abs. Rinne also describes an allocation of uplink transmission resources and an allocation of downlink transmission resources. *Id.* at 7:5–8. Rinne further discusses an uplink that is delayed with respect to a downlink. *Id.* at 32:32–33.

2. Comparing the Prior Art and the Claimed Subject Matter

Claims 3 and 9 depend from claims 1 and 7, respectively. Petitioner refers to Rinne’s disclosure that an uplink is delayed with respect to a downlink to teach “an allocation of uplink resources is at a time interval delayed with respect to the allocation of downlink resources” as recited in claims 3 and 9. Pet. 46 (citing Ex. 1011, 32:32–33).

Petitioner argues that the reason to combine Rinne with Kakani, Sipola, and AAPA would be to benefit the terminals and the base station because signaling overhead will be reduced. Reply 20 (citing Pet. 47–48; Ex. 1011, 20:2–4; Ex. 1002 ¶157). In addition, Petitioner contends

it would have been obvious that while these uplink and downlink allocations occur at substantially the same time, a temporal offset may be applied between the allocations (e.g., time interval delayed) to account for processing time.

Id. (citing Ex. 1002 ¶ 159).

Although Rinne teaches that an uplink is delayed with respect to a downlink (Pet. 46; Ex. 1011, 32:32–33), Rinne does not teach explicitly “an allocation of uplink resources *is at a time interval delayed with respect to*

the allocation of downlink resources” as recited in claims 3(b) and 9(b). Petitioner merely “provide[s] a conclusory statement without any explanation why a skilled artisan would have been motivated to incorporate the features of Rinne with the other references.” PO Resp. 26–27. Mr. Lanning’s testimony simply “quotes a rationale from Rinne without explaining why one of ordinary skill in the art would look to Rinne using the disclosure of Kakani, failing to make a sufficient showing of obviousness.” *Id* (citing Ex. 1002 ¶ 159). Moreover, Petitioner fails to point to any additional evidence articulating how Rinne teaches, suggests, or renders obvious “an *allocation* of uplink resources *is at a time interval delayed with respect to the allocation* of downlink resources” as recited in claims 3 and 9. Tr. 58:12–60:9.

Accordingly, Petitioner has not shown by a preponderance of the evidence that the cited portions of Kakani, Sipola, AAPA, and Rinne teach the limitations in claims 3 and 9.

V. CONCLUSIONS

For the reasons set forth above, we are persuaded that Petitioner has shown by a preponderance of the evidence that claims 1, 2, 4–8, and 10–12 of the ’993 patent are unpatentable. For the reasons set forth above, we are not persuaded that Petitioner has shown by a preponderance of the evidence that claims 3 and 9 of the ’993 patent are unpatentable.

VI. ORDER

Accordingly, it is

ORDERED that claims 1, 2, 4–8, and 10–12 of U.S. Patent No.

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8,310,993 B2 have been shown by a preponderance of the evidence to be unpatentable;

FURTHER ORDERED that claims 3 and 9 of U.S. Patent No.

8,310,993 B2 have not been shown by a preponderance of the evidence to be unpatentable; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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