

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETFLIX, INC.,
Petitioner,

v.

AVAGO TECHNOLOGIES INTERNATIONAL SALES PTE. LIMITED,
Patent Owner.

IPR2021-01343
Patent 8,646,014 B2

Before KRISTEN L. DROESCH, NATHAN A. ENGELS, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

ENGELS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Petitioner Netflix, Inc. filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1, 3–12, and 14–20 of U.S. Patent No. 8,646,014 B2 (Ex. 1001, “the ’014 patent”). Patent Owner Avago Technologies International Sales Pte. Limited filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). The Board issued a Decision Granting Institution. Paper 11 (“Inst. Dec.”).

After institution, Patent Owner filed a Response (Paper 18, “PO Resp.”), Petitioner filed a Reply (Paper 20), and Patent Owner filed a Sur-reply (Paper 24). Both parties presented oral arguments at a virtual hearing, and a copy of the hearing transcript is in the record. Paper 30.

Based on the complete record in this proceeding, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 3–5, 7, 9, 10, 12, 14–16, and 18–20 of the ’014 patent are unpatentable. We also determine Petitioner has not shown by a preponderance of the evidence that claims 6, 8, 11, and 17 are unpatentable.

A. *Related Matters*

The parties state that the ’014 patent is the subject of *Netflix, Inc. v. CA, Inc.*, No. 3:21-cv-03649 (N.D. Cal.) and *CA, Inc. v. Netflix, Inc.*, No. 2:21-cv-00080 (E.D. Tex.).¹ Pet. 72; Paper 5, 1.

¹ The Court of Appeals for the Federal Circuit granted Petitioner’s petition for writ of mandamus and directed the court of the Eastern District of Texas to transfer *CA, Inc. v. Netflix, Inc.*, 2:21-cv-00080 to the Northern District of California. *See In re Netflix, Inc.*, No. 2022-110, 2022 WL 167470 (Fed. Cir. Jan. 19, 2022). Neither party filed an updated mandatory notice identifying the new case number for the transferred proceeding.

B. The '014 Patent

Titled “Multistream Video Communication with Staggered Access Points,” the '014 patent describes a system and method that provide reduced latency in video signal processing systems. Ex. 1001, codes (54), (57). According to the '014 patent, latency is the time between when the user requests a particular video and when the system decodes the requested video and presents it to the user. Ex. 1001, 1:35–54. The '014 patent states that video streams have access points at which decoding can begin, such as an intra-coded frame (Ex. 1001, 4:17–32), also known as an “I-frame” (Pet. 5; Ex. 1003 ¶ 6; Ex. 1005, 1:43–59).

One way to minimize latency, according to the '014 patent, is by providing the same video information in multiple video streams, with each stream having temporally offset access points. Ex. 1001, 7:20–44. The '014 patent states that a receiver can identify the access points in each of the multiple video streams and determine which of the video streams will communicate an access point next, thus allowing the receiver to determine which video stream will provide the lowest latency. Ex. 1001, 7:20–51.

C. Illustrative Claims

Of the challenged claims, claims 1, 12, and 20 are independent claims. Claim 1, reproduced below with labels added to reflect those used in the parties' briefing, is illustrative of the challenged claims.

[1a] A method in a video receiving system for receiving video information, the method comprising:

[1b] receiving, by a receiver, a request by a user for a unit of video information;

[1c] receiving, by the receiver, a plurality of video information streams, each of which represents the requested unit of video information;

[1d] identifying, by the receiver, which of the plurality of video information streams, when processed, is expected to result in a lower latency in presenting the unit of video information; and

[1e] processing, by the receiver, the identified video information stream to present the unit of video information.

D. Grounds of Unpatentability

Petitioner asserts that claims 1, 3–12, and 14–20 would have been unpatentable on the following ground:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 3–12, 14–20	103 ²	Cooper, ³ Baldwin ⁴

As explained below in Section II.D.1, we determine that Petitioner also contends that the challenged claims would have been unpatentable as obvious over Cooper alone and/or over Baldwin alone. *Accord* Inst. Dec. 16–17; *cf.* PO Resp. 36–52 (addressing Cooper only), 53–68 (addressing Baldwin only), 68–70 (addressing Cooper-Baldwin combination).

II. ANALYSIS

A. Level of Ordinary Skill in the Art

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom*

² Based on the filing date of the applications to which the '014 patent claims priority, we apply the pre-AIA version of § 103; however, our analysis would be the same under the current version of the statute.

³ U.S. Patent No. 7,810,124 B2, issued Oct. 5, 2010 (Ex. 1004).

⁴ U.S. Patent No. 7,603,689 B2, issued Oct. 13, 2009 (Ex. 1005).

Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends a person of ordinary skill in the art at the time of the invention would have been a person with a “bachelor’s degree in electrical engineering, computer engineering, computer science, or a similar field with at least two years of experience in digital video signal processing or digital video streaming or had a master’s degree in electrical engineering, computer engineering, computer science, or a similar field with a specialization in digital video signal processing.” Pet. 15 (citing Ex. 1003 ¶¶ 37–39). Petitioner also states that a person of ordinary skill would have been able to, among other things, encode and decode digital video signals, packetize, multiplex, and demultiplex encoded digital video signals for transmission, and implement modulation and channel coding. Pet. 15–16 (citing Ex. 1003 ¶ 40).

Patent Owner states that a person of ordinary skill would have had “a bachelor’s degree in Electrical Engineering, Computer Science, or a similar discipline, with one or two years of experience in this or a related field.” PO Resp. 13 (citing Ex. 2014 ¶ 20). Patent Owner states that its definition of a person of ordinary skill is similar to Petitioner’s definition and that any differences are not material. PO Resp. 13.

We determine a person of ordinary skill would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a similar field and two years of experience in digital video signal processing or digital video streaming, which is consistent with the parties’ arguments, the ’014 patent, and the prior art of record.

B. Claim Construction

We construe claims using the principles set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc) and related cases. *See* 37 C.F.R. § 42.100(b) (2020). Under that precedent, the words of a claim are generally given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips*, 415 F.3d at 1312–13.

1. “video information”

Petitioner contends a person of ordinary skill would have understood that “video information” means “digital video data.” Pet. 16. Patent Owner disagrees with Petitioner’s proposed construction and contends “video information” should be given its plain and ordinary meaning. PO Resp. 13. Patent Owner also states that the construction of “video information” is immaterial to this proceeding. PO Resp. 13.

We do not discern a meaningful dispute between the parties regarding the meaning of “video information,” and we do not expressly interpret the term. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe only those terms that are in controversy, and only to the extent necessary to resolve the controversy.”) (internal quotation omitted).

2. “video channel”

Petitioner contends a person of ordinary skill would have understood that “video channel” means “‘video program’ or ‘the video of a transmitted program.’” Pet. 17. Petitioner further contends “video channel” is

distinguishable from a communication channel through which video information is transmitted. Pet. 18.

Patent Owner disagrees with Petitioner's proposed construction and contends "video channel" should be given its plain and ordinary meaning. PO Resp. 13. Patent Owner also states that the construction of "video channel" is immaterial to this proceeding. PO Resp. 13.

We do not discern a meaningful dispute between the parties regarding the meaning of "video channel," and we do not expressly interpret the term.

C. Summary of Prior Art References

1. Cooper

Titled "Robust Mode Staggercasting Fast Channel Change," Cooper describes "staggercasting" as transmitting a composite signal including two component content representative signals, one of which is delayed with respect to the other. Ex. 1004, 1:66–2:2, code (54). In one example, Cooper states that "the same content representative signal may be staggercasted as a packet stream carrying a high-quality video signal and as one or more packet streams carrying reduced video quality video signals." Ex. 1004, 22:29–32; *see* Ex. 1004, 6:5–49, 19:41–45. Cooper states that its method of staggercasting decreases the time between when a user requests a new content representative signal and when it begins to be decoded and displayed to the user. Ex. 1004, 2:44–51.

2. Baldwin

Titled "Fast Start-Up for Digital Video Streams," Baldwin describes technology for reducing the start-up delay of digital video streams. Ex. 1005, codes (54), (57). As part of its fast start-up system, Baldwin describes streaming the same video content on a main video stream and on

multiple alternative transmission streams called “lead-in streams” having different I-frames or “random access points” (“RAPs”). Ex. 1005, 6:28–31, Figs. 3, 4. “By sending multiple different streams, tuning time is improved because the receiver may select one of the lead-in streams to play. The one selected will typically be the one which will be ready to be presented the quickest after the time at which the user tunes.” Ex. 1005, 9:24–28.

Baldwin further states that “when the exemplary fast start-up system wishes to tune to a channel . . . , it queries the multicast server . . . in order to determine which lead-in alternative stream is the first lead-in that has not started yet, and the receiver joins . . . that alternative multicast transmission.” Ex. 1005, 9:37–42. Baldwin states that the fast start-up system then requests that a router switch the receiver back to the main stream multicast transmission just before the next RAP of the main stream. Ex. 1005, 9:43–46.

D. Ground 1: Obviousness Based on Cooper and Baldwin

The Petition includes a limitation-by-limitation comparison of Cooper and Baldwin to claims 1, 3–12, and 14–20 (Pet. 24–48), and Petitioner contends a person of ordinary skill would have been motivated to combine Cooper and Baldwin for a number of reasons (Pet. 18–23).

Patent Owner contends neither of Cooper or Baldwin teaches limitation [1d], and Patent Owner argues Petitioner failed to present an adequate rationale for combining the references’ teachings. See PO Resp. 36, 53, 65.

1. Petitioner’s Combination of Cooper and Baldwin

Petitioner argues Cooper and Baldwin teach “complimentary techniques” and that a person of ordinary skill would have been motivated to

combine “Cooper’s receiver teachings with Baldwin’s teachings of providing alternative streams with staggered access points and selecting the stream with the next available access point.” Pet. 19. According to Petitioner, “[w]hile Cooper teaches identifying which alternative stream is more readily available (e.g., which stream is not time-delayed), Baldwin teaches identifying which stream has the next available access point.” Pet. 20. Further, Petitioner proposes “[c]ombining Cooper’s receiver teachings with Baldwin’s teachings of providing alternative streams with staggered access points and selecting the stream with the next available access point,” contending that “involves combining prior art elements according to known methods to yield predictable results because both teach video receivers that receive alternative streams representing content selected by a view.” Pet. 19–20; *accord* Reply 27.

Among other problems with these arguments, it is not clear how or where Petitioner relies on the proposed combination to satisfy any specific claim limitations. Petitioner argues each of Cooper and Baldwin teaches each limitation of each independent claim, and Petitioner presents its combination of references separate from its comparisons of Cooper and Baldwin to the claims, without clearly stating how the references are to be combined or how those combined teachings satisfy particular limitations. Because Petitioner fails to identify its proposed combination with sufficient clarity, we are also not persuaded by Petitioner’s argument that a person of ordinary skill in the art would have been motivated to combine Cooper and Baldwin to yield the subject matter recited by the challenged claims.

We also disagree with Petitioner’s argument that *Realtime Data* suggests that Petitioner does not need to show a motivation to combine.

Reply 27–29 (citing *Realtime Data*, 912 F.3d at 1373–74). Unlike here, in *Realtime Data*, the secondary reference was cited for the “sole purpose” of confirming that an element was disclosed in the primary reference. *Id.* In this case, Petitioner proposes combining some teachings from each of Baldwin and Cooper. *See* Pet. 19–20; Reply 27. Accordingly, we determine Petitioner has not articulated an adequate rationale to combine the references to arrive at any particular challenged claim.

Nevertheless, the Court of Appeals for the Federal Circuit has held that a petitioner asserting a two-reference obviousness ground can satisfy the requirements of a petition under 35 U.S.C. § 312(a)(3) and maintain an *inter partes* review by presenting evidence that one of the references individually teaches each limitation of a challenged claim. *Realtime Data*, 912 F.3d at 1373. Here, as Patent Owner acknowledged in its Preliminary Response (Prelim. Resp. 41–45), Petitioner contends each of Cooper and Baldwin teaches each limitation of the independent claims, notwithstanding Petitioner labeling its challenge as a single ground based on the combination of the two references. *Accord* Inst. Dec. 16–17; *cf.* PO Resp. 68–70. As a result, below, we also address Petitioner’s showings for Cooper and Baldwin individually.

2. *Claim 1*

[1a] “A method in a video receiving system for receiving video information, the method comprising:⁵

Petitioner contends Cooper and Baldwin render this limitation obvious “because Cooper and Baldwin each teach a video receiving system (e.g.,

⁵ We need not determine whether the preamble is limiting because Petitioner has sufficiently shown that Cooper and Baldwin both teach this aspect of the

Cooper's receiver and Baldwin's client device/presentation device) for receiving video information." Pet. 24; *see* Pet. 24–25 (addressing Cooper), 26–27 (addressing Baldwin).

Patent Owner does not specifically address Petitioner's showing for the preamble. Based on the evidence of record, we determine Petitioner has shown that each of Cooper and Baldwin teach the preamble. *See, e.g.*, Ex. 1004, 5:5–62; Ex. 3:62–67.

[1b] "receiving, by a receiver, a request by a user for a unit of video information;"

Petitioner contends Cooper and Baldwin render this limitation obvious because "Cooper teaches a receiver receiving a request from a user for a new content source, and Baldwin teaches a receiver receiving a user request for a channel change from a remote control." Pet. 28; *see* Pet. 28–29 (addressing Cooper; citing Ex. 1004, 2:55–3:3, 7:23–26, 25:52–26:3), 29–31 (addressing Baldwin; citing Ex. 1005, 4:8–13, 4:38–45, 7:11–18, 8:27–34, Figs. 2–4).

Patent Owner does not specifically address Petitioner's showing for this limitation. Based on the evidence of record, we determine Petitioner has shown that each of Cooper and Baldwin teach this limitation. *See* Ex. 1004, 2:55–3:3, 7:23–26, 25:52–26:3; Ex. 1005, 4:8–13, 4:38–45, 7:11–18, 8:27–34, Figs. 2–4.

[1c] "receiving, by the receiver, a plurality of video information streams, each of which represents the requested unit of video information;"

[1d] "identifying, by the receiver, which of the plurality of video information streams, when processed, is expected to

claim. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

result in a lower latency in presenting the unit of video information; and”

Petitioner contends Cooper and Baldwin render element [1c] obvious “because Cooper teaches a receiver receiving a ‘composite’ signal that includes multiple streams and Baldwin teaches a receiver receiving multiple alternative streams.” Pet. 31. More specifically, Petitioner contends Cooper teaches a receiver that receives a composite signal of a first and a second signal multiplexed together, where the first stream may be a “normal mode stream” (e.g., high-definition version) of video content, and the second stream may be a “robust mode stream” (e.g., standard-definition version) of the same video content. Pet. 31–32 (citing Ex. 1004, 6:5–49, 16:55–17:2, 19:19–26, 19:41–55). Petitioner also contends “Baldwin renders this limitation obvious because Baldwin teaches a client that determines for itself which stream to listen to from a set of streams representing the same content.” Pet. 33 (citing Ex. 1005, 6:30–36). According to Petitioner, “Baldwin’s client device may be employed in a fast start-up system that employs a main video stream and an alternative video stream” (or multiple alternative streams) having the same content. Pet. 33 (citing Ex. 1005, 6:37–54, 7:1–4, 9:1–28, Figs. 3, 4).

Petitioner contends Cooper and Baldwin render element [1d] obvious “because Cooper teaches a receiver that identifies and decodes the undelayed video packet stream first when the viewer selects a new content signal (before switching to the delayed packet stream), and Baldwin teaches a receiver selecting a stream that is expected to be readily decoded and presented sooner.” Pet. 34–35 (citing Ex. 1004, 16:55–17:2, 17:23–60, 18:17–31, 22:50–64; Ex. 1005, 1:55–59, 6:25–36, 7:30–8:2, 9:24–28, Fig. 3).

Patent Owner argues that Cooper fails to disclose these claim limitations (PO Resp. 36–52), and also argues that Baldwin fails to disclose them (PO Resp. 53–68).

Below, we first address the parties’ arguments relating to Cooper followed by the parties’ arguments relating to Baldwin.

Cooper

Petitioner contends Cooper teaches receiving a multiplexed composite signal and decoding the first encoded signal of the composite signal until the delayed second encoded signal is available. Pet. 35 (citing Ex. 1004, 3:1–3). According to Petitioner, a person of ordinary skill would have understood that choosing to decode and present the undelayed signal first would result in a lower latency “because the undelayed signal is available for decoding and presenting before the delayed second signal is ready to begin decoding.” Pet. 35. Further, Petitioner states that “Cooper teaches a receiver decoding and presenting the undelayed video stream (e.g., a robust mode packet stream) before switching to decoding and presenting the delayed packet stream (e.g., normal mode packet stream) in order to facilitate a fast channel change.” Pet. 35. Petitioner contends Cooper teaches that the receiver identifies the undelayed packet stream by the packet identifier included in the header of each of its packets and the information in tables supplied with the packet stream. Pet. 36–37 (citing Ex. 1004, 18:17–56, 19:19–40, Fig. 8).

Patent Owner contends, and we agree, that Cooper does not teach that its receiver identifies which of two streams is expected to result in a lower latency, as required by limitation [1d]. PO Resp. 36–52. Where Cooper describes receiving a multiplexed composite signal, Cooper teaches always identifying the normal mode packet stream for decoding when it is available,

without regard to latency, and identifying the robust mode packet stream for decoding only when the normal mode packet stream is not available, such as when normal mode packets are lost. *E.g.*, Ex. 1004, 7:8–8:28. In fact, it would be inconsistent with Cooper’s teachings for the receiver to select the robust mode packet stream when the normal mode packet stream is available: Cooper teaches that “[u]nder normal conditions, the error signal is not active on the error signal line E. *In response*, the selector 230 couples the normal mode packet stream to the multi-standard decoder 240, and the multi-standard decoder 240 begins to generate the content representative signal from the normal mode packets” Ex. 1004, 7:32–37 (emphasis added).

Although Cooper also teaches that its receiver can decode the robust mode packet stream to avoid “undue delay” “at the beginning of any broadcast or channel change,” we find that Cooper does so only when the normal mode packet stream is *not* available. Ex. 1004, 17:23–45; *see also* Ex. 1004, 3:1–3. Specifically, Cooper states that “at the beginning of any broadcast *or channel change*,” there is a period of time (i.e., T_{adv}) when the receiver’s delay device 220 is being filled. Ex. 1004, 17:23–26 (emphasis added). Cooper explains that waiting until delay device 220 is full would cause “undue delay when a receiver is switched on or a channel is changed.” Ex. 1004, 17:26–30. To address this delay, Cooper’s receiver decodes the robust mode packet stream, which “is immediately available,” so that a video signal can be presented until “the normal mode packet stream becomes available,” at which point the receiver switches to decoding the normal mode packet stream. Ex. 1004, 17:30–42. Consequently, we find that Cooper teaches that, at a channel change, its receiver receives (and decodes)

the robust mode packet stream until it receives the normal mode packet stream. We disagree with Petitioner's contrary argument that Cooper's receiver receives both streams in this situation (*see* Reply 4–16), and, at a minimum, Petitioner has not persuasively shown that Cooper teaches or suggests this (*see* Ex. 2015, 82:22–85:13 (describing different scenarios but acknowledging that “Cooper doesn't really illuminate either of these”)). Further, Cooper's description of Figure 3 is consistent with our understanding of Cooper description of a channel change. Specifically, that portion of Cooper states:

Time t_0 may represent the time when the receiver is turned on, or when a user specifies a new content source to receive. During the time, T_{adv} , between t_0 and t_4 , robust mode packets “a” to “j” are loaded into the delay device 220, and normal mode packets, designated “0” through “9” are received. At time t_4 , the normal mode packet “A” becomes available from the demultiplexer 210 and delayed robust mode packet “a” becomes available from the delay device 220. Under normal conditions, . . . the selector 230 couples the normal mode packet stream to the multi-standard decoder 240, and the multi-standard decoder 240 begins to generate the content representative signal from the normal mode packets, as described above. This is illustrated by the cross hatching 301 in the normal mode packets “A” through “G”.

Ex. 1004, 7:24–39. Cooper includes this description in order to explain its typical operation as well as to illustrate the relative timing of the robust mode packet stream and the normal mode packet stream. *See* Ex. 1004, 7:24–25, 7:40–8:28. This passage teaches that normal mode packets designated with capital letters (e.g., “A”) are displayed after time t_4 under normal conditions; however, it does not address which (if any) packets are displayed between time t_0 and time t_4 . As a result, we understand this passage of Cooper to indicate that “0” to “9” are simply placeholders, which

may either be normal mode packets with data that could be displayed or represent no data.

In summary, we find that Cooper's channel-change disclosure also does not teach (or fairly suggest) a receiver receiving a plurality of video information streams and identifying which stream is expected to result in lower latency.

Accordingly, we determine that Petitioner has not established that Cooper teaches or reasonably suggests limitation [1d].

Baldwin

Petitioner argues "Baldwin teaches providing phase-staggered alternative streams and a receiver that identifies which stream has the next available access point and chooses that stream to listen to." Pet. 37 (citing Ex. 1005, 6:31–36). Further, Petitioner cites Baldwin's Figure 4 and related disclosures as teaching a plurality of streams and a receiver that determines which stream to select based on the next available RAPs or I-frames to reduce latency. Pet. 38–40 (citing Ex. 1005, 6:25–36, 7:21–8:2, Figs. 3, 4)). Among other things, Petitioner cites Baldwin's statement that "individual client devices may determine for themselves which stream to be listening to at any given point." Pet. 37 (quoting Ex. 1005, 6:31–36).

Patent Owner argues that Baldwin teaches that "the receiver receives only one alternative lead-in stream, identified and transmitted by the server, and that the main stream is not received until after the alternative lead-in stream has been decoded and is presented (and, generally, around the time the alternative lead-in stream is ending)." PO Resp. 53–54 (citing Ex. 2014 ¶ 62; Ex. 2015, 217:7–219:10, 230:1–233:14). "Thus, to the extent the client receives multiple streams, those streams are received sequentially,

with the receiver first receiving the alternative lead-in stream selected by the server and later receiving the main stream.” PO Resp. 54 (citing Ex. 2014 ¶ 62).

According to Patent Owner, in Baldwin’s fast start-up system, the transmitter identifies and transmits a stream in response to a receiver’s query and the receiver joins and receives only that single stream. PO Resp. 55–56 (citing Ex. 1005, 10:18–29, 10:61–67; Ex. 2014 ¶¶ 66–67). Further, Patent Owner argues Baldwin’s Figures 5 and 6 and related disclosures underscore that it is the receiver that queries the server for identification of a single stream and that a single multicast transmission is identified by the query with the receiver joins and receives. PO Resp. 31–35, 54–56.

Patent Owner also argues that Petitioner mischaracterizes Baldwin’s statement that individual client devices may determine for themselves which stream to be listening to at any given point. PO Resp. 58–59 (quoting Ex. 1005, 6:25–36). According to Patent Owner, that statement must be read in context, including the context of Figures 5 and 6 which provide that the client queries the server and the server identifies which alternative stream should be joined. PO Resp. 59 (citing Ex. 2014 ¶ 72).

Patent Owner similarly argues that certain statements such as Baldwin’s statement that “receiver may select one of the lead-in streams to play” are merely generalizations, and Patent Owner emphasizes Baldwin’s statement that “each [alternative transmission] is prepared for transmission, but a particular multicast stream is sent to a particular receiver only when requested by that receiver.” PO Resp. 60 (quoting Ex. 1005, 9:24–36). According to Patent Owner, the later quote teaches that to the extent a receiver might identify a particular stream, such identification would occur

before any stream is received. PO Resp. 61 (citing Ex. 2014 ¶ 74). Further, Patent Owner emphasized Baldwin’s statement that the exemplary fast start-up system “queries the multicast server . . . in order to determine which lead-in alternative stream is the first lead-in that has not started yet, and the receiver joins . . . that alternative multicast transmission.” PO Resp. 61 (quoting Ex. 1005, 9:37–46; citing Ex. 75). Finally, Patent Owner argues Baldwin discloses only one mode of operation, which is illustrated by Figures 5 and 6. PO Resp. 63–65 (citing Ex. 2014 ¶¶ 78–79, Ex. 2015, 230:1–233:14).

We find that Baldwin teaches (or at least suggests) that its receiver can concurrently receive a plurality of streams and select one of those streams to reduce latency of presentation. *See, e.g.*, Ex. 1005, 6:25–33. We find that Baldwin teaches or suggests elements [1c] and [1d].

Contrary to Patent Owner’s arguments that Baldwin only teaches transmitting one stream, Petitioner relies on explicit statements in Baldwin that “[o]ne may multicast multiple join-in streams (e.g., alternative transmissions 402–207) and a main stream at all times.” Ex. 1005, 6:25–31. Also contrary to Patent Owner’s arguments that the server selects the stream, Petitioner relies on explicit statements in Baldwin that “individual client device[s] may determine for themselves which stream to be listening to at any given point.” Ex. 1005, 6:31–33. As cited by Petitioner, Baldwin explains the benefit of sending multiple streams and allowing the client device to select a stream: “By sending multiple different streams, *tuning time is improved* because *the receiver may select* one of the lead-in streams to play. The one selected will typically be the one which will be ready to be presented the quickest after the time at which the user tunes.” Ex. 1005,

9:24–28 (emphasis added). Thus, Baldwin provides a straightforward, express disclosure of “sending multiple streams” to a receiver and allowing the receiver to select from those streams. Baldwin further states that the alternative transmissions “*need not be* sent concurrently to a particular receiver,” but by stating that the streams *do not have to be* sent concurrently, Baldwin further teaches or reasonably suggests that alternative streams can be sent concurrently to a receiver. Ex. 1005, 9:29–33 (emphasis added).

These statements are plain on their face. Patent Owner (*e.g.*, PO Resp. 30–35, 55–57; Sur-reply 23–27) and Dr. Sundaresan (Ex. 2014 ¶¶ 39–42, 62–86) emphasize other statements in Baldwin as alleged context to argue that it is the server selecting only one stream for transmission, but the facts that Baldwin might also teach that a server can select a stream and transmit only one stream does not negate the plain teachings of Baldwin. Baldwin expressly teaches sending multiple streams of the same content with staggered RAPs so that the receiver can receive the multiple streams and identify the stream that is expected to result in reduced latency.

Accordingly, based on the evidence of record, we determine Petitioner has shown that Baldwin teaches limitations [1c] and [1d].⁶

⁶ We note that at least some of Patent Owner’s arguments attempting to distinguish Baldwin are premised on an assumption that claim 1 requires element 1c to be performed and completed before element 1d, but Patent Owner does not sufficiently explain why the claim should be interpreted in this way. “Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one.” *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1342 (Fed. Cir. 2001). Here, we need not decide this issue because we determine Baldwin teaches or reasonably suggests performing the steps in Patent Owner’s proposed order.

[1e] “processing, by the receiver, the identified video information stream to present the unit of video information.”

Petitioner contends “Cooper teaches a receiver decoding and displaying video data in a packet stream and Baldwin teaches a receiver decoding and displaying video data.” Pet. 42 (citing Ex. 1004, 17:33–45, 18:57–19:3; Ex. 1005, 3:62–4:56, 11:52–64, 14:1–4; Ex. 1003 ¶¶ 102–104).

Petitioner contends a person of ordinary skill would have understood that Cooper teaches a receiver processing the identified video stream with its teachings regarding the receiver decoding and displaying video data.

Pet. 42. Petitioner also contends a person of ordinary skill would have understood that Baldwin teaches “a receiver (e.g., client device, presentation device) . . . processing (e.g., decoding) video data, such as I-frames, and presenting (e.g., displaying, rendering) the video data.” Pet. 43.

Patent Owner does not address Petitioner’s showing for this limitation. Based on the evidence of record, we determine Petitioner has shown that each of Cooper and Baldwin teach this limitation. Ex. 1004, 17:33–45, 18:57–19:3; Ex. 1005, 3:62–4:56, 11:52–64, 14:1–4.

3. Conclusion Regarding Claim 1

Based on the entire record, we determine Petitioner has established by a preponderance of the evidence that claim 1 is unpatentable as obvious in view of Baldwin alone. We determine Petitioner has not established by a preponderance of the evidence that claim 1 is unpatentable based on Cooper alone. Further, because we determine Petitioner has not articulated an adequate rationale for combining the teachings of Cooper and Baldwin to arrive at the claimed invention, we determine Petitioner has not established that claim 1 is unpatentable based on the combined teachings of Cooper and Baldwin.

4. *Claims 12 and 20*

Claim 12 is system claim reciting limitations substantially the same as the method of claim 1, and claim 20 recites a non-transitory computer readable medium having executable instructions with limitations substantially the same as method claim 1. *See* Ex. 1003 ¶¶ 106 (comparing claims 1 and 12), 115 (comparing claims 1 and 20). Petitioner states that each of Cooper and Baldwin render the limitations of claims 12 and 20 obvious for the same reasons discussed above regarding claim 1. Pet. 43–46 (additionally noting that the references’ receivers include the recited hardware module of a receiver device and processor executing instructions to perform the recited functions (citing Ex. 1004, 6:5–7:22; Ex. 1005, 3:62–67, 6:9–24, 11:9–12:15, 12:17–14:53; Ex. 1003 ¶ 110)).

Patent Owner does not separately address Petitioner’s showings for claims 12 and 20, however, we determine that the same deficiencies in Petitioner’s challenge of claim 1 as unpatentable in view of Cooper exist equally for Petitioner’s showings for claims 12 and 20. *See* PO Resp. 70–71 (noting that Petitioner relies on its arguments for claim 1 and stating claims 12 and 20 are “valid at least for the same reasons as [c]laim 1”).

Based on the evidence of record, we agree with Petitioner that the same arguments and evidence advanced for claim 1 apply equally to Petitioner’s challenge of claims 12 and 20 as unpatentable in view of Baldwin, and we determine Petitioner has established by a preponderance of the evidence that claims 12 and 20 are unpatentable as obvious in view of Baldwin alone. For the reasons explained in connection with claim 1, we determine Petitioner has not shown by a preponderance of the evidence that claims 12 and 20 would have been unpatentable in view of Cooper alone.

Further, because we determine Petitioner has not articulated an adequate rationale for combining the teachings of Cooper and Baldwin to arrive at the claimed invention, we determine Petitioner has not established that claims 12 and 20 are unpatentable based on the combined teachings of Cooper and Baldwin.

5. *Claims 3 and 14*

[3] The method of claim 1, wherein access points of a first video information stream of the plurality of video information streams temporally alternate with access points of a second video information stream of the plurality of video information streams.

[14] The system of claim 12, where access points of a first video information stream of the plurality of video information streams temporally alternate with access points of a second video information stream of the plurality of video information streams.

Petitioner contends Baldwin teaches these limitations with its disclosures of phase-staggering the transmission schedule of video streams. Pet. 47–50. In particular, Petitioner contends Baldwin teaches video streams with access points (RAPs or I-frames) that temporarily alternate because the first I-frame of the first video stream is followed by the first I-frame of the second video stream, which is then followed by a second I-frame of the first video stream. Pet. 40 (citing Ex. 1005, Fig. 4; Ex. 1003 ¶ 126).

Patent Owner does not separately address Petitioner’s showing for claims 3 and 14. See PO Resp. 71 (arguing for validity “by virtue of their dependence”).

Based on the evidence of record, we agree with Petitioner that Baldwin’s teachings of phase-staggered access points teach the additional limitations of claims 3 and 14, and we determine Petitioner has established

by a preponderance of the evidence that claims 3 and 14 are unpatentable as obvious in view of Baldwin alone.

6. *Claims 4 and 15*

[4] The method of claim 1, wherein each of the plurality of video information streams corresponds to a same video channel, and each of the plurality of video information streams is encoded at a different quality level.

[15] The system of claim 12, where each of the plurality of video information streams corresponds to a same video channel, and each of the plurality of video information streams is encoded at a different quality level.

Petitioner contends Cooper teaches these limitations with its normal mode stream and its robust stream that include the same video information and have different video qualities, high definition and standard definition. Pet. 50–51 (citing Ex. 1004, 16:55–17:2, 19:41–55, 21:10–29, 22:28–32; Ex. 1003 ¶¶ 131–132). Petitioner contends that Baldwin teaches alternative streams of the same video content encoded at different bitrates, with the lower bitrate streams presenting lower quality. Pet. 51–52 (citing Ex. 1005, 6:37–55; Ex. 1003 ¶ 133).

Patent Owner does not separately address Petitioner’s showing for claims 4 and 15, but because we determine Petitioner has not shown that independent claims 1 and 12 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin, Petitioner has not shown that dependent claims 4 and 15 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin. *See* PO Resp. 71 (arguing for validity “by virtue of their dependence”).

Based on the evidence of record, we agree with Petitioner that Baldwin’s teachings of streams of the same content encoded at different

quality levels teach the additional limitations of claims 4 and 15, and we determine Petitioner has established by a preponderance of the evidence that claims 4 and 15 are unpatentable as obvious in view of Baldwin alone.

7. Claims 5 and 16

[5] The method of claim 1, wherein the request for a unit of video information comprises a channel change request.

[16] The system of claim 12, where the request for a unit of video information comprises a channel change request.

Petitioner contends that Cooper teaches requesting a television program and that a person of ordinary skill would have understood that Cooper's request for a television program would have entailed a request for a television channel such that a television channel change request would have been obvious based on Cooper's teachings. Pet. 52–53 (citing Ex. 1004, 25:52–26:3; Ex. 1003 ¶ 137). Petitioner also contends Baldwin teaches turning a channel in a video streaming environment in response to a user's request for the channel such that a channel change request would have been obvious based on Baldwin's teachings. Pet. 53–54 (citing Ex. 1005, 3:62–67; Ex. 1003 ¶ 138).

Patent Owner does not separately address Petitioner's showing for claims 5 and 16, but because we determine Petitioner has not shown that independent claims 1 and 12 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin, Petitioner has not shown that dependent claims 5 and 16 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin. *See* PO Resp. 71 (arguing for validity “by virtue of their dependence”).

Based on the evidence of record, we agree with Petitioner that a channel change request would have been obvious in view of the teachings of

Baldwin as required by the additional limitations of claims 5 and 16, and we determine Petitioner has established by a preponderance of the evidence that claims 5 and 16 are unpatentable as obvious in view of Baldwin alone.

8. *Claims 6 and 17*

[6] The method of claim 1, wherein receiving a plurality of video information streams comprises receiving the plurality of video information streams simultaneously over a single multi-stream channel.

[17] The system of claim 12, wherein the at least one hardware module is operable to receive a plurality of video information streams by, at least in part, operating to receive the plurality of video information streams simultaneously over a single multi-stream channel.

Petitioner contends that Cooper teaches these limitations with its disclosures of multiplexing a normal mode stream and a robust mode stream together into a composite signal. Pet. 55. According to Petitioner, a person of ordinary skill would have understood that transmitting a multiplexed composite signal would have been done through a single communication channel. Pet. 55–57 (citing Ex. 1004, 5:5–66; Ex. 1003 ¶¶ 139–143).

Patent Owner does not separately address Petitioner’s showing for claims 6 and 17, but because we determine Petitioner has not shown that independent claims 1 and 12 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin, Petitioner has not shown that dependent claims 6 and 17 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin. See PO Resp. 71 (arguing for validity “by virtue of their dependence”).

Thus, we determine Petitioner has not established by a preponderance of the evidence that claims 6 and 17 are unpatentable.

9. *Claims 7 and 18*

[7] The method of claim 1, further comprising receiving information of access point timing for at least one of the plurality of video information streams, and wherein identifying which of the plurality of video information streams is expected to result in the lower latency comprises analyzing the received information of access point timing to determine which of the plurality of video information streams is expected to communicate a next access point.

[18] The system of claim 12, wherein the at least one hardware module is operable to receive information of access point timing for at least one of the plurality of video information streams, and wherein the at least one hardware module is operable to identify which of the plurality of video information streams is expected to result in the lower latency by, at least in part, operating to analyze the received information of access point timing to determine which of the plurality of video information streams is expected to communicate a next access point.

Petitioner contends Cooper teaches these limitations with its teachings of identifying a packet stream with a packet identifier and data tables that include the time delay of different streams. Pet. 59–60 (citing Ex. 1004, 18:17–19:3, Fig. 8; Ex. 1003 ¶ 147). Petitioner also contends Baldwin teaches these limitations with its teachings of determining the alternative stream with the next available access point (RAP or I-frame). Pet. 60–62 (citing Ex. 1005, 6:31–33, 9:6–14, 9:37–46, 10:18–24; Ex. 1003 ¶¶ 148–149).

Patent Owner does not separately address Petitioner’s showing for claims 7 and 18, but because we determine Petitioner has not shown that independent claims 1 and 12 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin, Petitioner has not

shown that dependent claims 7 and 18 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin. *See* PO Resp. 71 (arguing for validity “by virtue of their dependence”).

Based on the evidence of record, we agree with Petitioner that Baldwin’s teachings regarding determining access points teach the additional limitations of claims 7 and 18, and we determine Petitioner has established by a preponderance of the evidence that claims 7 and 18 are unpatentable as obvious in view of Baldwin alone.

10. Claim 8

[8] The method of claim 7, wherein the information of access point timing comprises information indicating expected time of access point arrival.

Petitioner contends Cooper teaches this limitation with its teachings of a delay introduced into a normal mode stream and a corresponding robust mode stream, such as Cooper’s example of a time delay between 0.5 seconds and several seconds. Pet. 62–63 (citing Ex. 4:48–5:4, 9:6–14, 18:17–19:3; Ex. 1003 ¶¶ 150–153). According to Petitioner, a person of ordinary skill would have understood that the time delay introduced into a normal mode packet stream teaches information indicating the expected time of access point arrival. Pet. 63.

Patent Owner does not separately address Petitioner’s showing for claim 8, but because we determine Petitioner has not shown that claim 1 is unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin, Petitioner has not shown that dependent claim 8 is unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin. *See* PO Resp. 71 (arguing for validity “by virtue of their dependence”).

Thus, we determine Petitioner has not established by a preponderance of the evidence that claim 8 is unpatentable.

11. Claim 9

[9] The method of claim 7, wherein the information of access point timing comprises information indicating which of at least a first video information stream and a second video information stream is expected to provide the next access point.

Petitioner contends Baldwin teaches this limitation with its teachings of determining which stream has the next available access point (RAP or I-frame). Pet. 64–66 (citing Ex. 1005, 6:31–33, 9:37–46, 10:18–24; Ex. 1003 ¶¶ 154–157).

Patent Owner does not separately address Petitioner’s showing for claim 9. See PO Resp. 71 (arguing for validity “by virtue of their dependence”).

Based on the evidence of record, we agree with Petitioner that Baldwin’s teachings regarding determining the next available access point teach the additional limitations of claim 9, and we determine Petitioner has established by a preponderance of the evidence that claim 9 is unpatentable as obvious in view of Baldwin alone.

12. Claims 10 and 19

[10] The method of claim 1, wherein identifying which of the plurality of video information streams is expected to result in the lower latency comprises analyzing at least one of the plurality of video information streams to determine access point timing.

[19] The system of claim 12, wherein the at least one hardware module is operable to identify which of the plurality of video information streams is expected to result in the lower latency by, at least in part, operating to analyze at least one of the

plurality of video information streams to determine access point timing.

Petitioner contends Cooper teaches these limitations with its teachings of timing delay offset information indicating the delay introduced between a normal mode stream and a robust mode stream. Pet. 68–69 (citing Ex. 1004, 18:49–56; Ex. 1003 ¶ 163). Petitioner also contends Baldwin teaches these limitations with its teachings of determining with stream has the next available access point. Pet. 67–68 (Ex. 1005, 6:31–33, 9:37–46, 10:18–24; Ex. 1003 ¶ 161).

Patent Owner does not separately address Petitioner’s showing for claims 10 and 19, but because we determine Petitioner has not shown that independent claims 1 and 12 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin, Petitioner has not shown that dependent claims 10 and 19 are unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin. *See* PO Resp. 71 (arguing for validity “by virtue of their dependence”).

Based on the evidence of record, we agree with Petitioner that Baldwin’s teachings regarding determining access point timing teach the additional limitations of claims 10 and 19, and we determine Petitioner has established by a preponderance of the evidence that claims 10 and 19 are unpatentable as obvious in view of Baldwin alone.

13. Claim 11

[11] The method of claim 1, further comprising processing a second of the plurality of video information streams to present the unit of video information.

Petitioner contends Cooper teaches this limitation with its teachings of processing a normal mode stream and a robust mode stream having the same

video content. Pet. 70 (citing Ex. 1004, 2:54–3:3, 16:27–37, 17:61–18:16, 19:19–27, 19:41–55, 22:28–42; Ex. 1003 ¶¶ 164–166).

Patent Owner does not separately address Petitioner’s showing for claim 11, but because we determine Petitioner has not shown that claim 1 is unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin, Petitioner has not shown that dependent claim 11 is unpatentable in view of Cooper alone or based on the combined teachings of Cooper and Baldwin. *See* PO Resp. 71 (arguing for validity “by virtue of their dependence”).

Thus, we determine Petitioner has not established by a preponderance of the evidence that claim 11 is unpatentable.

III. CONCLUSION⁷

For the reasons set forth above, based on the complete record, we determine that Petitioner has proven by a preponderance of the evidence that claims 1, 3–5, 7, 9, 10, 12, 14–16, 18–20 of the ’014 patent are unpatentable, and Petitioner has not proven by a preponderance of the evidence that claims 6, 8, 11, and 17 of the ’014 patent are unpatentable.

In summary:

⁷ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*, 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 4–8, 10–12, 15–20	103	Cooper ⁸		1, 4–8, 10–12, 15–20
1, 3–5, 7, 9, 10, 12, 14–16, 18–20	103	Baldwin	1, 3–5, 7, 9, 10, 12, 14–16, 18–20	
1, 3–12, 14–20	103	Cooper, Baldwin		1, 3–12, 14–20
Overall Outcome			1, 3–5, 7, 9, 10, 12, 14–16, 18–20	6, 8, 11, 17

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner has shown by a preponderance of the evidence that claims 1, 3–5, 7, 9, 10, 12, 14–16, and 18–20 of the '014 patent are unpatentable;

FURTHER ORDERED that Petitioner has not shown that claims 6, 8, 11, and 17 of the '014 patent are 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.

⁸ Petitioner styles its challenge as obviousness based on the combination of Cooper and Baldwin, but we determine Petitioner's challenge substantively asserts Cooper and Baldwin individually. *See supra* §§ I.D, II.D.1.

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FOR PETITIONER:

Harper Batts
Chris Ponder
Jeffrey Liang
SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
hbatts@sheppardmullin.com
cponder@sheppardmullin.com
jliang@sheppardmullin.com

FOR PATENT OWNER:

Daniel Young
ADSERO IP LLC d/b/a SWANSON & BRATSCHUN LLC
dyoung@adseroip.com

Chad King
KING IAM LLC
chad@king-iam.com