

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TIKTOK INC.,  
Petitioner,

v.

NTECH PROPERTIES, INC.,  
Patent Owner.

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IPR2024-01340  
Patent 8,145,704 B2

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Before KEN B. BARRETT, TERRENCE W. MCMILLIN, and  
SCOTT RAEVSKY, *Administrative Patent Judges*.

RAEVSKY, *Administrative Patent Judge*.

DECISION  
Granting Institution of *Inter Partes* Review  
35 U.S.C. § 314

## I. INTRODUCTION

Petitioner, TikTok Inc., filed a Petition requesting an *inter partes* review challenging claims 1–24 of U.S. Patent No. 8,145,704 B2 (Ex. 1001, “the ’704 patent”). Paper 2 (“Pet.”). Patent Owner, NTECH Properties, Inc., filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

Based on our review of the preliminary record, Petitioner has demonstrated a reasonable likelihood of prevailing on at least one challenged claim. *See* 35 U.S.C. § 314(a). Accordingly, we institute an *inter partes* review on all challenged claims and all grounds asserted in the Petition. 37 C.F.R. § 42.108(a). However, Patent Owner calls into question some of Petitioner’s challenges.

## II. BACKGROUND

### A. The ’704 patent

The ’704 patent generally relates to providing media programming. Ex. 1001, 1:13–14. Figure 1, reproduced below, depicts a system for providing media programming:

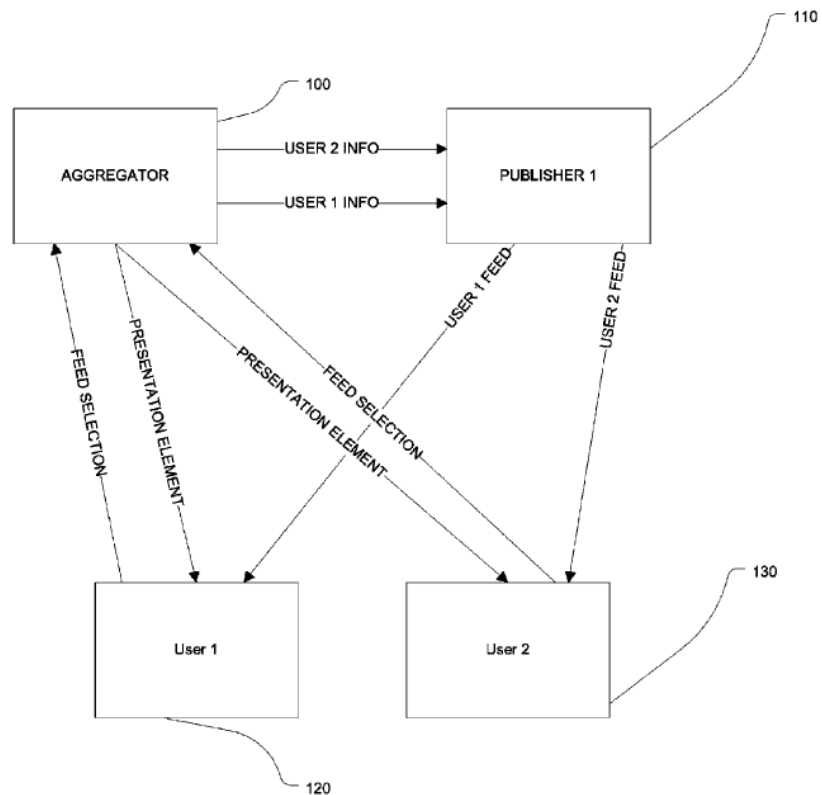


**Fig. 1**

*Id.* at 2:44–3:34. In Figure 1, aggregator 100 (which may be a web server) provides a presentation element, including one or more feeds, to user 1 and user 2. *Id.* at 2:45–52, 3:16–17. The users each provide a selection of a feed to aggregator 100. *Id.* at 2:53–54. Aggregator 100 provides information relating to each user to publisher 110. *Id.* at 2:54–55. Based on the selected feed and the user information, publisher 110 provides individual feeds to the users. *Id.* at 2:55–57.

Figure 5 below depicts an example display 500 showing a presentation element generated by an aggregator:

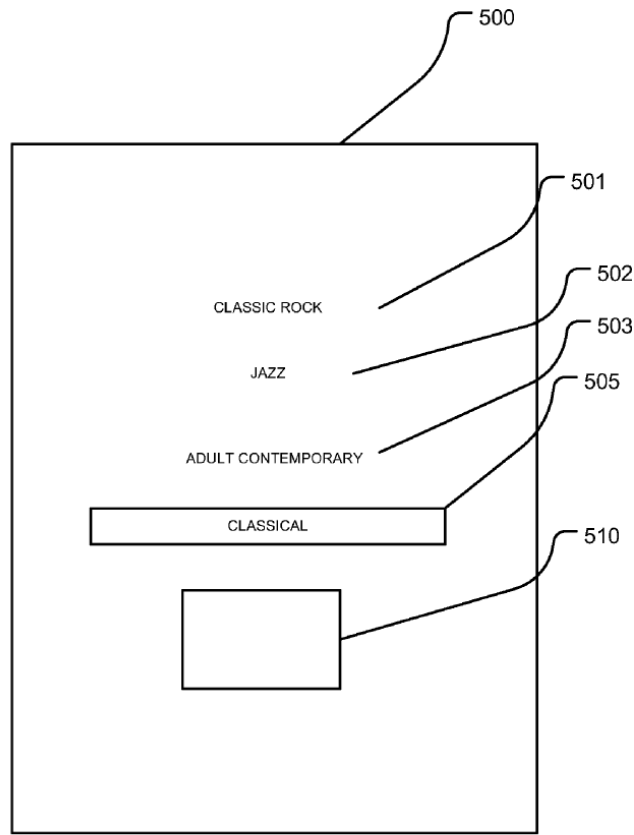


**Fig. 5**

*Id.* at 5:63–64. In display 500 of Figure 5, music feeds 501–503, 505 are available, and “classical” feed 505 has been highlighted in response to user selection. *Id.* at 5:64–66.

**B. Challenged Claims**

Claim 19 is illustrative of the challenged claims:<sup>1</sup>

19. A system for providing media programming,  
comprising:

[a][i] an aggregator having a memory and a processor,  
the processor adapted for

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<sup>1</sup> We use a similar numbering and paragraph style as the Petition. *See* Pet. 5–6 (Note that after page 7, the Petition starts over at page 1.).

[a][ii] presenting a plurality of media streams to a user,

[a][iii] receiving a signal having data indicative of a selection of one of the media streams, and

[a][iv] providing an output signal including data indicative of the selection and of user data; and

[b][i] a publisher having a memory and a processor, the publisher processor adapted to

[b][ii] receive the output signal from the aggregator, and,

[b][iii] responsive to the data indicative of the selection and of user data, access from the memory at least one algorithm for selection and sequencing of media elements,

[b][iv] select a temporal sequence of media programming comprising the selected media stream and other media elements based on an output of the algorithm using the selection and the user data,

[b][v] assemble the selected media stream and the other media elements in the temporal sequence, and

[b][vi] provide media programming to the user including the assembled media stream and other media elements in the temporal sequence.

Ex. 1001, 15:49–16:16; Pet. 5–6.

### *C. Asserted Challenges to Patentability*

Petitioner asserts the following challenges to patentability (Pet. 3–4):

| <b>Claim(s) Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>           |
|----------------------------|--------------------|-------------------------------------|
| 1–24                       | 103                | Whitehead <sup>2</sup>              |
| 1–24                       | 103                | Whitehead, Marcus '904 <sup>3</sup> |

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<sup>2</sup> US Pat. No. 8,555,318 B2, issued Oct. 8, 2013 (Ex. 1003).

<sup>3</sup> US Pub. No. 2006/0015904 A1, published Jan. 19, 2006 (Ex. 1005).

| Claim(s) Challenged | 35 U.S.C. § | Reference(s)/Basis                   |
|---------------------|-------------|--------------------------------------|
| 1–24                | 103         | Cristofalo, <sup>4</sup> Marcus '904 |

To support these challenges, Petitioner relies on the declaration of Dr. Kevin Almeroth (Ex. 1002). Patent Owner relies on the competing declaration of Dr. Michael T. Goodrich (Ex. 2001).

#### IV. ANALYSIS<sup>5</sup>

##### *A. Level of Ordinary Skill in the Art*

Relying on the testimony of Dr. Almeroth, Petitioner argues the following:

[a] person of ordinary skill in the art at the time of the '704 patent ("POSITA") had at least a Bachelor of Science in electrical engineering, computer engineering, or similar fields and at least two years of practical experience in the field of media processing and/or transmission. More education can supplement for less practical experience, and vice versa.

Pet. 8 (citing Ex. 1002 ¶¶ 48–50).

Patent Owner offers a very similar assessment of the level of skill in the art as Petitioner, arguing the following:

[a] person of ordinary skill in the art ("POSITA") at the relevant time period between 2006 and 2007 would be one having a bachelor's degree in computer science, computer engineering, or an equivalent, or two years of professional experience in the field of distributed computing. More education can supplement for less professional experience, and vice versa.

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<sup>4</sup> US Pub. No. 2002/0152117 A1, issued Oct. 17, 2002 (Ex. 1004).

<sup>5</sup> This decision omits overviews of legal standards for obviousness and claim construction. These standards are repeated in many other Board decisions.

Prelim. Resp. 6 (citing Ex. 2001 ¶ 17).

The parties' definitions are similar, although we observe that Patent Owner proposes that the person of ordinary skill would have a bachelor's degree *or* professional experience, whereas Petitioner proposes that such a person would have both a degree and experience. *See also* Ex. 2001 ¶ 17 (Patent Owner's declarant, Dr. Goodrich, stating that "I note that my definition of a POSITA is similar to that of Dr. Almeroth.").

We adopt Petitioner's assessment at this stage. Petitioner's assessment is supported by the testimony of Dr. Almeroth and is consistent with the '704 patent and the asserted prior art. However, our obviousness analysis would have been the same under either party's assessment. *See id.* ("My opinions in this declaration would not change were I to adopt the definition of a POSITA offered by Dr. Almeroth.").

### *B. Claim Construction*

Petitioner asserts that "[n]o express constructions are required." Pet. 8.<sup>6</sup> Patent Owner proposes that we expressly construe "media stream." Prelim. Resp. 8.<sup>7</sup>

Each of independent claims 1, 19, and 23 references "media streams." Patent Owner argues that "media stream" should be construed to mean "a

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<sup>6</sup> Petitioner also raises at least one claim construction issue in its merits arguments, which we address below. *See, e.g.*, Pet. 23–24 (construing "output signal" in claim 19). We encourage the parties to raise all claim construction issues in sections of their briefs devoted to that purpose during trial. Claim construction arguments buried in merits arguments tend to be conclusory and unpersuasive.

<sup>7</sup> Patent Owner also raises at least one claim construction issue in its merits arguments, which we also address below. *See* Prelim. Resp. 15 (addressing order of steps recited in claim 1).

concatenated set of media elements.” Prelim. Resp. 8 (emphasis omitted). At this stage, we disagree.

Patent Owner argues that we should look to one of the inventor’s earlier patents to construe media stream. *Id.* The ’704 patent refers to, and incorporates by reference, U.S. Patent No. 6,032,156, which Patent Owner refers to as “Marcus156.” *Id.*; Ex. 1001, 5:44–47, 1:19–20. Patent Owner explains that “Marcus156 provides exemplary methods of generating a media stream,” describes a system capable of “creat[ing] a concatenated stream of audiovisual programming,” and describes a “library” that stores media elements that “are concatenated together to generate what the ’704 Patent refers to as a media stream.” *Id.* at 8–9 (citing Ex. 1008, *passim*).

On this record, we find Patent Owner’s references to Marcus156’s “exemplary methods” and systems to be non-limiting. Our reviewing court “has repeatedly cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346–47 (Fed. Cir. 2015) (internal quotation omitted). “Absent disclaimer or lexicography, the plain meaning of the claim controls.” *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1369 (Fed. Cir. 2012). Patent Owner points us to no disclaimer or lexicography in the specification, including in Marcus156.

Patent Owner further argues that its proposed construction is consistent with language in claims 1 and 22. Prelim. Resp. 9. Patent Owner states, “[m]edia programming ‘comprising concatenated elements of the plurality of media streams’ (Claim 1) and ‘a first media stream having content from concatenated elements of at least second and third media streams’ (Claim 22) would not be possible if the plurality of media streams were not,

themselves, concatenated sets of media elements.” *Id.* Patent Owner’s conclusion does not follow. Claim 1 recites that “*media programming* compris[es] concatenated elements of the plurality of media streams,” not that *media streams* have concatenated sets of media elements. And claim 22 is a dependent claim. Normally, “limitations stated in dependent claims are not to be read into the independent claim from which they depend.” *Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971–72 (Fed. Cir. 1999) (citation omitted).

For these reasons, we find Patent Owner’s proposed construction unpersuasive at this stage and apply the plain and ordinary meaning of “media stream.” No other terms require construction at this stage.

Patent Owner also requests a pre-institution *Markman* hearing. Prelim. Resp. 10 (citing 37 C.F.R. § 42.5). Our rules do not provide for pre-institution *Markman* hearings, and Patent Owner provides no compelling reason why we should hold such a hearing now. An oral hearing may be held during trial if requested by the parties, as provided for in the accompanying Scheduling Order. At that hearing, Patent Owner may discuss any claim constructions it appropriately raises in its trial briefing.

### *C. Alleged Obviousness over Whitehead*<sup>8</sup>

Petitioner contends that claims 1–24 are unpatentable as obvious over Whitehead.<sup>9</sup> *See* Pet. 9–51. At this stage, Petitioner has shown a reasonable

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<sup>8</sup> We remove text coloring and bold highlighting when quoting the Petition without noting “emphasis omitted” throughout.

<sup>9</sup> Instead of providing an overview of Whitehead here, we describe Whitehead below in the context of the parties’ arguments.

likelihood that independent claims 1 and 23 would have been unpatentable. However, we have concerns with Petitioner's showing for claim 19.

Following the order in which claims are discussed in the Petition, we begin our analysis with claim 19.<sup>10</sup> We first address limitations 19[a][iii] and 19[b][v], which Patent Owner argues together. Prelim. Resp. 17–22. At this stage, Petitioner's arguments on these limitations are sufficient for institution. In the next section, we address limitation 19[a][iv], for which we have concerns regarding Petitioner's positions. Finally, we address the remaining limitations in a later section.

1. *Independent Claim 19*

- a. *19[a][iii] an aggregator . . . receiving a signal having data indicative of a selection of one of the media streams; and  
19[b][v] assemble the selected media stream and the other media elements in the temporal sequence*

For these limitations, Petitioner generally relies on Figure 1 of Whitehead, which Petitioner annotates as follows:

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<sup>10</sup> In contrast, the Preliminary Response first argues claim 1. Prelim. Resp. 11. Although we generally prefer briefs to follow claim order, it would assist the Board if the trial briefing follows the same order as the Petition.

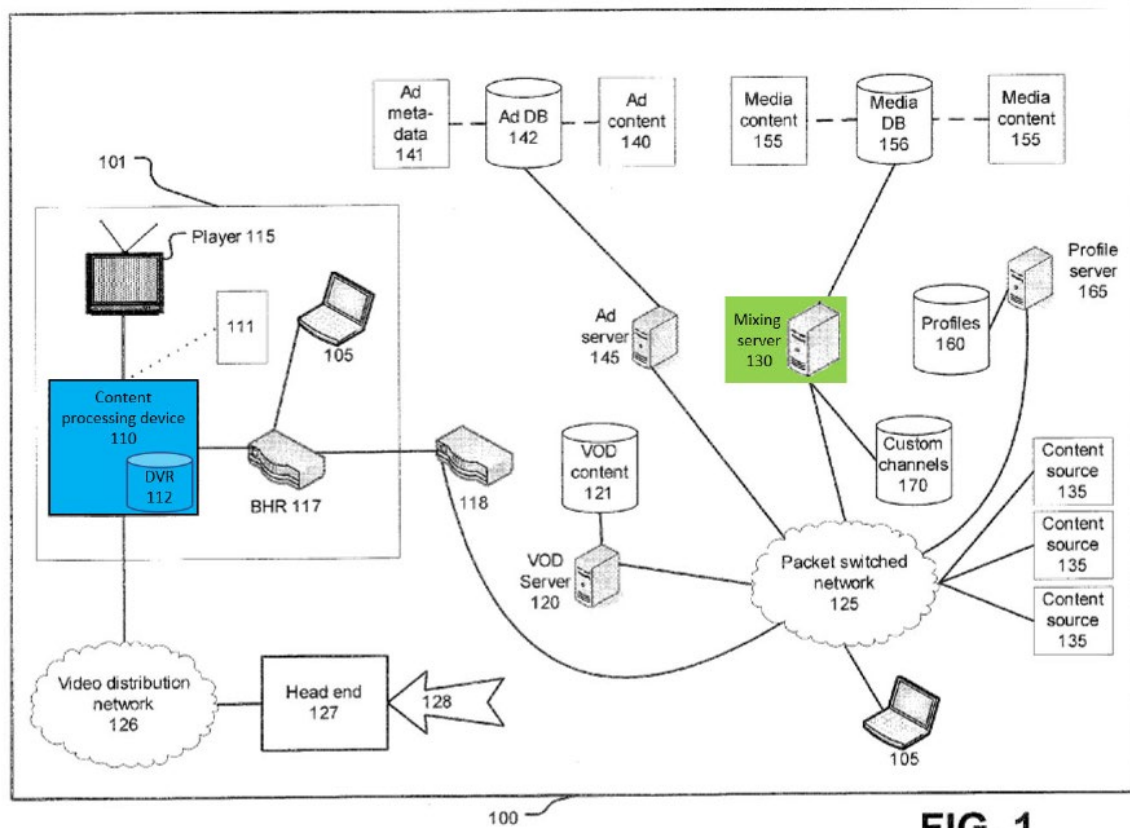


**FIG. 1**

Pet. 10 (discussing limitation 19[a][i]). Whitehead Figure 1 depicts an example system for delivering video. Ex. 1003, 1:53–54. In Figure 1, Petitioner highlights content processing device 110 in blue, arguing that it is the claimed aggregator. Pet. 9. Petitioner also highlights mixing server 130 in green, which Petitioner argues is the claimed publisher.<sup>11</sup> *Id.*

Petitioner presents two mappings for the claimed “media streams”: the streams are either (1) custom media channels 170 made available by mixing

<sup>11</sup> Whitehead explains that “[c]ontent processing device 110 provides video or other multimedia to a user on a media player 115,” which may be a TV. Ex. 1003, 2:9–11, 52. Content processing device 110 may be a set top box. *Id.* at 2:11–12. Mixing server 130 assembles and delivers custom media channels 170 to content processing device 110. *Id.* at 4:27–30.

server 130 to content processing device 110 (“Media Stream Mapping 1”), or (2) media content transmitted by content sources 135 to mixing server 130 (“Media Stream Mapping 2”). *Id.* at 11 (citing Ex. 1002 ¶¶ 76–77; Ex. 1003, *passim*).

For limitation 19[a][iii], “*an aggregator . . . receiving a signal having data indicative of a selection of one of the media streams*,” Petitioner asserts that content processing device 110 (“aggregator”) receives a user selection of a custom media channel 170 (Media Stream Mapping 1) and selection of the content source 135 corresponding to that channel (Media Stream Mapping 2). *Id.* at 15 (citing, e.g., Ex. 1003, 4:45–52; Ex. 1002 ¶ 85).

For limitation 19[b][v], “*assemble the selected media stream and the other media elements in the temporal sequence*,” Petitioner asserts that Whitehead’s mixing server 130 (“publisher”) assembles the content and advertisements (“other media elements”) according to a playlist (“temporal sequence”). *Id.* at 29 (citing, e.g., Ex. 1003, 4:10–26; Ex. 1002 ¶ 104).

At this stage, after considering Patent Owner’s arguments, which we address below, we determine that Petitioner has sufficiently shown that Whitehead discloses limitations 19[a][iii] and 19[b][v].

Patent Owner raises several arguments. Prelim. Resp. 17–22. These include, for example, that Whitehead does not disclose “combining an existing channel with ‘other media elements,’” that Whitehead’s menu item “does not represent a media feed that comprises a plurality of media elements,” and that a user’s selection of a menu item does not cause the system to “initiat[e] . . . individualized customized media programming.” *Id.* at 17–20.

These arguments, along with other arguments Patent Owner raises that we do not highlight here (*see id.*), all suffer from the same problem: they are not commensurate with the scope of the claims. *See In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998) (“[The] proffered facts . . . are not commensurate with the claim scope and are therefore unpersuasive. . . . [T]he name of the game is the claim.”). For example, claim 19 does not recite combining an “existing” channel with other media elements, nor does it recite initiating individualized customized media programming. To the extent Patent Owner implies claim construction positions, Patent Owner should make these constructions explicit during trial in a section of its briefing designated for that purpose.<sup>12</sup>

Addressing Petitioner’s Media Stream Mapping 2, Patent Owner next argues that “even if content sources 135 provide ‘media streams’ to the mixing server, there is no sense in which the user’s selection of a custom media channel selects a content source’s ‘media stream.’” Prelim. Resp. 20–21. Rather, Patent Owner argues, the user selects a channel, which causes real-time generation of the channel (not selection of a media stream comprising a “concatenated set of media elements”). *Id.* at 21. This argument relies on a claim construction for “media stream” that we have not adopted and is therefore unpersuasive at this stage.

Patent Owner further contends that Petitioner’s Media Stream Mapping 2 fails because “the content chosen for any custom media channel is unrelated to the user’s *selection* of a media stream.” *Id.* That is, the user’s channel selection does not select any particular content source 135,

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<sup>12</sup> We emphasize that claim construction positions buried among merits arguments tend to be insufficiently developed and unpersuasive.

the alleged “media feed.” *Id.* Patent Owner asserts that “each custom media channel 170 is created based on a different profile 160.” *Id.* (citing Pet. 13; Ex. 1003, 12:22–55). Patent Owner then urges that claim 19 expressly differentiates the user’s “selection” of a media stream from “user data” and argues that “data stored in profile 160 is (at best) user data.” *Id.* So, Patent Owner contends, “Petitioner’s argument that a user ‘selects’ a media stream based on information stored in the user’s profile” does not satisfy claim 19. *Id.* at 22.

At this stage, we disagree. First, there is no “media feed” recited in claim 19.<sup>13</sup> Further, Petitioner argues, and we agree at this stage, that each custom media channel in Whitehead is created based on a different profile, which “identi[fies] . . . one or more content sources 135 of interest.” Pet. 13 (citing, e.g., Ex. 1003, 5:56–6:9 (emphasis omitted)). Patent Owner’s argument does not undermine Petitioner’s showing at this stage because Patent Owner does not adequately explain how claim 19 “expressly differentiate[s] the user’s ‘selection’ of a media stream presented by an aggregator from ‘user data.’” *See* Prelim. Resp. 21. Claim 19 refers to “selection of one of the media streams, and providing an output signal including data indicative of the selection and of user data.” However, the mere recitation of the “selection and of user data” does not, at this stage, appear to require that media stream selection be *not* based on user data. During trial, Patent Owner should explain its claim construction position if it wishes to pursue this argument further.

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<sup>13</sup> By referring to “media feeds,” Patent Owner may be referring to other claims in the family of patents concurrently challenged by Petitioner.

We therefore determine, on this preliminary record, that Petitioner adequately asserts that Whitehead discloses these disputed limitations.

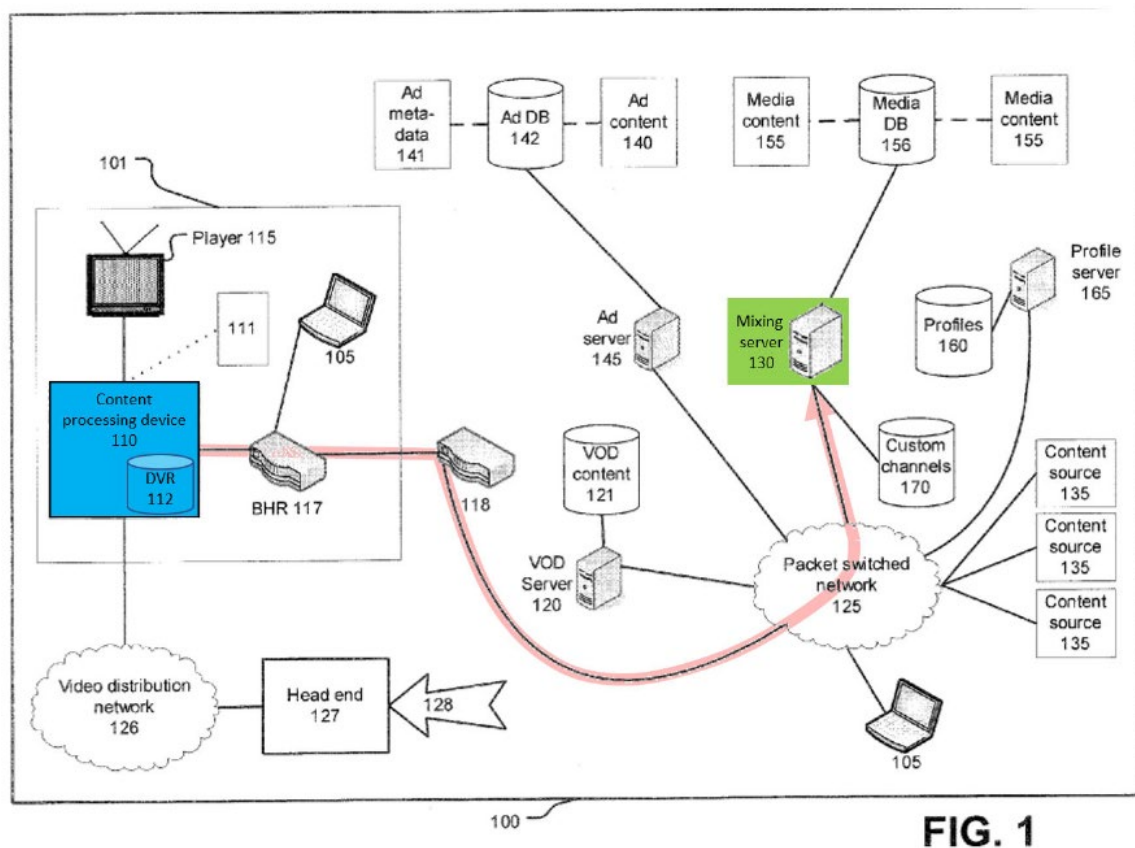
*b. 19[a][iv] providing an output signal including data indicative of the selection and of user data*

We now turn to the parties' arguments addressing limitation 19[a][iv]. In general, Petitioner argues that the "output signal" in Whitehead could be (1) a request sent from content processing device 110 directly to mixing server 130 ("Output Signal Mapping 1"), (2) data sent by content processing device 110 to profile server 165, and then from profile server 165 to mixing server 130 ("Output Signal Mapping 2"), or (3) a combination of these two mappings. Pet. 15–16 (citing Ex. 1002 ¶ 86). Patent Owner disputes each of these mappings. Prelim. Resp. 23–34.

At this stage, we have concerns about Petitioner's arguments.

*(1) Output Signal Mapping 1*

Petitioner's first mapping is that the "output signal" in Whitehead could be a request sent from content processing device 110 directly to mixing server 130. Pet. 15. Petitioner illustrates this mapping with the following annotated version of Whitehead Figure 1:



*Id.* at 16. As can be seen in Figure 1, Petitioner has highlighted a communications path (pink) between content processing device 110 (blue) and mixing server 130 (green). *Id.* at 16. Petitioner argues that a request from content processing device 110 is the output signal, which necessarily identifies (or obviously includes) the selected custom media channel and thus includes “data indicative of the selection,” as claimed. *Id.* at 16–17 (citing, e.g., Ex. 1003, 3:40–51, 9:30–58, 11:40–12:17; Ex. 1002 ¶¶ 87–88).

Petitioner also contends that it would have been obvious for the request from content processing device 110 to include “data indicative . . . of user data” as claimed. *Id.* at 18. Petitioner asserts several reasons, including that including user data such as “subject matter categories of interest to the user” would speed up processing, or including user data such as a

“username” would help to quickly retrieve a user profile, or including user data such as a user’s “geographic location” for targeted advertisements would improve convenience and accuracy. *Id.* at 18–19 (citing, e.g., Ex. 1002 ¶ 89).

Patent Owner attacks Petitioner’s “*post-hoc* rationalization for its proposed modification,” namely “more efficient processing or ‘simplifying processing and communications.’” Prelim. Resp. 26 (citing Pet. 18–19).<sup>14</sup> Patent Owner asserts, in part, that Whitehead’s design already permits the “real time or near-real time” assembly of a custom media channel, so “it would be superfluous to include the same information again in the custom channel request.” *Id.* at 27–28 (citing, e.g., Ex. 1003, 4:40–44, 8:45–51, 11:45–49). At this stage, we tend to agree with Patent Owner. Petitioner acknowledges that “[m]ixing server 130 creates custom media channel 170 *in real time or near real-time*” yet asserts a POSITA would have modified Whitehead to speed up this process. *See* Pet. 18. If Whitehead already processes in real time or near real time, it is unclear why a skilled artisan would have sped up that process. Thus, Petitioner’s rationale does appear to be superfluous and hindsight-based at this stage.

Petitioner further contends that an obvious design option would be to include profile server 165 as part of content processing device 110 so that the request for custom media channel 170 (“output signal”) would include the user’s complete profile 160. *Id.* at 19. This arrangement would simplify

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<sup>14</sup> Patent Owner also relies on *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1361–62 (Fed. Cir. 2016), but this case is inapposite because Petitioner does not rely on common sense for its proposed modification. *See* Prelim. Resp. 25–26. Many patent owners apply *Arendi* too broadly, and such arguments are rarely persuasive.

processing and communications, Petitioner argues. *Id.* (citing, e.g., Ex. 1009 ¶ 90). As before, Petitioner’s proposal to simplify processing and communications appears superfluous at this stage in view of Whitehead’s real-time or near real-time communications. But this proposal also has another possible defect. Patent Owner argues, “for security reasons alone, profile server 165 would be maintained separate from content processing device 110.” Prelim. Resp. 31 (citing Ex. 2001 ¶ 41). We tend to agree, at this stage, that one of ordinary skill in the art would not have moved profile server 165 (or its contents) to content processing device 110. Patent Owner’s declarant, Dr. Goodrich, testifies, and we agree at this stage, that “[a] POSITA would understand . . . that storing sensitive or valuable information in a backend server is generally more secure than storing it on multiple frontend devices.” Ex. 2001 ¶ 41. On this record, we question whether one of ordinary skill would have stored the sensitive profile information of multiple users on any one user’s system, where that information presumably would be less secure.

Thus, at this stage, we have concerns with Petitioner’s Output Signal Mapping 1.

*(2) Output Signal Mapping 2 and Combination*

Petitioner’s second mapping involves sending user data and data indicative of the selection sent from content processing device 110 to profile server 165, and then from profile server 165 to mixing server 130. Pet. 21. Petitioner illustrates this mapping with the following annotated version of Whitehead Figure 1:

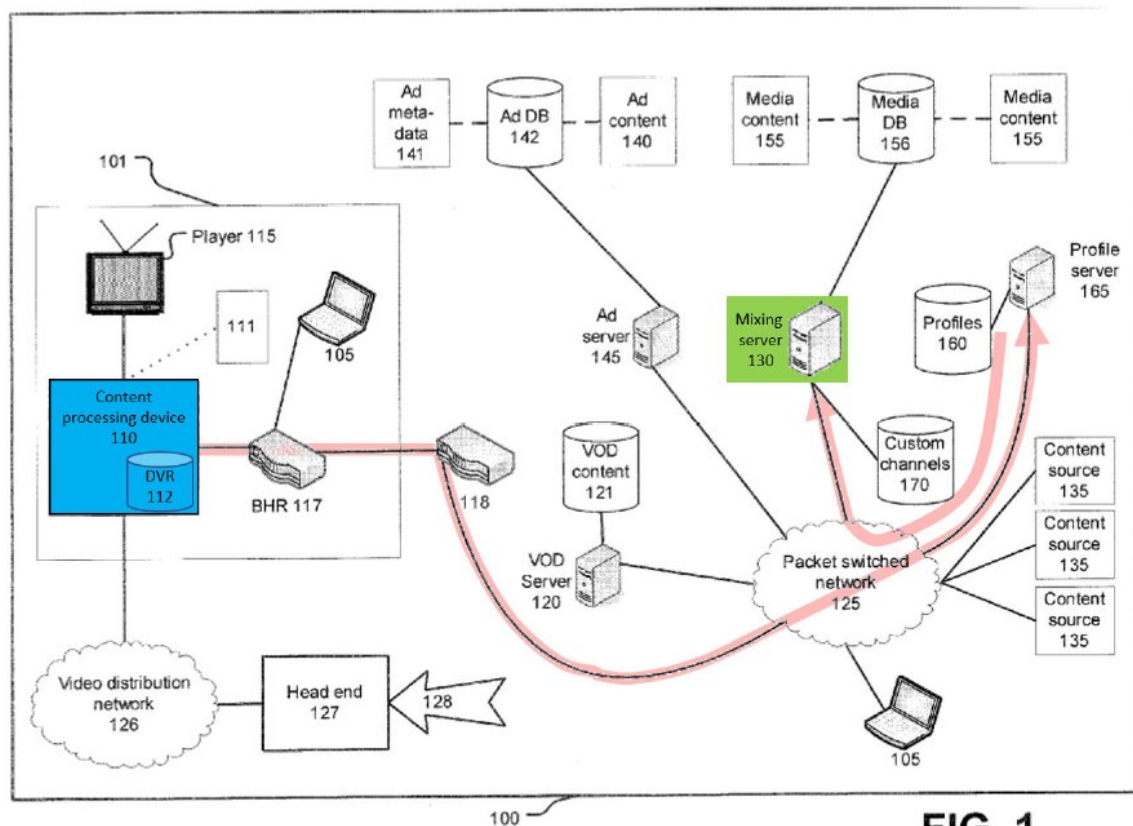


FIG. 1

*Id.* As can be seen in Figure 1, Petitioner has highlighted a communications path (pink) between content processing device 110 (blue) and profile server 165, and then from profile server 165 to mixing server 130 (green). *Id.* Petitioner argues that the content processing device 110 can be used to create or modify user profiles, which are user data, which are provided to profile server 165. *Id.* (citing, e.g., Ex. 1003, 6:35–46, 5:56–6:9). Profile server 165 transmits the profiles to mixing server 130. *Id.* (citing Ex. 1003, 11:40–12:17). According to Petitioner, “mixing server 130 receives the same ‘*user data*’ when the user selects the corresponding custom media channel 170.” *Id.* at 22 (citing Ex. 1002 ¶ 92).

Petitioner contends that it would have been obvious for the message from the content processing device 110 to profile server 165 to also include the claimed “*data indicative of the selection,*” namely, an identifier for the

custom media channel 170. *Id.* (citing Ex. 1003, 11:9–16). Petitioner contends that “Whitehead’s users can have multiple profiles,” so “custom media channel 170 thus needs an identifier . . . to distinguish it from other profiles.” *Id.* And it would have been obvious, Petitioner contends, to include profile information (“*user data*”) along with that identifier in messages from content processing device 110 to profile server 165 (and then to mixing server 130). *Id.* Petitioner asserts that including this identifier in the profile and related messages “would thus allow the system to differentiate and track different profiles in a simple manner.” *Id.*<sup>15</sup>

Petitioner’s proposed modification to include identifiers does not make sense to us, on this record. Petitioner’s statement that “custom media channel 170 thus needs an identifier . . . to distinguish it from other profiles” appears to conflate channels and profiles. It is unclear why an identifier is needed to distinguish a *channel* from a *profile*. To the extent that *profiles* might use identifiers to distinguish them from other profiles, that might constitute, at best, user data, not data indicative of the (channel) selection.

Further, Petitioner does not explain why this identifier would need to be conveyed to mixing server 130. Once the identifier is used to select the correct profile at profile server 165, there would presumably be no need to forward this identifier on to mixing server 130—it appears that just the profile would need to be forwarded. At least, Petitioner does not adequately

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<sup>15</sup> In the Output Mapping Signal 1 section of the Petition, Petitioner also argues that it would have been obvious to include an identifier to allow mixing server 130 “to locate the corresponding profile 160 faster and thereby facilitate[] creating the selected custom media channel 170 in real time or near-real-time.” Pet. 17 (citing Ex. 1003, 11:40–58; Ex. 1002 ¶ 88). This argument has the same superfluous problem we address above.

explain why a skilled artisan would have done so. Petitioner’s rationale is to “allow the system to differentiate and track different profiles in a simple manner,” which would appear to be met by sending an identifier only to profile server 165, and not then also to mixing server 130. *See id.* And without that identifier making it to mixing server 130, the claimed publisher arguably does not “receive the output signal from the aggregator” (limitation 19[b][ii]). *See* Prelim. Resp. 32 (contending that Petitioner rewrites the claim “so that the ‘output signal’ need not be received at the publisher from the aggregator”).<sup>16</sup>

We turn to Petitioner’s combination of Output Signal Mappings 1 and 2. *Id.* at 23–24. Petitioner’s combination argument hinges on a claim construction position, namely, that “the claimed ‘*output signal*’ does not require transmitting both ‘*data indicative of the selection*’ and ‘*data indicative of . . . user data*’ in a single message.” *Id.* at 22. Petitioner contends that there is no requirement that these two forms of data be transmitted simultaneously or consecutively or even via the same path. *Id.* at 23. So, Petitioner contends, under the plain meaning of “output signal,” Whitehead’s content processing device 110 outputs two different signals that qualify as the “output signal”: (1) a signal containing a request for a custom

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<sup>16</sup> At the same time, we question Patent Owner’s assertion that Petitioner’s reliance on transmitting data through profile server 165 fails because “Whitehead’s alleged aggregator itself does not provide the profiles to the alleged publisher.” *See* Prelim. Resp. 32–33. Claim 19 does not appear to preclude sending the output signal through an intermediary device from the aggregator to the publisher. As the aggregator can be a web server, Ex. 1001, 3:16–17, we presume Patent Owner would not disagree that output from the aggregator would be transmitted through routers or other network equipment to the publisher, for instance.

media channel and (2) data for the creation and modification of profiles 160. *Id.* at 24 (citing Ex. 1002 ¶ 95).

Patent Owner disagrees, arguing that Petitioner rewrites the claim so that, among other things, “a single signal need not include the user data and user selection.” Prelim. Resp. 32. On this record, we tend to agree with Patent Owner. Although typically “an indefinite article ‘a’ or ‘an’ in patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the transitional phrase ‘comprising,’” *Convolve, Inc. v. Compaq Computer Corp.*, 812 F.3d 1313, 1321 (Fed. Cir. 2016), this does not mean we can rewrite the output signal to be two separate signals. There may be one or more output signals, but on this record, each output signal includes “data indicative of the selection *and* of user data.”

According, we question whether Petitioner has shown, on this record, that limitation 19[a][iv] would have been obvious over Whitehead.

*c. Undisputed Limitations*

Petitioner asserts that Whitehead discloses the preamble and the remaining limitations of claim 19. Pet. 9–29. Petitioner identifies where Whitehead teaches these limitations, supported with testimony from Dr. Almeroth, which Patent Owner does not specifically rebut at this stage. *Id.*

We determine that, on this record, Whitehead discloses the preamble (whether or not limiting) and the remaining undisputed limitations of claim 19. *See LG Elecs., Inc. v. Conversant Wireless Licensing S.A.R.L.*, 759 F. App’x 917, 925 (Fed. Cir. 2019) (nonprecedential) (“The Board is ‘not required to address undisputed matters’ or arguments about limitations with which it was never presented.”) (quoting *In re NuVasive, Inc.*, 841 F.3d 966, 974 (Fed. Cir. 2016)).

*d. Summary as to Claim 19*

For the above reasons, we question whether Petitioner has shown a reasonable likelihood that claim 19 would have been obvious over Whitehead.

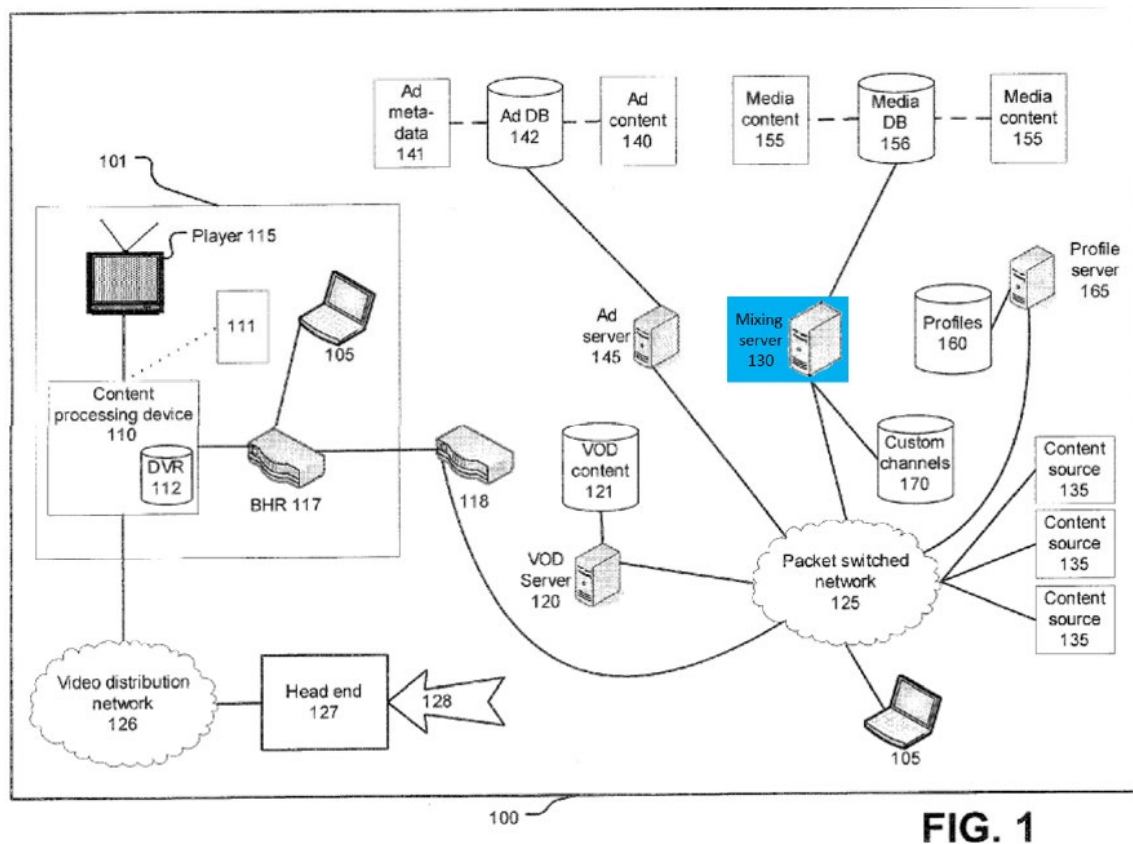
*2. Independent Claim 1*

Petitioner also asserts that Whitehead discloses or renders obvious claim 1. Pet. 36–39. Petitioner’s claim 1 arguments do not appear to have the same potential defects as claim 19.

Patent Owner disputes Petitioner’s arguments for limitations 1[d] and 1[e]. Prelim. Resp. 11–17.

- a. 1[d] accessing by the aggregator over a network the plurality of media streams; and  
1[e] providing . . . the media programming  
comprising concatenated elements of the plurality of  
media streams*

We first address Petitioner’s mapping for these limitations. Petitioner changes its Whitehead mapping for claim 1 to rely on a different component of Figure 1 as the claimed aggregator, as shown below:



Pet. 36–37. In Figure 1 above, Petitioner has illustrated mixing server 130 in blue as the claimed aggregator. *Id.* at 37. Petitioner argues, for example, that Whitehead discloses or renders obvious limitation 1[d] by teaching that mixing server 130 accesses media content 155 from content sources 135 (“plurality of media streams”) over network 125. *Id.* at 38 (citing Ex. 1003, Fig. 1, 5:9–23; Ex. 1002 ¶ 128). For limitation 1[e], Petitioner asserts that the mixing server 130 streams custom media channel 170 (“media programming”) via content processing device 110 to media player 115 (“client”) as a single multimedia file consisting of concatenated media content 155 and/or advertising content 140. *Id.* at 39 (citing Ex. 1003, 2:7–16, 8:42–64; Ex. 1002 ¶ 130).

After considering Patent Owner’s arguments, which we address next, we agree with Petitioner at this stage that Whitehead discloses these limitations.

Patent Owner first contends that rather than accessing a plurality of media streams, Whitehead accesses media elements stored in a database. Prelim. Resp. 11–14. Patent Owner’s argument depends on its construction of “media streams” as “a concatenated set of media elements,” which we have not adopted at this stage. *See id.* at 11.

Patent Owner next argues that the order of the steps in claim 1 is not met in Whitehead “because the mixing server would ‘access’[] the media streams *before* it receives the ‘data’ relating to the media streams.” *Id.* at 15. The claimed aggregator accessing the media streams must happen after receiving data relating to the media streams, Patent Owner argues, based on the logic and grammar of the claim. *Id.* Specifically, “[i]t would not be logical to read [c]laim 1 to encompass an aggregator that accesses a plurality of media streams before it receives ‘data’ about the media streams,” Patent Owner argues. *Id.* Patent Owner also relies on antecedent basis, as limitation 1[a] refers to “a plurality of media streams” and limitation 1[d] refers to “the plurality of media streams.” *Id.* at 15–16.

At this stage, we disagree with Patent Owner that the claim requires a specific order of steps. “As a general rule, unless the steps of a method claim actually recite an order, the steps are not ordinarily construed to require one.” *Mformation Techs., Inc. v. Research in Motion Ltd.*, 764 F.3d 1392, 1398 (Fed. Cir. 2014) (cleaned up). “However, a claim requires an ordering of steps when the claim language, as a matter of logic or grammar, requires that the steps be performed in the order written, or the specification

directly or implicitly requires an order of steps.” *Id.* (cleaned up). The claim language here does not appear to require such an ordering, and Patent Owner does not rely on the specification to bolster its position. Although limitation 1[d] appears to rely on limitation 1[a] for antecedent basis, this alone is insufficient here.

We do not see a logical reason at this stage why the aggregator cannot receive data relating to a plurality of media streams after accessing the plurality of media streams, as “data” is broadly recited. Dependent claim 14, for example, recites that the claimed data can be “categorizing data.” It is unclear to us why categorizing data, for instance, could not be received at the aggregator after the media streams themselves.

Turning to Patent Owner’s next argument, Patent Owner asserts that Whitehead’s alleged aggregator does not access media streams “just by virtue of receiving them and passing them on,” as “accessing” media streams “must require that the aggregator do more than merely act as a conduit between the Content Source and the Media DB.” *Id.* at 16. This is a claim construction position that Patent Owner does not adequately support with arguments and evidence at this stage. In our view, on this limited record, “accessing” is a broad term that encompasses acting as a conduit.

Accordingly, none of Patent Owner’s arguments undermine Petitioner’s showing at this stage for limitations 1[d] and 1[e].

*b. Undisputed limitations*

Petitioner asserts that Whitehead discloses the preamble and the remaining limitations of claim 1. Pet. 36–39. Petitioner identifies where Whitehead teaches the preamble and the remaining undisputed limitations, supported with testimony from Dr. Almeroth, which Patent Owner does not

specifically rebut at this stage. *Id.* We determine that, on this record, Whitehead discloses the preamble (whether or not limiting) and the remaining undisputed limitations of claim 1.

*c. Summary as to Claim 1*

Petitioner has established a reasonable likelihood that Whitehead would have rendered claim 1 obvious.

*3. Independent Claim 23*

The parties raise substantially similar arguments for independent claim 23 as for claim 19. *See* Pet. 35; Prelim. Resp. 17–34. Unlike claim 19, however, claim 23 recites “providing an output signal having data indicative of the selection” instead of claim 19[a][iv]’s “providing an output signal including data indicative of the selection *and of user data*” (emphasis added). We therefore do not have the same concerns with claim 23 at this stage as with claim 19. Petitioner has thus established a reasonable likelihood that Whitehead would have rendered claim 23 obvious.

*4. Dependent Claims 2–18, 20–22, 24*

Petitioner also contends that claims 2–18, 20–22, and 24 would have been obvious over Whitehead. Pet. 30–35, 39–51. Patent Owner does not dispute these dependent claims at this stage. We leave for trial the issue of whether Petitioner has met its burden on these claims. We note that as claims 20–22 depend from claim 19, our concerns regarding claim 19 extend to dependent claims 20–22.

*D. Alleged Obviousness over Whitehead and Marcus ’904*

Petitioner also contends that claims 1–24 are unpatentable over Whitehead and Marcus ’904. Pet. 51–55. Patent Owner raises no specific arguments against this ground. Prelim. Resp. 11–34 (addressing “Grounds 1

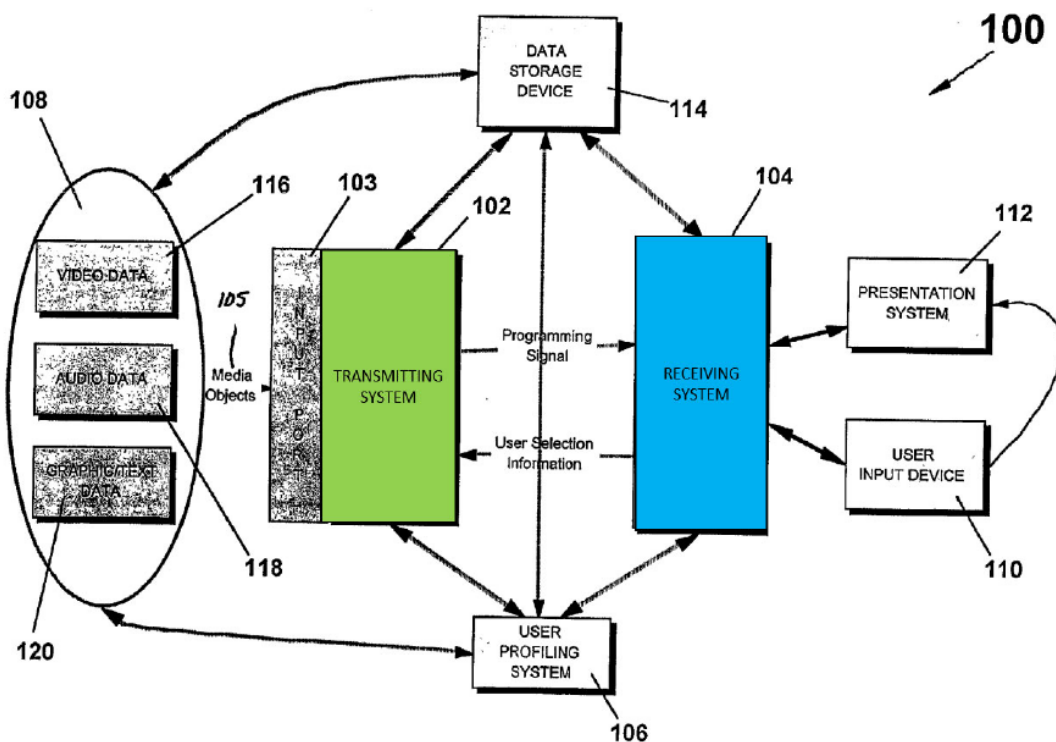
and 2” but focusing on Whitehead). Because Petitioner has established a reasonable likelihood of prevailing on at least part of its challenge over Whitehead alone, we leave this ground for trial.

*E. Alleged Obviousness over Cristofalo and Marcus '904*

Petitioner also contends that claims 1–24 are unpatentable over Cristofalo and Marcus '904.<sup>17</sup> See Pet. 56–80. At this stage, we question whether Petitioner has met its burden for this challenge.

*1. Independent Claim 19*

We summarize Petitioner’s reliance on Cristofalo and Marcus '904 for claim 19 as follows. See Pet. 58–68. Petitioner relies on the following annotated Figure 1 of Cristofalo:



<sup>17</sup> Instead of providing an overview of Cristofalo and Marcus '904 here, we describe these references below in the context of the parties’ arguments.

*Id.* at 58–59. In annotated Figure 1, Cristofalo’s system 100 includes a transmitting system 102 (green), which Petitioner relies on for the claimed publisher, and a receiving system 104 (blue), which Petitioner relies on for the claimed aggregator. *Id.*

Petitioner argues that Cristofalo’s receiving system 104 allows a user to select programming (19[a][i]; *id.* at 59), necessarily or obviously presents the user with programming options (19[a][ii], [iii]; *id.* at 60–61), and provides the user’s choice of programming and user profile information to Cristofalo’s transmitting system 102 (19[a][iv], *id.* at 61–63). Petitioner further argues that Cristofalo’s transmitting system 102 receives the user’s choice and profile information (19[b][ii]; *id.* at 65), generates media programming, and provides it to the user (19[b][iii]–[vi]); *id.* at 66). Petitioner also relies on Marcus ’904 for addressing “the lack of detail in Cristofalo regarding targeting by transmitting system 102,” arguing that Marcus ’904 describes a receiver that collects media and assembles a program from the collected media (19[b][iii]–[vi]); *id.* at 66–68).

Patent Owner challenges Petitioner’s arguments on limitations 19[a][iv] and 19[b][iii]–[vi], and as well as Petitioner’s rationale to combine Cristofalo and Marcus ’904. Prelim. Resp. 38–45. At this stage, we have concerns regarding Petitioner’s showing for limitations 19[a][iv] and 19[b][iii]–[vi], and we also question Petitioner’s rationale to combine.

*a. 19[a][iv] providing an output signal including data indicative of the selection and of user data*

For limitation 19[a][iv], Petitioner contends that Cristofalo teaches the “output signal including data indicative of the selection” by disclosing the receiving system 104 providing “the user’s choice of programming” to

transmitting system 102. Pet. 61 (citing Ex. 1004 ¶ 46, Fig. 1). As for the “output signal including data indicative . . . of user data,” Petitioner points to receiving system 104 providing user profile information (“user data”) to user profiling system 106, which in turn is co-located with transmitting system 102. *Id.* at 62 (citing Ex. 1004 ¶¶ 37, 39). Petitioner argues that the user profile information is ultimately received and used by transmitting system 102. *Id.* (citing, e.g., Ex. 1004 ¶¶ 28, 37–39, 47, 53; Ex. 1002 ¶ 184).

According to Petitioner, this mapping works because the claimed “output signal” does not require sending the selection data and user data in a single message. *Id.* at 63. We explain above why we have not adopted this claim interpretation at this stage, so we express concerns with this argument as well. We also observe that although Cristofalo teaches that user profiling system 106 may be “co-located with the transmitting system 102,” neither Petitioner nor Cristofalo explain what this means. *See id.* at 62; Ex. 1004 ¶ 37. Patent Owner argues, and we tend to agree on this record, that co-location of these two systems does not necessarily mean that “sending user profile information from *receiving system 104* to *user profiling system 106* is tantamount to sending profile information from a *receiving server 104* to *transmitting system 102*.” Prelim. Resp. 43–44 (citing Ex. 1004 ¶ 37).<sup>18</sup>

Even if the claimed output signal requires a single message, Petitioner argues, Cristofalo still renders this limitation obvious. Pet. 63. Petitioner contends that a POSITA would have combined Cristofalo’s selection data

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<sup>18</sup> Nevertheless, we do not decide at this stage whether Patent Owner correctly argues that user profiling system 106 and transmitting system 102 are separate servers. *See* Prelim. Resp. 44.

and user data into a single message because the combination would have facilitated targeting content based on location:

For example, the message could contain both the user's choice and the user's geographic information to facilitate targeting content based on location (EX1004 ¶35), which would be especially desirable for presentation systems 112 that are a mobile device (EX1004 ¶24) and the user's location may thus be different each time the user chooses programming to watch.

*Id.* This argument is problematic on this record because Cristofalo already targets content to users based on geographic location (Ex. 1004 ¶ 35), so there would appear to be no benefit from this modification.

Petitioner further argues that “receiving all relevant user profile information together with the user's choice eliminates the need for further processing and delay associated with retrieving or correlating profile information.” *Id.* (citing Ex. 1002 ¶ 186). Apart from a citation to its declarant, who essentially parrots the Petition, Petitioner does not support this statement. *See id.* Thus, there appears to be little evidence in this record that combining these two types of data would reduce “the need for further processing and delay.” *See id.* Moreover, we tend to agree with Patent Owner that there is no evidence that Cristofalo's system even suffers from any processing delay. *See Prelim. Resp. 44.* At this stage, then, Petitioner's argument appears to rest on impermissible hindsight.

*b. Limitations 19[b][iii]–[vi] and Rationale to Combine*

Patent Owner raises several other arguments. *See Prelim. Resp. 38–43.* In view of our already expressed concerns for limitation 19[a][iv], we only briefly address these arguments at this stage.

First, apparently referring to limitations 19[b][iii]–[vi], Patent Owner contends that Cristofalo's alleged aggregator (receiving system 104)

generates and provides media programming, not its alleged publisher (transmitting system 102). Prelim. Resp. 38. This argument may or may not have merit, but regardless, it is unclear which of Cristofalo's teachings Petitioner relies on for limitations 19[b][iii]–[iv]. Petitioner asserts that Cristofalo's transmitting system 102 generates and provides media programming to the user but, instead of explaining why, merely provides a string cite to Cristofalo. Pet. 66. Petitioner's assertion transfers the burden to the Board to figure out its argument, but “[j]udges are not like pigs, hunting for truffles buried in briefs.” *United States v. Dunkel*, 927 F.2d 955, 956 (7th Cir. 1991) (per curiam), *quoted with approval in Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1250 n.2 (Fed. Cir. 2008).

Patent Owner further argues against Petitioner's reasons to combine. Prelim. Resp. 41–43. Petitioner contends that one motivation for combining would have been to use Marcus '904's advertisements to unlock additional revenue sources in Cristofalo. Pet. 57 (citing Ex. 1002 ¶ 173). Patent Owner argues that this would have been unnecessary because Cristofalo's receiving system already assembles the programming with advertisements. Prelim. Resp. 41. Patent Owner's argument rings true because Cristofalo already teaches pushing advertising and programming to users. *See, e.g.*, Ex. 1004 ¶¶ 14 (Cristofalo teaching “push[ing] targeted advertising and programming to users”), 34–35.

We also question Petitioner's proposed rationale for other reasons. Petitioner states, for example, that the additional disclosure in Marcus '904 would lead to “better customization of media programming by Cristofalo's transmitting system 102,” but this is a nebulous assertion. Pet. 57 (citing Ex. 1002 ¶ 170). Petitioner also asserts that the combination would allow

Cristofalo’s receiving system 104 to customize the sequence of media elements, but this is also vague. *Id.* (citing Ex. 1002 ¶ 172).

Thus, we also question Petitioner’s arguments for limitations 19[b][iii]–[vi] and its rationale to combine Cristofalo with Marcus ’904.

## 2. *Independent Claim 1*

Petitioner generally raises similar arguments for claim 1 as claim 19, referring back to its claim 19 arguments for the bulk of its analysis. *See* Pet. 71–72. Patent Owner raises two arguments, one related to the alleged timing requirement of the claims, which we have already preliminarily rejected above, and one related to the claimed “data relating to the plurality of streams.” Prelim. Resp. 36–38.

Limitation 1[c] states, in part, “based on the user information and the *data related to the plurality of media streams*, determining . . . a temporal sequence of media programming.” Patent Owner argues that Petitioner relies on user identifiers in Cristofalo to teach this data but that “user identifiers” are not “data relating to a plurality of streams.” *Id.* at 36. Indeed, the Petition tersely argues that “user identifiers” are the claimed “*data*.” Pet. 71 (citing Ex. 1004 ¶ 48).

We tend to agree with Patent Owner at this stage that “user identifiers” do not appear to be “data relating to a plurality of streams.” At a minimum, Petitioner has not adequately explained its theory. Further, Petitioner relies on the same rationale to combine for all claims, so the concerns we express above for claim 19 also apply to claim 1. *See* Pet. 56–58.

Accordingly, we also have concerns about Petitioner’s challenge to claim 1 over Cristofalo and Marcus ’904.

### *3. Independent Claim 23*

Petitioner mainly relies on its claim 19 arguments for claim 23. Pet. 70. As we have expressed certain concerns with respect to limitations 19[b][iii]–[vi], we share the same concerns for similar limitations of claim 23. Further, Petitioner relies on the same rationale to combine for all claims, so the concerns we express above also apply to claim 23. *See* Pet. 56–58.

### *4. Dependent Claims 2–18, 20–22, 24*

Petitioner also contends that claims 2–18, 20–22, and 24 would have been obvious over Cristofalo and Marcus '904. Pet. 68–70, 72–80. Our concerns regarding independent claims 1, 19, and 23 also extend to each of these dependent claims, by virtue of their dependence on the independent claims.

## V. CONCLUSION

Petitioner has demonstrated a reasonable likelihood of prevailing on at least one challenge to at least one claim. But Patent Owner has raised arguments that call into question some of Petitioner's positions, which the parties should further address during trial.<sup>19</sup> We have not made a final patentability determination of the challenged claims or any underlying factual and legal issues.

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<sup>19</sup> We caution Patent Owner that merely relying on this Decision's preliminary findings without further supporting its arguments may result in Petitioner persuading us that our initial impressions were incorrect.

## VI. ORDER

We ORDER that:

*Inter partes* review of all challenged claims of the '704 patent is  
instituted; and

Trial commences on the entry date of this Decision.

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