Trials@uspto.gov
571-272-7822

Paper 28
Entered: September 27, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETFLIX, INC. and HULU, LLC,
Petitioner,

v.

DIVX, LLC,
Patent Owner.

IPR2020-00648
Patent 9,998,515 B2

Before BART A. GERSTENBLITH, MONICA S. ULLAGADDI, and IFTIKHAR AHMED, *Administrative Patent Judges*.

GERSTENBLITH, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Netflix, Inc. and Hulu, LLC (collectively "Petitioner") filed a Petition (Paper 3, "Pet.") requesting institution of *inter partes* review of claims 1–6, 8–10, 13, 14, 16, 17, and 19 ("the Challenged Claims") of U.S. Patent No. 9,998,515 B2 (Ex. 1001, "the '515 patent"). DivX, LLC ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp."). Applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review of the Challenged Claims. Paper 9 ("Inst. Dec.").

After institution, Patent Owner filed a Patent Owner Response (Paper 14, "PO Resp."), Petitioner filed a Reply to Patent Owner's Response (Paper 17, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 21, "PO Sur-reply"). An oral hearing was held on June 14, 2021, and a copy of the transcript was entered in the record. Paper 26 ("Tr.").[1]

We have jurisdiction pursuant to 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of the claims on which we instituted trial. Petitioner bears the burden of proving unpatentability of the Challenged Claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e) (2018); 37 C.F.R. § 42.1(d) (2019). Having reviewed the arguments and the supporting evidence, we determine

[1] The oral hearings for this proceeding and IPR2020-00647 were held together because many of the issues presented by the parties overlap. Paper 22 (Order Granting the Parties' Requests for Oral Hearing), 1.

that Petitioner has shown, by a preponderance of the evidence, that claims 16, 17, and 19 are unpatentable, but has not shown, by a preponderance of the evidence, that claims 1–6, 8–10, 13, and 14 of the '515 patent are unpatentable.

B. Related Proceedings

Petitioner and Patent Owner identify the following related matters: *DivX, LLC v. Netflix, Inc.*, No. 2:19-cv-01602 (C.D. Cal.) and *DivX, LLC v. Hulu, LLC*, No. 2:19-cv-01606 (C.D. Cal.). Pet. 77; Paper 5 (Patent Owner's Mandatory Notices), 1.

C. Real Parties in Interest

Petitioner identifies Netflix, Inc. and Hulu, LLC as the real parties in interest. Pet. 77. Patent Owner identifies DivX, LLC and DivX CF Investors LLC as the real parties in interest. Paper 5, 1.

D. The Instituted Grounds of Unpatentability and Declaration Evidence

Petitioner challenges the patentability of claims 1–6, 8–10, 13, 14, 16, 17, and 19 of the '515 patent on the following grounds:

Claim(s) Challenged	35 U.S.C. §[2]	Reference(s)/Basis
1, 4, 5, 8–10, 14, 16, 17, 19	103(a)	Pyle,[3] Marusi[4]
1–6, 8–10, 13	103(a)	Lewis,[5] Marusi

Pet. 7. Petitioner supports its challenge with a Declaration by Clifford Reader, Ph.D. (Ex. 1003, "the Reader Declaration"). Patent Owner supports its arguments with a Declaration by Kenneth A. Zeger, Ph.D. (Ex. 2016).

E. The '515 Patent

The '515 patent is directed to "streaming media and more specifically to the automatic generation of top level index files for use in adaptive bitrate streaming." Ex. 1001, 1:20–22. In its Background section, the '515 patent explains that "[a]daptive bit rate streaming or adaptive streaming involves detecting the present streaming conditions (e.g. the playback device's

[2] The Leahy-Smith America Invents Act ("AIA") included revisions to 35 U.S.C. § 103 that became effective on March 16, 2013. Because the '515 patent has an effective filing date before March 16, 2013, we apply the pre-AIA version of § 103.

[3] U.S. Patent No. 8,782,268 B2 (Ex. 1004, "Pyle"). Pyle was filed November 3, 2010, published January 26, 2012, and claims priority to a provisional patent application that was filed July 20, 2010. Ex. 1004, codes (22), (60), (65).

[4] European Patent Application EP 2180664 A1, published April 28, 2010 (Ex. 1005, "Marusi").

[5] U.S. Patent Application Publication No. US 2012/0047542 A1, published February 23, 2012 (Ex. 1006, "Lewis").

networking bandwidth and video decoding capacity) in real time and adjusting the quality of the streamed media accordingly." *Id.* at 1:34–38. Further, "[i]n adaptive streaming systems, the source media is typically stored on a media server as a top level index file pointing to a number of alternate streams that contain the actual video and audio data. Each stream is typically stored in one or more container files." *Id.* at 1:60–64. The '515 patent describes a top level index as follows:

> A top level index is a file that describes the location and content of container files containing streams of media (e.g. audio, video, metadata, and sub-titles) that can be utilized by the playback device to stream and playback content. In adaptive bitrate streaming systems, the top level index file typically references the alternative streams that the playback device can switch between.

Id. at 6:50–57.

Figure 1 of the '515 patent is reproduced below:

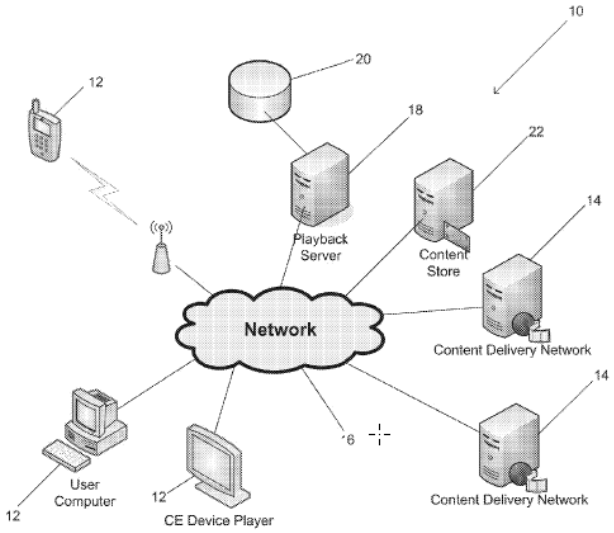

FIG. 1

Figure 1 "is a network diagram of a streaming system including a playback server." Ex. 1001, 6:13–15. The '515 patent explains:

> streaming system 10 includes a number of playback devices 12 configured to request streaming of content from remote servers within content delivery networks (CDNs) 14 via a network 16 such as the Internet. In order to stream content, the playback device obtains a top level index file that is automatically generated by the playback server 18 using a database 20 of available assets (i.e. container files containing streams of content associated with specific titles) and a set of predetermined filters or criteria.
>
> To perform adaptive bitrate streaming, the playback devices 12 select content from different alternative streams described in the top level index file. Alternative streams are streams that encode the same media content in different ways. In many instances, alternative streams encode media content (such as but not limited to video) at different maximum bitrates.

Id. at 7:33–49.

Figure 4 of the ’515 patent is reproduced below:

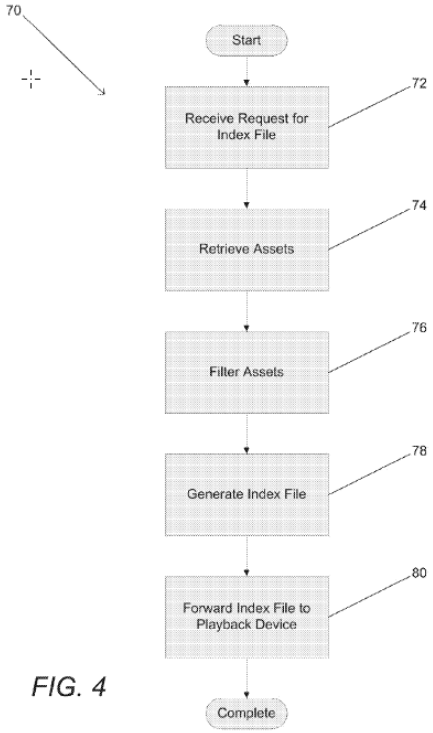

FIG. 4

Figure 4 “is a flow chart illustrating a process for automatically generating a top level index file.” Ex. 1001, 6:22–24. The ’515 patent explains that the

process shown in Figure 4 "commences when the playback server receives (72) a request for a top level index file with respect to a specific piece of content from a specific playback device." *Id.* at 11:62–65. The "capabilities of the playback device" may be "identified using a product ID, which is associated with specific playback capabilities in a database accessible to the playback server." *Id.* at 12:4–7.

The '515 patent describes the remaining steps of the process as follows:

> The playback server retrieves (74) assets associated with the requested piece of content. The playback server filters (76) the assets based upon one or more filters associated with the capabilities of the playback device, the preferences of the user, and the requirements of the content owner. Accordingly, different top level index files can be generated with respect to the same content dependent on factors including (but not limited to) differences in playback capabilities between devices, differences in geographic location, and/or differences in language preferences associated with the playback devices. Processes for retrieving and filtering assets associated with a specific piece of content in accordance with an embodiment of the invention are discussed further below. Following filtering, the remaining assets can be utilized to generate (78) the top level index file, which can be provided (80) to the playback device.

Ex. 1001, 12:8–23. The '515 patent states that "[i]n a number of embodiments, playback devices 12 provide information concerning their playback capabilities to the playback server 18 and the server automatically generates top level index files by filtering assets associated with a purchased piece of content based upon device capabilities." *Id.* at 8:2–7.

F. Illustrative Claims

Claims 1 and 16, the independent claims challenged in this proceeding, are illustrative of the claimed subject matter and are reproduced below, with Petitioner's bracketing added for reference:

> 1. [a] A method for authorizing playback of content, comprising:
> [b] receiving a request for content from a playback device at a playback server, where the request includes a product identifier that identifies a device configuration;
> [c] identifying, using the playback server, based on the product identifier, a plurality of device capabilities including a device type and a device software version indicating a version number for an adaptive streaming software component implemented on the playback device;
> [d] retrieving, using the playback server, a list of assets associated with the identified piece of content, wherein each asset is a different stream associated with the piece of content;
> [e] filtering, using the playback server, the list of assets based on the plurality of device capabilities;
> [f] generating, using the playback server, a top level index file describing each asset in the filtered list of assets,
> [g] wherein the top level index file identifies locations and bitrates of a plurality of alternative streams capable of being used to perform adaptive streaming of the content; and
> [h] sending the top level index file from the playback server to the playback device.
>
> 16. [a] A playback device, comprising:
> [b] memory containing information used to identify capabilities of the playback device; and
> a processor configured by a client application;
> [c] wherein the client application configures the processor to:
> request, using the playback device, a top level index file from a playback server, where the request identifies a piece of content and includes a software version indicating a version

> number for an adaptive streaming software component implemented on the device;
>
> [d] receive, using the playback device, a top level index file from the playback server, where the top level index file identifies locations and bitrates of a plurality of different alternative streams capable of being used to perform adaptive streaming of the identified piece of content and accessible to the playback device;
>
> [e] select, using the playback device, an initial stream from the plurality of different alternative streams;
>
> [f] retrieve, using the playback device, at least a portion of the initial stream from the locations identified in the top level index file; and
>
> play back, using the playback device, the portion of the initial stream.

Ex. 1001, 20:43–67 (claim 1), 22:4–26 (claim 16).

G. Level of Ordinary Skill in the Art

Petitioner, supported by Dr. Reader's testimony, proposes that a person of ordinary skill in the art at the time of the invention would have had "a bachelor's degree in mechanical engineering, electrical engineering, computer science, or a similar field with at least two years of experience in adaptive streaming and content management" or "a master's degree in mechanical engineering, electrical engineering, computer science, or a similar field with a specialization in adaptive streaming or content management." Pet. 18 (citing Ex. 1003 ¶ 72). Petitioner contends that "[a] person with less education but more relevant practical experience may also meet this standard." *Id.*

> Additionally, Petitioner asserts that one of ordinary skill in the art would have known and had the skills necessary to create architectures necessary for adaptive streaming and content management, including cataloging content, storing data in streaming container files and using manifest or index files to

> distribute streaming content to client devices. It was well-known to select amongst different encodings of content to optimize the delivery of content based upon various parameters, including device capabilities, network conditions, geographic location and content ratings. A [person of ordinary skill in the art] would also have been aware of standards, such as the 3GPP specification, that utilized manifests, such as the Media Presentation Description (MPD) manifest for adaptive streaming applications. A [person of ordinary skill in the art] would also have been familiar with techniques for adaptive streaming, including switching between different portions of a movie or show depending upon various factors, including network conditions.

Pet. 18–19 (citing Ex. 1003 ¶ 72).

Patent Owner does not address, expressly, the level of ordinary skill in the art in its Response. *See generally* PO Resp. Patent Owner's declarant, Dr. Zeger, however, adopts the same level of ordinary skill in the art proposed by Dr. Reader. *See* Ex. 2016 ¶ 18 ("For purposes of this proceeding, I will adopt Dr. Reader's definition of the level of ordinary skill in the art . . . ." (citing Ex. 1003 ¶ 71)).

In our Institution Decision, we found that Petitioner's proposal was consistent with the level of ordinary skill in the art reflected by the prior art of record and we preliminarily adopted Petitioner's unopposed position. Inst. Dec. 8–9 (citing *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978)). As neither party challenges our preliminary finding regarding the level of ordinary skill in the art, we see no reason to disturb that finding. Accordingly, we maintain and reaffirm that one of ordinary skill in the art at the time of the invention would have had "a bachelor's degree in mechanical engineering, electrical engineering,

computer science, or a similar field with at least two years of experience in adaptive streaming and content management" or "a master's degree in mechanical engineering, electrical engineering, computer science, or a similar field with a specialization in adaptive streaming or content management" and that "[a] person with less education but more relevant practical experience may also meet this standard." *See* Inst. Dec. 8–9 (setting forth and adopting Petitioner's unopposed position as to the level of ordinary skill in the art) (alteration in original).

II. CLAIM CONSTRUCTION

In this *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2019). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art at the time of the invention. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

If the specification "reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess[,] . . . the inventor's lexicography governs." *Phillips*, 415 F.3d at 1316 (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Another exception to the general rule that claims are given their ordinary and customary meaning is "when the patentee disavows the full scope of a claim term either in the specification or during

prosecution." *Uship Intellectual Props., LLC v. United States*, 714 F.3d 1311, 1313 (Fed. Cir. 2013) (quoting *Thorner v. Sony Computer Entm't Am., LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)).

Additionally, only terms that are in controversy need to be construed, and these need be construed only to the extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that "only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy"); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

A. "top level index file"

Petitioner proposes only a single claim term—"top level index file"—for construction. Pet. 19. Patent Owner's Preliminary Response did not contest Petitioner's proposed construction. Inst. Dec. 11 (citing Prelim. Resp.). In our Institution Decision, we construed "top level index file" as "a file that describes the location and content of container files containing streams of media (e.g. audio, video, metadata, and subtitles) that can be utilized by the playback device to stream and playback content." *Id.*

Neither party contests our construction in the briefing following institution. *See generally* PO Resp.; Pet. Reply; PO Sur-reply. Accordingly, for the same reasons explained in our Institution Decision (Inst. Dec. 10–11), we maintain and reaffirm our preliminary construction of "top level index file."

B. "a list of assets"; "the list of assets"; "the filtered list of assets"

Limitation 1[d] recites, *inter alia*, "retrieving . . . (i) *a list of assets* associated with the identified piece of content"; limitation 1[e] recites, *inter alia*, "filtering . . . *the list of assets*"; and limitation 1[f] recites, *inter alia*, "generating . . . a top level index file describing each asset in *the filtered list of assets*." Ex. 1001, 20:54–61 (emphasis added). Although neither party initially requested that we construe the phrases "a list of assets," "the list of assets," or "the filtered list of assets," several aspects of the parties' dispute involve the meaning of the terms "a" and "the" as recited in these limitations. Therefore, because the parties' dispute the meaning of these terms, we address them here.

Considering the phrase "a list of assets" first, the parties dispute the meaning of the term "a." Specifically, Petitioner contends "a" means "one or more" (*see* Pet. 31–32 (citations omitted), Pet. Reply 13), whereas Patent Owner contends "a" means only one (*see* PO Resp. 12). This dispute is presented in the context of the parties' arguments regarding Petitioner's first ground, based on the combination of Pyle and Marusi. Specifically, Petitioner contends that (a) each of Pyle's manifests includes a list of assets and (b) it would have been obvious that all of the manifests associated with a piece of content form a list of assets. Pet. 31–32 (citing Ex. 1003 ¶ 171).

Patent Owner asserts that "the claims requir[e] 'retrieving **a** list of assets'" and that "[a]s is clear from the plain language of the claims, this requires a single 'list of assets.'" PO Resp. 12 (citing Ex. 2016 ¶ 38). Patent Owner contends that Petitioner's argument as to why *all* of the manifests associated with a piece of content form *a list* of assets is not supported sufficiently by Dr. Reader's testimony. *Id.* at 13–14. Patent Owner relies

upon Dr. Zeger's testimony that "[e]ven if Pyle's single manifest file was a 'list' of representations, a [person of ordinary skill in the art] would not understand Pyle's multiple manifest files to form a single list." *Id.* at 15 (quoting Ex. 2016 ¶ 40).

In its Reply, Petitioner contends that Patent Owner's attempt to construe "a list of assets" to mean "a single 'list of assets'" as opposed to "one or more list of assets" should be rejected "because it goes against decades of precedent finding that 'a' means 'one or more' except in limited circumstances that are not present here." Pet. Reply 13 (citing *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1355 (Fed. Cir. 2000)).

In its Sur-reply, Patent Owner asserts that Petitioner's proposed construction is untimely because it was not raised in the Petition and that the plain language of the claim clearly indicates that only a *single* list is used to list *multiple* assets. PO Sur-reply 12–13 (citing, *inter alia*, *Harari v. Lee*, 656 F.3d 1331, 1341 (Fed. Cir. 2011); *TiVo, Inc. v. Echostar Commc'ns Corp.*, 516 F.3d 1290, 1303 (Fed. Cir. 2008); *In re Varma*, 816 F.3d 1352, 1362 (Fed. Cir. 2016); Ex. 1001, 2:23–34, 3:1–5, 4:21–23, 12:60–67, 17:59–66).

First, although Petitioner did not propose an explicit construction for the phrase "a list of assets" in the Petition, it is clear from the arguments and analysis in the Petition that Petitioner applied the meaning of "one or more" to the term "a." As indicated above, Petitioner's second option as to how Pyle teaches "a list of assets," is based on the interpretation that all of the manifests associated with a piece of content form a list of assets. Pet. 31–32 (citing Ex. 1003 ¶ 171). In other words, that "a list of assets" can include *one or more* lists of assets.

Second, Patent Owner had an opportunity to respond, which it did in its Response and, even more particularly, in its Sur-reply, as discussed above. Accordingly, we do not find Petitioner's argument untimely.

Turning to the meaning of the term "a" in the phrase "a list of assets," the case law makes clear that "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'" unless an "extremely limited" exception applies. *See Convolve, Inc. v. Compaq Computer Corp.*, 812 F.3d 1313, 1321 (Fed. Cir. 2016) (quoting *KCJ Corp.*, 223 F.3d at 1356; *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1342 (Fed. Cir. 2008)). Here, claim 1 recites the transitional phrase "comprising," meaning it is open-ended, and, therefore, the usual meaning of "a" as "one or more" would have been expected absent an extremely limited exception. In considering whether an exception applies, our review of the '515 patent fails to indicate that the patentee intended the phrase to mean anything other than the usual meaning of "one or more." Patent Owner asserts that "[t]he plain language of the claim clearly indicates only a single [list] is used to list ***multiple*** assets" and quotes two portions of the Specification, which state "a list of assets that satisfies criteria" and "a list of assets to which a . . . device is granted access." PO Sur-reply 12–13 (quoting Ex. 1001, 12:60–67) (citing Ex. 1001, 2:23–34, 3:1–5, 4:21–23, 17:59–66). Although claim 1 of the '515 patent recites "assets" in the plural, we fail to see how that conveys that the term "a" would have been understood as limited to "one." Notably, neither party has identified *any* inconsistency, in the claims or other portions of the Specification (including the portions quoted and/or cited by Patent Owner), resulting from construing "a" as "one or more." And, we find that

there is no reason why the claims could not be met under the construction of "a" as "one or more." Thus, we find that the '515 patent does not "evince [ ] a clear intent to limit a or an to one." *See Convolve*, 812 F.3d at 1321 (internal quotations omitted). Accordingly, we construe the term "a" in "a list of assets" as "one or more" such that the phrase "a list of assets" means "one or more list of assets."

Considering next the phrase "the list of assets" recited in limitation 1[e], the parties do not dispute that the use of the term "the" means that "the list of assets" refers back to the one or more list of assets retrieved in limitation 1[d] and discussed above. *See* PO Resp. 1–2; *see generally* Pet. Reply; PO Sur-reply 5. Similarly, the parties do not dispute that the phrase "the filtered list of assets," recited in limitation 1[e], refers back to the list of assets resulting from the filtering step of limitation 1[d]. *See* PO Resp. 3–4; *see generally* Pet. Reply; PO Sur-reply 5. We agree with the parties that each of these phrases refers back to the previous instance of the recited terms.

III. ANALYSIS

A. Legal Standards – Obviousness

The U.S. Supreme Court set forth the framework for applying the statutory language of 35 U.S.C. § 103 in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966) (footnote added):

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc.,

> might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.[6]

The Supreme Court explained in *KSR International Co. v. Teleflex Inc.* that

> [o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.")).

"Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact." *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted). "[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan 'would have had a reasonable expectation of success from doing so.'" *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

[6] Neither party presents evidence of objective considerations of nonobviousness.

B. Obviousness over Pyle and Marusi

Petitioner asserts that the combination of Pyle and Marusi would have rendered the subject matter of claims 1, 4, 5, 8–10, 14, 16, 17, and 19 obvious to one of ordinary skill in the art at the time of the invention. Pet. 19–51. Patent Owner raises several arguments in response.

With respect to independent claim 1, one argument asserted by Patent Owner is that the Petition fails to show that the combination of Pyle and Marusi teaches limitation 1[f]—"generating . . . a top level index file describing each asset in the filtered list of assets." PO Resp. 19–21. As discussed further below, Petitioner's analysis of limitation 1[f] suffers from a deficiency in that neither the Petition nor Dr. Reader sets forth any reason or explanation why one of ordinary skill in the art would have understood Pyle to generate a manifest file simply by placing the manifest file in a memory for transmission to a client device. Pet. 35 (citing Ex. 1003 ¶ 184). Additionally, this deficiency affects claims 4, 5, 8–10 and 14, which depend from claim 1. Accordingly, we focus our analysis of claim 1 on this issue after describing Pyle and Marusi.

With respect to independent claim 16, Patent Owner raises only a single issue—that Petitioner fails to show the combination of Pyle and Marusi includes the functionality of limitation 16[c]. PO Resp. 27 (referring to § II.D of Patent Owner's Response, which is directed to limitation 1[c]). Patent Owner relies entirely on its arguments directed to limitation 1[c] in challenging Petitioner's analysis of limitation 16[c]. *Id.* Thus, our discussion below considers the arguments and evidence directed to limitations 1[c] and 16[c]. For the reasons explained below, we find, by a preponderance of the evidence, that Petitioner's analysis is supported on the

record and sufficient to show that the subject matter of claim 16 would have been obvious to one of ordinary skill in the art at the time of the invention. Further, Petitioner's analysis of claims 17 and 19, to which Patent Owner does not raise additional argument, is similarly supported on the record.

1. Level of Ordinary Skill in the Art

As discussed above, we adopt Petitioner's unopposed position as to the level of ordinary skill in the art. *See supra* § I.G.

2. Scope and Content of the Prior Art

a. Pyle

Pyle is directed to "dynamic composition of media for streaming to consuming devices." Ex. 1004, 1:14–15. Figure 2 of Pyle is shown below:

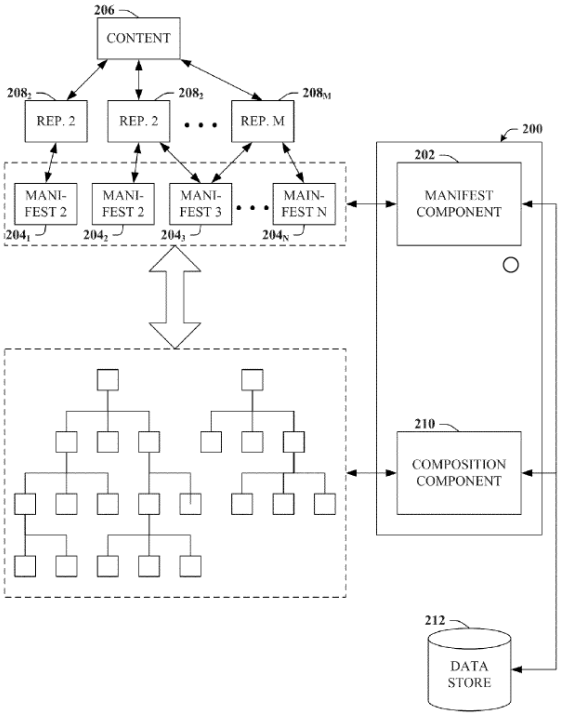

FIG. 2

Figure 2 "illustrates a block diagram of . . . system [200] that can facilitate hypertext transfer protocol (HTTP) delivery of streaming media." *Id.* at 3:21–23, 7:45–47.

Pyle explains:

> In general, system 200 can include manifest component 202 that can be configured to maintain multiple manifests 204_1-204_N for a single item of content 206. By way of example, content 206 can be substantially any type of content, such as a movie, song, or another media production, that is suitable for delivery to or presentation at endpoints of a streaming network. As illustrated, content 206 can be associated with various representations 208_1-208_M of that content 206, such as, e.g., different representations based upon different bitrates, resolutions, languages, or even an original theatrical version versus a PG-13 version, or substantially any other suitable attribute. Accordingly, it is to be understood that while only a single item of content 206 (e.g., a single movie or song) is depicted, other content 206 could exist, and each item of content 206 can have multiple representations 208_1-208_M as well as multiple manifests 204_1-204_N, where M and N can be any substantially positive integer. Moreover, it is to be understood that representations 208_1-208_M and manifests 204_1-204_N can be referred to herein, either collectively or individually as representation(s) 208 or manifest(s) 204, respectively, with appropriate subscripts employed generally only when instructive or convenient to highlight various distinctions or to better impart the disclosed concepts.

Ex. 1004, 7:47–8:2.

Pyle states that "[t]ypically, a given manifest 204 will be an extensible markup language (XML) document that describe[s] at least one location of one or more content segment associated with one or more representation 208 of content 206." Ex. 1004, 8:3–6. Additionally, Pyle explains that "manifest 204 can further include other data such as attributes associated with content 206 or various representations 208 thereof." *Id.* at 8:6–9. Pyle distinguishes itself from "conventional streaming systems" that "maintain only a single manifest, that typically only describes locations of stored files."

Id. at 8:9–12. "As a result, conventional streaming systems are subject to the combinatorial complexity problem, and moreover do not provide for individual track addressability, are generally more limited by the file system format, as well as a host of other shortcomings." *Id.* at 8:12–16. Additionally, Pyle explains that "manifest 204 can describe the locations of various content segments, which can appear to a presentation device as a large set of small-interval content files, say 5 seconds or so. Nevertheless, the actual storage of content 206 can be in much larger files that are cross-indexed into chunks . . . ." *Id.* at 8:17–23.

Pyle further describes composition component 210, a component of system 200, explaining that "[c]omposition component 210 can be configured to organize the multiple manifests 204 in accordance with descriptions of the multiple manifests 204. For example, the multiple manifests 204 can be described based upon a set of attributes associated with one or more representation 208 and/or content 206." Ex. 1004, 8:28–35.

Pyle's Figure 4 is reproduced below:

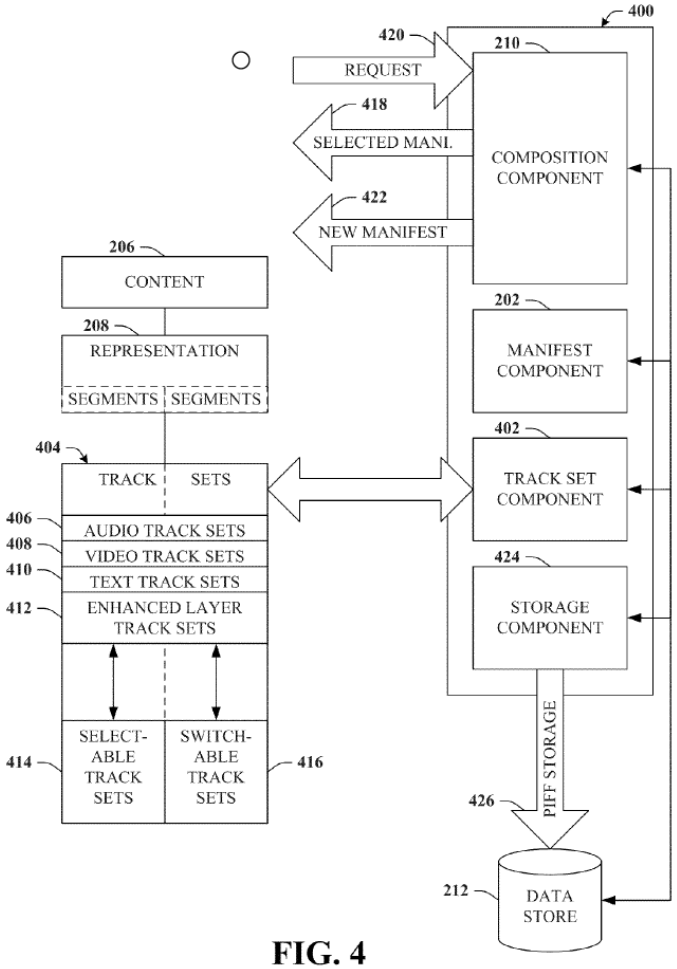

FIG. 4

Figure 4 is a "block diagram of . . . [a] system that illustrates additional features or aspect[s] in connection with HTTP delivery of streaming content." Ex. 1004, 3:26–28; *see id.* at 9:45–47 (same). Pyle explains that system 400 can include "track set component 402 that can be configured to identify track sets 404 available as alternative representations 208 of content 206 or content segments thereof." *Id.* at 9:54–57. Pyle teaches that a particular track set 404 "can relate to a single content type such as, e.g., audio, video, subtitles or other text, or an enhanced layer of video or audio." *Id.* at 9:59–61.

Pyle further describes that composition component 210, in system 400, can be "configured to select a particular selected manifest 418 from the set of available manifests 204 based upon data included in a request 420 for content 206." Ex. 1004, 10:23–25. Pyle distinguishes a request from an HD television from a request from a smart phone, explaining that "[a]lthough both requesting devices can request the very same movie (e.g., same content 206), it is readily apparent that these two distinct devices and/or configurations or preferences, will not demand the same representation 208 of that movie." *Id.* at 10:40–44. Because "manifests 204 can be optimized to comport with different classes of media consumers," Pyle teaches that "selected manifest 418 will also differ in the example scenario above when the HD television is the requesting device than when the smart phone is the requesting device." *Id.* at 10:48–53. Pyle explains that "composition component 210 can examine data included in request 420 and determine a suitable or optimal manifest, and select and transmit that manifest to the requesting device." *Id.* at 10:53–56.

Additionally, Pyle explains the following regarding composition component 210:

> Moreover, in one or more embodiment, composition component 210 can be further configured to facilitate composition of new manifest 422, which can be stored amongst other manifests 204. Such new manifests 422 can be composed, e.g., based upon a set of attributes that correspond to features of one or more track sets identified by track set component 402. For example, a content provider can compose new manifest 422 specifically tailored to, e.g., track sets that receive the most requests, deliveries, and/or presentations. Furthermore, new manifest 422 can be optimized in connection with delivery or presentation based upon at least one of (1) a particular device or particular devices or capabilities thereof

> (e.g., optimized for presentation on tablets versus televisions versus handhelds and so forth); (2) a particular form factor (e.g., display size or other user interface or I/O features); (3) a particular network or network conditions (e.g., bandwidth, latency, quality of service, etc.); or (4) a particular setting or preference or a particular set of settings or preferences (e.g., French-speaking, hearing impaired, ratings-based content block . . .).

Ex. 1004, 10:57–11:9.

b. Marusi

Marusi is directed to "a system for providing multi-media content and in particular to a system for accessing multi-media content, wherein the system is accessible by a mobile terminal through a radio network and provides a subset of the multi-media content which has a digital format supported by the mobile terminal." Ex. 1005 ¶ 1. Figure 1 of Marusi is reproduced below:

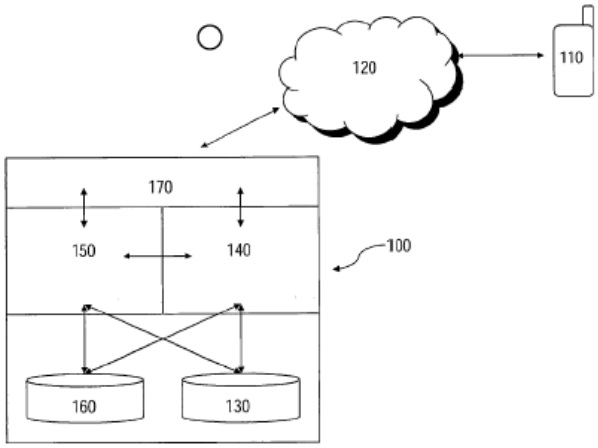

FIG. 1

Figure 1 shows "a simplified schematic diagram of the system." *Id.* ¶ 60. Marusi explains that "portal 100 comprises receiving and transmitting means 170 via which a mobile terminal 110, such as a cellular phone . . . etc., can access via a radio network 120 to the portal 100." *Id.* ¶ 83. Marusi

teaches that "mobile terminal characterizing unit 140 preferably provides mobile terminal capabilities information which indicates at least one capability of the mobile terminal 110." *Id.* ¶ 85. "Preferably, the information received from the mobile terminal 110 when connecting to system 100 comprises data by which the model and/or type of the mobile terminal can be identified." *Id.*

Marusi explains that "mobile terminal 110 may be provided with an identifier, which may be different for each communication standard so that each identifier corresponds with a different communication standard." Ex. 1005 ¶ 86. The identifier "may be sent from the mobile terminal 110 to the portal 100 when setting up a connection or/and during the connection with the portal 100." *Id.* ¶ 88. Marusi teaches that "mobile terminal characterizing unit 140 is additionally connected to database 160 which provides information regarding the capabilities of mobile terminals according to their type and/or model." *Id.* ¶ 89. "[M]obile terminal characterizing unit 140 can retrieve information from database 160 about the capabilities of the mobile terminal 110 based on the identifier or identification code received from the mobile terminal 110." *Id.*

Additionally, Marusi teaches that "mobile terminal characterizing unit 140 is functionally connected to matching unit 150." Ex. 1005 ¶ 90. Matching unit 150 can identify a subset of the multi-media content files having at least one specific digital format, wherein that specific digital format is supported by the capability of the mobile terminal. *Id.* Marusi explains the following regarding matching unit 150:

> In order to identify the subset of multi-media content files, the matching unit 150 is connected to storage means 130 which is preferably also a database. In this database, the multi-

> media content files are stored, preferably together with information about the digital format of each of the multi-media content files. This information can be retrieved by the matching unit 150 from storage means 130. The information from the storage means 130 regarding the digital format of the multi-media content files can be matched with the information regarding the capabilities of the mobile terminal 110. Thus, the matching unit 150 can identify a subset of the multi-media content file which is compatible with the capabilities of the mobile terminal 110 and which also corresponds to the request of the mobile terminal 110 for specific multi-media content.

Id. ¶ 91.

3. Differences Between the Prior Art and the Claims; Motivation to Modify

a. The Proposed Combination

Petitioner's discussion of this ground begins by addressing the general combination of Pyle and Marusi and motivation to combine their teachings before discussing the specific limitations of the claims. *See* Pet. 19–22 (addressing, in general, the combination of Pyle and Marusi). Specifically, Petitioner asserts that it would have been obvious to one of ordinary skill in the art to combine "Pyle's server system for dynamically composing manifest files with Marusi's teachings for storing multimedia content in a database, and Marusi's teachings of using a database to correlate device capabilities with device identification information." *Id.* at 19–20 (citing Ex. 1003 ¶ 144).

Petitioner asserts that "Pyle teaches common multimedia streaming techniques that were widely known in the art, including creating manifest files that would provide a client device with the location and identification of different versions of a particular piece of stored content." Pet. 20. Petitioner contends that "Pyle teaches a server system that filters asset data

in order to provide a manifest file specific to a client device by using a variety of parameters, including product type, form factor, network conditions, and language, to select specific assets to include in the manifest file." *Id.* (citing Ex. 1003 ¶ 145). Petitioner asserts that

> [b]ecause storing and tracking different representations of the same multimedia content using lists or a database was well-known, Pyle assumes that a [person of ordinary skill in the art] has such knowledge and does not explicitly describe these basic implementation details. Marusi, however, expressly describes such techniques. Marusi teaches storing a plurality of representations of multimedia content in a database along with a description of each representation's format. Ex. 1005, [0091]. Marusi also teaches identifying the capabilities of the requesting client device using the device's identification information by looking up the device's capabilities in a database that correlates device capabilities with the identifying information (such as a model number). Ex. 1005, [0085-0089]. Marusi then uses the capabilities to identify a subset of the multimedia content appropriate for the requesting client device. Ex. 1005, [0091]. Ex. 1003 ¶146.

Pet. 20–21.

Petitioner argues that one of ordinary skill in the art would have been motivated to combine these teachings for several reasons. Pet. 21. First, Petitioner contends "the combination is the use of a known technique to improve similar devices because using the capabilities of a client device to choose appropriately formatted content was a well-known technique." *Id.* Petitioner asserts that "implementing Marusi's techniques for organizing multiple representations and choosing among them based upon a client device's capabilities would predictably function in Pyle's system, which similarly seeks to target video content based on particular client device types and parameters." *Id.* (citing Ex. 1004, 10:57–11:10; Ex. 1003 ¶ 147).

Second, Petitioner argues that "detecting a client device's capabilities based upon client device identifiers was a common and known solution to the problem of supplying information in a format usable by the client device." Pet. 21. Petitioner contends that one of ordinary skill in the art "would have found it obvious to combine Marusi's teachings with Pyle because it is one solution, from a finite number of known, and predictable solutions." *Id.* (citing Ex. 1003 ¶ 148).

Third, with respect to Marusi's databases, Petitioner contends "[t]he combination of Marusi's databases to manage the data in Pyle's system uses a known technique to improve similar systems." Pet. 21. In particular, Petitioner asserts that one of ordinary skill "would have been motivated to combine Marusi's database teachings with Pyle because Pyle teaches storing the same content in multiple, different representations." *Id.* at 21–22 (citing Ex. 1004, 9:64–10:21). Further, Petitioner argues that "[u]sing a database to store and manage multiple representations of the same data, or even to simply store voluminous data for retrieval, was an extremely well-known and common application of databases." *Id.* at 22 (citing Ex. 1003 ¶ 149).

Additionally, Dr. Reader opines that one of ordinary skill in the art "would have understood that the teachings of Pyle and Marusi were complementary, and therefore would have been motivated to combine Pyle with Marusi to enhance the efficiency of generating, storing, and delivering multimedia content tailored to the capabilities of particular playback devices." Ex. 1003 ¶ 150.

In addition to Petitioner's general discussion of the combined teachings, reproduced above, Petitioner's analysis of each claim or claim limitation includes a discussion of the specific teachings of each reference,

or modifications thereof, that are relied upon for each claim or claim limitation. *See, e.g.*, Pet. 24–27 (addressing limitation 1[b]). With this understanding, we turn our attention to Petitioner's analysis of limitation 1[f].

b. Claim 1 – Limitation 1[f]

Limitation 1[f] recites "generating, using the playback server, a top level index file describing each asset in the filtered list of assets." Ex. 1001, 20:60–61. The Petition addresses limitations 1[f], 1[g], and 1[h] in a combined section. *See* Pet. 34–36 (addressing all three limitations). With respect to limitation 1[f], the Petition consists of a single paragraph:

> As explained for [limitations] 1(d) and 1(e), Pyle teaches filtering the list of assets in response to a request for content. Pyle further teaches transmitting a manifest file to the requesting device in response to the request for content. Ex. 1004, FIG. 4, 10:22–56 (selecting and transmitting manifest files to the requesting device), 10:57–11:10 (transmitting a new manifest file). A [person of ordinary skill in the art] would have understood that the manifest file sent in response to a request for content is generated because the manifest file must be placed in a memory for transmission to a client device. Ex. 1003 ¶184.

Pet. 34–35 (citations included in block quote). Although the Petition contends "[t]hese limitations are rendered obvious by the combination of Pyle and Marusi," *see id.* at 34 (citing Ex. 1003 ¶ 183), Dr. Reader opines that these limitations are "rendered obvious by Pyle," *see* Ex. 1003 ¶ 183 (addressing limitations 1[f], 1[g], and 1[h] together as one "claim limitation"). Paragraph 184 of Dr. Reader's Declaration is essentially identical to the single paragraph quoted above from the Petition. Ex. 1003 ¶ 184.

Patent Owner asserts that "the Petition fails to explain why a [person of ordinary skill in the art] would think that the claim requirement of 'generating a top level index file' could be met simply by storing a file in memory." PO Resp. 19 (referring to § II.C.1 of the Patent Owner Response). Patent Owner contends that "Petitioner provides no explanation or support for this apparent construction—the Petition's only cite for this statement is to one paragraph of Dr. Reader's testimony which merely repeats the Petition's assertion verbatim." *Id.* at 20. Patent Owner argues that "little weight" should be accorded to "such conclusory arguments." *Id.* (citation omitted). Further, Patent Owner asserts that "[a]s the Petition offers no other argument for why the Pyle combination teaches 'generating a top level index file,' the Petition fails to meet its burden to show that the limitation is met." *Id.* at 21.

In its Reply, Petitioner asserts that Patent Owner "ignores that Pyle teaches generating a top level index in two ways." Pet. Reply 15. "*First*, Pyle teaches generating a top level index file by creating a new manifest file in response to the request for content that is transmitted to the requester." *Id.* (citing Pet. 34–35; Ex. 1003 ¶ 184; Pet. Reply § IV.A). Petitioner asserts that Patent Owner "does not address that evidence or explain how creating a new manifest in response to a request for content does not teach 'generating.'" *Id.* "*Second*, Dr. Reader identifies another way that Pyle teaches the generating limitation – when Pyle transmits either a new manifest file or a selected manifest file (one that existed before the request for content), a copy of the new or selected manifest file is placed in memory for transmission." *Id.* (citing Pet. 35; Ex. 1003 ¶ 184). On this second point,

Petitioner notes that Dr. Zeger did not attempt to disagree with Dr. Reader's opinion. *Id.*

In its Sur-reply, Patent Owner contends that Petitioner's alleged first "argument is not in the Petition, which merely argues that 'the manifest file sent . . . is generated because the manifest file must be placed in a memory for transmission to a client device." PO Sur-reply 13–14 (citing Pet. 34–35). Patent Owner asserts that this new argument by Petitioner is untimely and should be ignored. *Id.* at 14 (citations omitted). Additionally, Patent Owner notes that Petitioner's Reply does not provide any further details to explain why one of ordinary skill in the art would understand placing a manifest file in memory for transmission as teaching generating a top level index file. *Id.* (citing Pet. Reply 15; PO Resp. 20).

We agree with Patent Owner that the Petition sets forth *only one* position as to how Pyle teaches limitation 1[f]. That position is reproduced above, quoted in full, from the one paragraph discussing limitation 1[f] in the Petition. Pet. 34–35. As reflected there, the *only* argument set forth in the Petition on this limitation is that one of ordinary skill in the art would have understood that "the manifest file sent in response to a request for content is generated because the manifest file must be placed in a memory for transmission to a client device." *Id.* at 35. The relevant paragraph of the Petition begins by reiterating Petitioner's arguments regarding limitations 1[d] and 1[e]. *Id.* at 34. The next sentence specifically states that Pyle teaches "transmitting a manifest file" and is followed by three citations to Pyle—Figure 4; column 10, lines 22–56; and column 10, line 57 through column 11, line 10. *Id.* at 34–35. Citations, such as these, placed after a statement are intended to show support for that statement. Here, they do just

that with respect to showing that Pyle transmits a manifest file to a client device. Figure 4 of Pyle shows, *inter alia*, Pyle's transmission of selected manifest 418 or new manifest 422. Ex. 1004, Fig. 4. And, Petitioner's parentheticals following the citations to columns 10 and 11 explain the purpose or import of the citations thereto. In each instance, Petitioner's parentheticals state that they are specifically directed to the *transmitting* aspects of Pyle: "selecting and *transmitting* manifest files to the requesting device" and "*transmitting* a new manifest file." Pet. 34–45 (emphasis added).[7] In other words, Petitioner's *explanatory* parentheticals explain the purpose(s) of the citations. And, in each instance, the parenthetical is directed to *transmission* of a manifest file to the client device by either selecting and transmitting an existing manifest or transmitting a new manifest. Neither the citations nor the parentheticals would have reasonably led Patent Owner or the Board to understand that Petitioner intended to assert an argument that is not stated, let alone stated clearly, in the Petition. Accordingly, we disagree with Petitioner's Reply position that the Petition *also* raises the argument that Pyle's *creation* of a new manifest (as opposed to its transmission) teaches "generating . . . a top level index file," as recited in limitation 1[f]. That argument, simply put, is not there.

Additionally, a comparison of Petitioner's discussion of a similar limitation in related case IPR2020-00647, confirms that Petitioner knew how to raise the argument (that creating a new manifest teaches generating a top

[7] Paragraph 184 of the Reader Declaration contains the same citations to Pyle and same explanatory parentheticals. Ex. 1003 ¶ 184.

level index file) if Petitioner chose to do so.[8] In IPR2020-00647, Petitioner asserted that one of ordinary skill in the art "would have found it obvious to generate a top level index file (e.g. manifest file), describing each asset in the filtered list of assets because as explained for limitations 1[c] and 1[d], Pyle teaches . . . creating new manifest files." IPR2020-00647, Paper 3 at 42 (addressing claim 1, specifically limitation 1[e], of related U.S. Patent No. 9,270,720 B2, which recites "generating a top level index file describing each asset in the filtered list of assets using the playback server system"). That argument, however, is *not* asserted in the Petition in *this proceeding*.[9] Conversely, the argument raised by Petitioner here—that placing a manifest file in memory for transmission to a client device teaches generating a top level index file—is not asserted by Petitioner in IPR2020-00647. *See id.* at 42–44. Thus, Petitioner chose to assert different positions regarding "generating." Accordingly, Petitioner knew how to raise the argument that Pyle's creation of a new manifest teaches the generating of limitation 1[f],

[8] Although this proceeding and IPR2020-00647 are related and the oral hearings were held together, the cases are not consolidated and the arguments and evidence submitted in each proceeding controls for that particular case.

[9] The difference between the two petitions was discussed during the oral hearing. *See* Tr. 45:12–47:17. Petitioner's counsel asserted that because column 10, line 57 through column 11, line 10 of Pyle was cited in both proceedings, it should have been understood that Petitioner was relying on the *creation* of a new manifest, *in addition* to the placement of the new manifest in memory for transmission, to teach the generating aspect of limitation 1[f]. *Id.* at 47:9–17. For the reasons discussed above, particularly in light of Petitioner's parentheticals that explain the significance of the cited material, we do not agree that Petitioner raised this argument in the Petition in this proceeding.

but chose not to do so. Thus, because Petitioner did not raise this argument here, it is not in the record before us.[10]

Turning to the argument that is raised in the Petition, we agree with Patent Owner that Petitioner and Dr. Reader fail to explain why one of ordinary skill in the art would have understood that Pyle generates a top level index file by placing a manifest file in memory for transmission to a client device. Pet. 35; *see* Ex. 1003 ¶ 184. "Opinions expressed without disclosing the underlying facts or data may be given little or no weight." Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019) ("Consolidated TPG"), 40–41, *available at* https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf (citing *Rohm & Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997)). Here, there is no explanation or reason given for Petitioner's assertion or Dr. Reader's testimony and the connection, if any, is not otherwise apparent. Further, aside from Dr. Reader's unexplained position, Petitioner has not pointed us to any evidence of record supporting the argument that one of ordinary skill in the art would have understood that placement of a file in memory for transmission teaches generating the file as recited in limitation 1[f]. Accordingly, without any explanation whatsoever, the record is without a sufficiently supported basis upon which to make that finding, resulting in a failure of proof by Petitioner with respect to claim 1.[11]

---

[10] We also note that Petitioner's Reply does not seek to *add* a new argument for our consideration; rather, Petitioner's Reply asserts, albeit incorrectly, that the argument was raised in the Petition. *See* Pet. Reply 15.

[11] Although Petitioner's Reply sets forth several arguments in response to other arguments raised in Patent Owner's Response, those additional arguments do not address to this aspect of limitation 1[f]. *See, e.g.*, Pet.

c. Dependent Claims 4, 5, 8–10, and 14

Petitioner contends that the combination of Pyle and Marusi would have rendered the subject matter of claims 4, 5, 8–10, and 14 obvious to one of ordinary skill in the art. Pet. 36–41. Claims 4, 5, 8–10, and 14 depend from claim 1 and, therefore, include limitation 1[f], as discussed above. Accordingly, for the same reasons discussed with respect to claim 1, Petitioner's analysis of these claims suffers from the same deficiency.

d. Independent Claim 16

Petitioner contends that the combination of Pyle and Marusi would have rendered the subject matter of claim 16 obvious to one of ordinary skill in the art. Pet. 41–49; *see also id.* at 19–22 (discussing the combination of "Pyle's server system for dynamically composing manifest files with Marusi's teachings for storing multimedia content in a database, and Marusi's teachings of using a database to correlate device capabilities with device identification information"). Claim 16, reproduced above in full, generally is directed to a "playback device" comprising a memory and a processor, where the processor is configured to request a top level index file, receive a top level index file that identifies locations and bitrates of a plurality of different alternative streams, select an initial stream from the plurality of different alternative streams, retrieve at least a portion of the initial stream, and play back the portion of the initial stream. *See* Ex. 1001, 22:4–27 (claim 16). Petitioner sets forth a detailed discussion of claim 16 with citations to the evidentiary record. Pet. 41–49.

Reply 9–11 (asserting that Patent Owner's arguments directed to limitations 1[d] (retrieving) and 1[e] (filtering) attack the references individually).

Patent Owner's Response challenges only a single aspect of Petitioner's analysis of claim 16—limitation 16[c]. PO Resp. 27. Specifically, Patent Owner contends that "[t]he Petition fails to show how Pyle's modified playback device includes the functionality of [limitation] 16[c] for the reasons discussed *supra*, Section II.D." *Id.* Section II.D of Patent Owner's Response is directed to arguing that the combination of Pyle and Marusi fails to teach limitation 1[c]. *Id.* at 22–27.

We have reviewed the Petition's discussion of claim 16 and the evidentiary citations therein. Because we find that Petitioner's arguments directed to claim 16, in general, are supported sufficiently on the record before us, we direct our focus to Patent Owner's challenge to limitation 16[c]. We begin by setting forth limitations 1[c] and 16[c] and then we walk through the parties' arguments directed thereto.

The similarities between limitations 1[c] and 16[c] are shown in the chart below:

Limitation 1[c]	Limitation 16[c]
identifying, using the playback server, based on the product identifier, *a plurality of device capabilities including a device type and a device software version indicating a version number for an adaptive streaming software component implemented on the playback device*	wherein the client application configures the processor to: *request*, using the playback device, a top level index file from a playback server, *where the request* identifies a piece of content and *includes a software version indicating a version number for an adaptive streaming software component implemented on the device*

Ex. 1001, 20:48–53, 22:8–13 (emphasis added).

With respect to limitation 16[c], Petitioner contends "[t]he combination of Pyle and Marusi renders this additional limitation obvious." Pet. 44 (citing Ex. 1003 ¶ 212). In particular, Petitioner asserts, "Pyle teaches that a manifest file, *i.e.*, a top level index file, is provided to the application on the playback device in response to a request." *Id.* (citing Ex. 1004, 32:51–54). Petitioner contends that one of ordinary skill in the art "would have understood from Pyle's description of an HD television and a smart phone that requests each include a client application because Pyle's description describes a viewer that is able to choose among content and input preferences into the devices." *Id.* at 44–45. Petitioner argues that it would have been obvious "that the application running on the TV or smart phone makes a request to identify a piece of content, as discussed above regarding claim limitation 1[b], based on the input from the viewer." *Id.* at 45. And, Petitioner asserts that "it would have been obvious for the request to include a software version indicating a version number for an adaptive streaming software component implemented on the playback device, as discussed above regarding claim limitation 1[c]." *Id.* (citing Ex. 1003 ¶ 213).

Petitioner's discussion of the "software version" aspect of limitation 1[c] sets forth two alternative positions as to why that recitation would have been obvious—(1) based on Pyle, and (2) based on Pyle in combination with Marusi. *See* Pet. 28–29 (discussing both). We discuss each, starting with Petitioner's first alternative and the parties' arguments directed to the specific position.

With respect to Petitioner's first alternative, Petitioner contends that one of ordinary skill in the art

> would have found it obvious to determine "a device software version indicating a version number for an adaptive streaming software component implemented on the playback device" as that would have been a relevant consideration for Pyle's adaptive streaming system because the adaptive streaming software component is software that decodes and plays the requested content.

Id. at 28 (citing Ex. 1003 ¶ 166). Petitioner asserts that "[i]t was well-known at the relevant time that the version of such software is an important consideration because different versions of such software (e.g., Flash and QuickTime) supported different formats over time." *Id.* (citing Ex. 1003 ¶ 166).

As discussed above, in response to Petitioner's contentions regarding claim 16, Patent Owner refers to its arguments directed to limitation 1[c]. PO Resp. 27. With respect to limitation 1[c], Patent Owner argues that the Petition fails to prove that it would have been obvious to "modify Pyle to include a product identifier and then use that product identifier to identify 'a device software version'" as recited in the claim and that the Petition "fails to prove that Marusi fills this gap." *Id.* at 22–23.

In response to Petitioner's first alternative, based on obviousness in light of Pyle, Patent Owner contends that "the Petition does not cite any support for [the] contention [that the version of such software was an important consideration because different versions of such software (e.g., Flash and QuickTime) supported different formats over time] aside from the one paragraph in Dr. Reader's declaration." PO Resp. 23 (citing Pet. 28; Prelim. Resp. 30). Patent Owner asserts that "as discussed in the [Patent Owner Preliminary Response], Pyle's express disclosure of its manifest files, and the commercial implementation of Pyle's technology, demonstrate that

'software version indicating a version number of an adaptive streaming component' ***was not a concern for Pyle's technology***." *Id.* at 24 (citing Prelim. Resp. 30; Ex. 2016 ¶ 51).

Patent Owner argues, in its Preliminary Response, that "Pyle provides full schemas for all manifests implemented by the client and server."[12] Prelim. Resp. 30 (citing Ex. 1004, Tables I–IV, Fig. 8). Patent Owner contends that "Pyle indicates nothing concerning how its server would have accounted for different client software versions, even assuming it received this information, which it does not. And there is no indication the commercial embodiment of the IIS server identified a version number for the client's adaptive streaming software." *Id.* (citing Ex. 2007 (IIS Smooth Streaming), 28–30). Because this argument was directed to limitation 1[c], Patent Owner asserts that "even if different software versions were implemented in Pyle, why would it have been obvious for the playback server to identify the software version ***based on the product identifier***, as recited in claim 1, as opposed to having the playback device send it directly? The Petition offers no answer."[13] *Id.* at 31.

Petitioner's Reply only addresses Petitioner's second alternative (based on Pyle and Marusi) as to why this limitation would have been

---

[12] We consider Patent Owner's Preliminary Response because Patent Owner raised the same argument in the Patent Owner Response.

[13] Although claim 1 recites a "product identifier," claim 16 does not. Thus, this argument by Patent Owner does not apply to the discussion of limitation 16[c]. In fact, Patent Owner's proposed option of having the playback device send the software version directly appears to align with the language of claim 16, which uses a playback device's processor to request a top level index file and includes the software version number for an adaptive streaming software component in the request.

obvious, not Petitioner's first alternative (based on Pyle alone). *See* Pet. Reply 16–18; *see also* PO Sur-reply 14–15 (noting that Petitioner's Reply does not address Petitioner's first alternative). With respect to Petitioner's second alternative, Petitioner contends "it would have been obvious to identify the version number for an adaptive streaming software component based on Marusi." Pet. 29. In particular, Petitioner asserts that "Marusi also teaches that determining the model or type of a client device (from the terminal identifier) alone does not solve all multimedia compatibility concerns because 'the formats supported sometimes vary for the same [phone] model according to the version, i.e. the last software upgrade of the actual phone.'" *Id.* (quoting Ex. 1005 ¶ 6) (citing Ex. 1003 ¶ 168) (alteration in original). Petitioner contends that "Marusi teaches that the terminal identification information commonly used by mobile phones include information called a 'Type Allocation Code' [(TAC)] that includes a software version number of the phone." *Id.* (citing Ex. 1005 ¶ 113). Petitioner also asserts that Marusi teaches that "this information can be used to retrieve capability information for the client device." *Id.* (citing Ex. 1005 ¶ 119; Ex. 1003 ¶ 168).

In response to this alternative, Patent Owner contends that Petitioner's argument fails "because Marusi's Type Allocation Code ***does not include a software version number***." PO Resp. 25. Patent Owner asserts that "a TAC does not indicate a software version, but instead demonstrates the model of the device as well as the type of wireless network." *Id.*; *see id.* at 25–27 (discussing Dr. Zeger's testimony regarding the components of a TAC) (citing Ex. 2016 ¶ 55).

In its Reply, Petitioner reiterates that Marusi states "[t]he TAC code is a portion of the 15-digit international mobile equipment identity (IMEI) code or the 17-digit international mobile equipment identity and Software Version (IMEISV) code used to uniquely identify wireless devices." Pet. Reply 16 (quoting Ex. 1005 ¶ 113) (citing Ex. 1005 ¶¶ 17–20; Pet. 26–27, 29). Petitioner explains that Marusi "teaches that the IMEI or IMEISV code is the terminal identification information transmitted by the mobile device." *Id.* (citing Ex. 1005 ¶ 114). Petitioner contends that "whether Marusi correctly describes IMEISV and TAC codes is irrelevant because Marusi expressly teaches a [person of ordinary skill in the art] to use terminal identification information that includes a software version." *Id.* (citing *In re Clark*, 420 F. App'x 994, 998 (Fed. Cir. 2011)). And, Petitioner asserts that "the rationale for considering a device type and software version is expressly taught by Marusi's paragraph 6":

> Content providers . . . used to give a list of mobile phones which support the proposed content. . . . This does not solve the problem of incompatibility and not all users know the exact model they have, because ***the formats supported sometimes vary for the same model according to the version***, i.e., the last software upgrade of the actual phone.

Id. (quoting Ex. 1005 ¶ 6).

Additionally, Petitioner asserts that Dr. Zeger's testimony regarding whether the software version of a media player is a relevant concern when choosing media for playback, either "demonstrates his lack of knowledge in this field" or is "a false statement." Pet. Reply 17 (citing Ex. 1010, 234:14–235:1). Petitioner further points to a new reference, Exhibit 1009, arguing that it describes providing different versions of video content depending

upon the version of the media player (i.e., an adaptive streaming software component). *Id.* at 17–18 & n.2 (citations omitted).

In its Sur-reply, Patent Owner acknowledges that Marusi's teaching is specifically about the last software upgrade of the actual phone, but argues that is not the same as an adaptive streaming component. PO Sur-reply 15 (citing and incorporating Prelim. Resp. 31). Additionally, Patent Owner disagrees with Petitioner's characterization of Dr. Zeger's testimony, contending that Petitioner's criticisms should be disregarded. *Id.* (citing Ex. 1010, 234:14–17, 234:23–235:1, 236:6–10). Further, Patent Owner contends that Petitioner's submission of a new reference, that does not form part of the asserted combination and was not presented in the Petition, should be discounted as untimely. *Id.* at 16 (citing Pet. Reply 17).

We determine that Petitioner's second alternative, relying on Pyle and Marusi, is persuasive to show that one of ordinary skill in the art would have found it obvious that the software version of the adaptive streaming software component implemented on a playback device is a relevant consideration in the context of the combined teachings of the references, and, thus, it would have been obvious to include the software version in the request identifying a piece of content. In particular, Marusi specifically teaches that the software version of a phone (i.e., client device) is a relevant consideration when determining compatibility issues between multi-media content and a playback device. *See* Ex. 1005 ¶ 6. One example of a client device in Pyle is a smart phone, which one of ordinary skill in the art would have understood to contain a memory with information that describes the device's capabilities. Pet. 43–44 (citing Ex. 1004, 35:58–59, 10:22–56; Ex. 1003 ¶ 210). We credit Dr. Reader's testimony that "the adaptive streaming

software component is software that decodes and plays the requested content." Ex. 1003 ¶ 166. Thus, in light of Marusi's teaching regarding the importance of the software version of a client device and the combination proposed by Petitioner, which includes the example of a smart phone as a client device, we determine that the software version of the adaptive streaming software component would have been a relevant concern to one of ordinary skill in art at the time of the invention. Accordingly, we determine that Petitioner has shown sufficiently that it would have been obvious to one of ordinary skill in the art to include a "software version indicating a version number for an adaptive streaming software component implemented on the device" in the request as recited in limitation 16[c].[14]

As noted previously, Petitioner sets forth a detailed discussion of claim 16 with citations to the evidentiary record. Pet. 41–49; *see id.* at 19–22 (discussing motivation to combine the teachings of Pyle and Marusi). Above, our discussion focused on limitation 16[c] as that was only limitation for which Patent Owner raised an argument, and any other responsive argument is now waived. *See* Paper 10 ("Scheduling Order"), 8 ("Patent Owner is cautioned that any arguments not raised in the response may be deemed waived."). We have reviewed Petitioner's arguments and evidence with respect to the other limitations of claim 16 and the reasons as to why one of ordinary skill in the art would have been motivated to combine the

[14] In reaching this determination we find little, if any, relevance in Patent Owner's argument regarding the alleged commercial implementation of Pyle because what is ultimately commercialized does not set the boundaries for what would have been obvious to one of ordinary skill in the art. *See* PO Resp. 24 (discussing an alleged commercial implementation of Pyle's technology).

teachings of Pyle and Marusi as proposed, and we find them sufficiently supported on the record before us. Therefore, we affirmatively adopt Petitioner's analysis of the other limitations of claim 16 and motivation to combine the teachings of Pyle and Marusi as our own. Pet. 41–44 (addressing limitations 16[a] and 16[b]), 45–49 (addressing limitations 16[d]–[f]); *see id.* at 19–22 (addressing motivation to combine the teachings of Pyle and Marusi).

e. Dependent Claims 17 and 19

Claims 17 and 19 depend from claim 16. Ex. 1001, 22:28 (claim 17), 22:35 (claim 19). Petitioner sets forth a detailed discussion of claims 17 and 19 with citations to the evidentiary record. *See* Pet. 50–51 (citing Ex. 1004, 8:3–6, 8:28–33, 8:43–54, 10:57–11:10, 10:22–39, 10:40–56; Ex. 1003 ¶¶ 227–231); *see also* Pet. 19–22 (addressing motivation to combine the teachings of Pyle and Marusi). Patent Owner does not raise an additional argument (aside from the argument directed to claim 16) specific to these dependent claims. *See* PO Resp. 27 (arguing claims 16, 17, and 19 together). We have reviewed Petitioner's arguments and evidence with respect to claims 17 and 19 and the reasons as to why one of ordinary skill in the art would have been motivated to combine the teachings of Pyle and Marusi as proposed, and we find them sufficiently supported on the record before us. Therefore, we affirmatively adopt Petitioner's analysis as our own. Pet. 50–51; *see id.* at 19–22.

f. Weighing the Graham *Factors*

"Once all relevant facts are found, the ultimate legal determination [of obviousness] involves the weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan."

Arctic Cat, 876 F.3d at 1361. On balance, considering the record before us, Petitioner has not shown, by a preponderance of the evidence, that the subject matter of claims 1–6, 8–10, 13, and 14 of the '515 patent would have been obvious, but has shown, by a preponderance of the evidence, that the subject matter of claims 16, 17, and 19 would have been obvious to one of ordinary skill in the art at the time of the invention.

C. Obviousness over Lewis and Marusi

Petitioner contends that the combined teachings of Lewis and Marusi would have rendered the subject matter of claims 1–6, 8–10, and 13 obvious to one of ordinary skill in the art at the time of the invention. Pet. 51–76. Patent Owner raises several arguments in response, including that Petitioner asserts limitation 1[d] would have been obvious without providing a reason why one of ordinary skill in the art would have modified Lewis to meet the language of the claims. PO Resp. 30–33. For the reasons explained below, we agree with Patent Owner. Further, because this issue is dispositive, we focus our analysis there after discussing Lewis.

1. Level of Ordinary Skill in the Art

As discussed above, we adopt Petitioner's unopposed position as to the level of ordinary skill in the art. *See supra* § I.G.

2. Scope and Content of the Prior Art

a. Lewis

Lewis is directed to "media playback using dynamic manifest files." Ex. 1006 ¶ 2. Figure 3 is reproduced below:

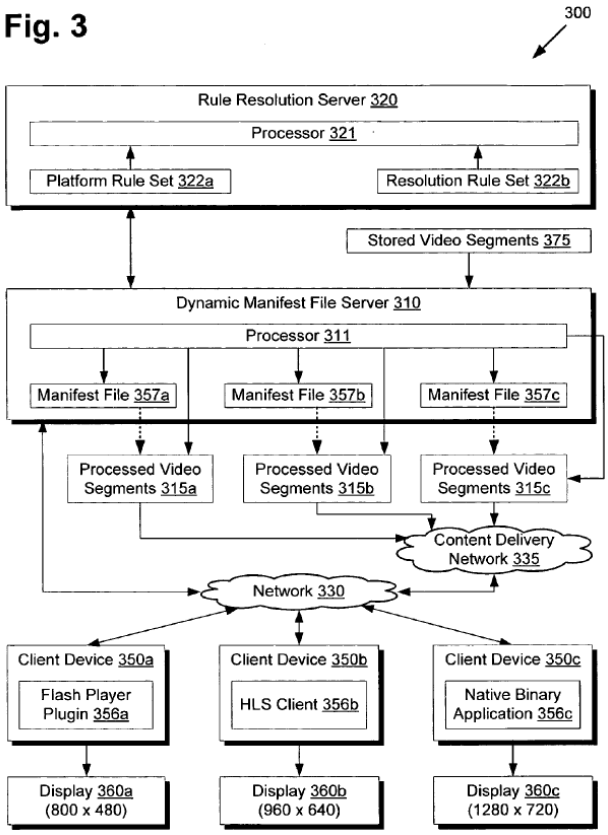

Figure 3 shows "a diagram of a system for using rule-based dynamic server-side streaming manifest files to implement stream targeting for client devices." *Id.* ¶ 12; *see also id.* ¶ 25. Lewis explains that the system shown in Figure 3 includes "rule resolution server 320, stored video segments 375, dynamic manifest file server 310, processed video segments 315*a* through 315*c*, content delivery network 335, network 330, client devices 350*a* through 350*c*, and displays 360*a* through 360*c*." *Id.* ¶ 25. Lewis teaches that "[d]ynamic manifest file server 310 includes processor 311 and manifest files 357*a* through 357*c*." *Id.*

Lewis explains:

> dynamic manifest file server 310 provides manifest files for a diverse range of client device platforms, including Flash Player plugin 356*a* at client device 350*a*, HTTP Live Streaming client 356*b* at client device 350*b*, and native binary application 356*c* at client device 356*c*. Platform rule set 322*a* may include various rules as how to customize video content based on the target device platform to be supported. Additionally, displays 360*a*, 360*b*, and 360*c* each utilize different screen resolutions to display video content, and resolution rule set 322*b* may include various rules as how to resize video content based on the target display resolution.

Ex. 1006 ¶ 26. Lewis teaches that for each of client devices 350*a* through 350*c*, platform rule set 322*a* may dictate that, if a request originates from a particular client device, dynamic manifest file server 310 should preferably generate a particular manifest file, 357*a* through 357*c*. *See id.* ¶¶ 27–29 (describing three exemplary client devices and the manifest file generated for each). Lewis explains that each manifest file references processed video segments 315*a*, 315*b*, or 315*c*. *Id.* Lewis states that "rule resolution server 320 may also implement a wide variety of other rules to enhance, target, and customize the video streaming experience for the end user," including a rule that may "rewrite the URLs within a manifest file to point to the content delivery network in closest proximity to the client device, providing improved network performance and responsiveness." *Id.* ¶ 32.

Figure 4 of Lewis is reproduced below:

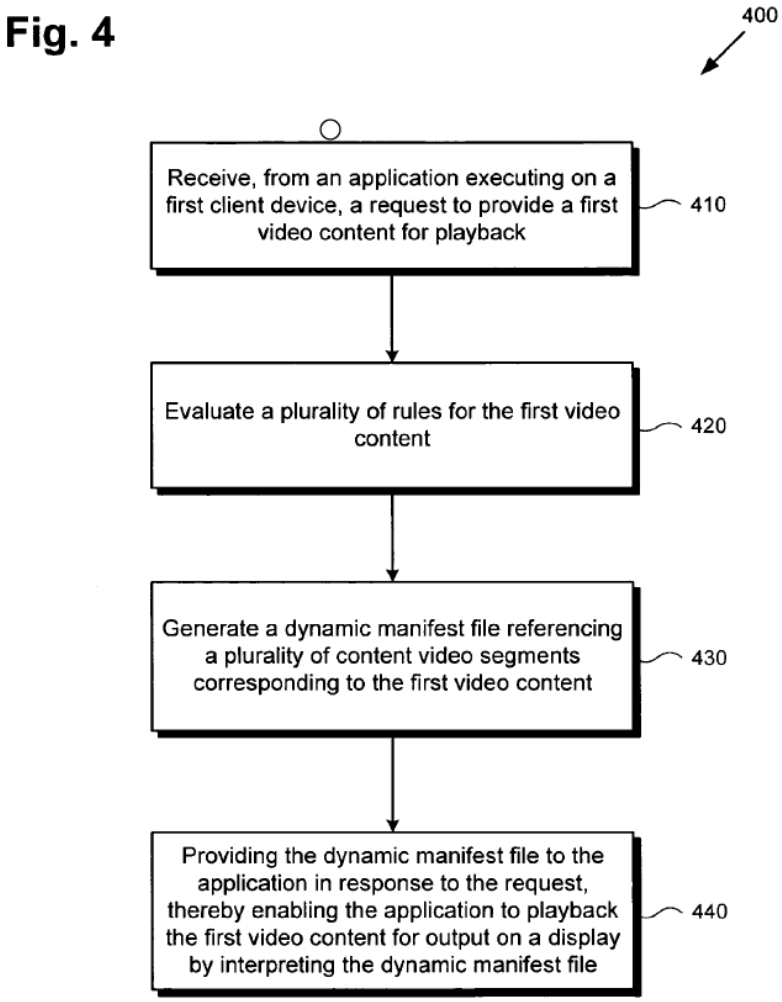

Figure 4 "shows a flowchart describing the steps . . . by which rule-based dynamic server-side streaming manifest files may be provided." Ex. 1006 ¶ 13; *see also id.* ¶ 35 (same). Lewis teaches that "step 410 . . . comprises processor 111 of dynamic manifest file server 110 receiving, from media player application 156 executing on processor 151 of client device 150, a request to provide a first video content for playback." *Id.* ¶ 36. Step 420 "comprises processor 111 of dynamic manifest file server 110 passing parameters from the request received in step 410 to rule resolution server 120, which may then evaluate a plurality of rules for the live event

requested in step 410." *Id.* ¶ 37. The parameters may include "device identifiers." *Id.* Further, Lewis states that "[a]dditional rules may further customize the final manifest file, as for example platform rule set 322*a* and resolution rule set 322*b* shown in FIG. 3, which may be used to optimize video delivery for specific devices and display configurations." *Id.*

Lewis teaches that step 430 "comprises processor 111 of dynamic manifest file server 110 generating manifest file 157 referencing live video segments 175 corresponding to the live event stream requested in step 410." Ex. 1006 ¶ 39. In step 440, processor 111 provides, in response to the request received in step 410, "manifest file 157 to media player application 156 executing on processor 151 of client device 150, thereby enabling media player application 156 to playback the live event . . . by interpreting manifest file 157." *Id.* ¶ 40.

3. Differences Between the Prior Art and the Claims; Motivation to Modify

a. The Proposed Combination

Petitioner's discussion of this ground begins by addressing the general combination of Lewis and Marusi and motivation to combine their teachings before discussing the specific limitations of the claims. *See* Pet. 51–53 (addressing, in general, the combination of Lewis and Marusi). The arguments are nearly identical to Petitioner's arguments directed to the general combination of Pyle and Marusi, presented in the first ground. *Compare id. with id.* at 19–22. In particular, Petitioner contends that one of ordinary skill in the art would have found the subject matter of claims 1–6, 8–10, and 13 obvious over "the combination of Lewis' server system for dynamically generating manifest files with Marusi's teachings for storing multimedia content in a database, and Marusi's teachings of using a database

to correlate device capabilities with device identification information." *Id.* at 51 (citing Ex. 1003 ¶ 233). As with Petitioner's first ground, in addition to Petitioner's general discussion of the combined teachings, Petitioner's analysis of each claim or claim limitation includes a discussion of the specific teachings of each reference, or modifications thereof, that are relied upon for each claim or claim limitation. *See, e.g.*, Pet. 55–57 (addressing limitation 1[b]). With this understanding, we turn our attention to Petitioner's analysis of limitation 1[d].

b. Claim 1 – Limitation 1[d]

Limitation 1[d] recites "retrieving, using the playback server, a list of assets associated with the identified piece of content, wherein each asset is a different stream associated with the piece of content." Ex. 1001, 20:54–57. Although Petitioner contends "[t]he combination of Lewis and Marusi renders this limitation obvious," Petitioner's analysis of this limitation relies entirely on Lewis. Pet. 60–62.

Petitioner asserts that Lewis "teaches maintaining assets associated with the identified piece of content, wherein each asset is a different stream associated with the piece of content." Pet. 61. Specifically, Petitioner points to Lewis's Figure 3, contending that "Lewis teaches that stored video segments 375 are associated with processed video segments 315a-c that are each in different formats," and provides the following chart:

Processed Video Segments	Format
315a	"F4F Flash video files" (*id.*, [0027])
315b	"MPEG transport stream video files" (*id.*, [0028])
315c	"MPEG transport stream video files" (*id.*, [0029])

Id. (citing Ex. 1003 ¶ 267).

Petitioner asserts, "Lewis explains that when each of the different client devices 'requests video content represented by stored video segments 375,' the dynamic manifest file server (with input from the rule resolution server) includes references to the appropriate processed video segments (i.e., 315a, 315b, or 315c) depending upon the platform type." Pet. 61 (citing Ex. 1006 ¶¶ 27–29). Petitioner contends that one of ordinary skill in the art "would have understood that manifest file server and rule resolution server associate the different processed video segments with the original content requested." *Id.* (citing Ex. 1003 ¶ 268). Notably, Petitioner asserts that one of ordinary skill in the art "would have understood that *Lewis' processed video segments are each an 'asset'* because the '515 patent describes assets as 'container files containing streams of content associated with specific titles' (Ex. 1001, 7[:]22–28), and MPEG transport stream video and F4F flash video files were known types of container files." *Id.* (emphasis added) (citing Ex. 1003 ¶ 269).

With respect to retrieving a list of assets, Petitioner contends that one of ordinary skill in the art

> would have found it obvious to retrieve a list of assets using the playback server system because Lewis teaches that the manifest file server and rule resolution server generate a dynamic file manifest, and Lewis teaches that a dynamic manifest file contains a list of URLs to container files containing content.

> Ex. 1006, [0032]. In other words, because a manifest file is a file that contains a list of URLs that point to container files, a [person of ordinary skill in the art] would have found it obvious that the manifest file server and rule resolution server retrieve a list of assets because the manifest file server and rule resolution server ultimately produce a list of assets to the client device in the form of a manifest file. Ex. 1003 ¶270.

Pet. 62.

Patent Owner contends that this obviousness analysis "contravenes obviousness law because it fails to identify a reason to modify Lewis to arrive at the claimed invention." PO Resp. 31. Patent Owner correctly notes that Petitioner does not rely expressly on any specific teaching from Marusi to modify Lewis; rather, Petitioner's analysis is based upon Lewis alone. *See id.* ("Importantly, Petitioner does not argue that 'retrieving a list of assets' would have been obvious over Lewis in view of Marusi. Instead, Petitioner propounds a single-reference obviousness theory, arguing the missing limitation would have been obvious in view of Lewis alone."). Patent Owner asserts that "[t]he Petition, however, fails to provide evidence or argument concerning that crucial '*if*,' for it provides no rationale to modify Lewis to retrieve a list of assets."[15] *Id.*

---

[15] Although Petitioner does not argue in the Petition that Lewis *teaches* retrieving a list of assets, Patent Owner asserts that "no list of . . . processed video segments 315a-c is taught to be retrieved in Lewis or reasonably would be expected to be retrieved for Lewis to work as intended." PO Resp. 35 (citing Ex. 2016 ¶ 80). In its Reply, Petitioner responds to Patent Owner's assertion by pointing to stored video segments 375 as assets, not just processed video segments 315a–c. Pet. Reply 20 (citing Ex. 1003 ¶¶ 267–268; Ex. 1006 ¶¶ 27–29, Fig. 3; Pet. 61). In the Petition, Petitioner did not assert or rely upon stored video segments 375 as teaching the recited "assets" or "list of assets"; rather, Petitioner relied upon processed video segments 315a–c. *See* Pet. 61–62. Petitioner's attempt to assert, for the first

In its Reply, Petitioner contends that "[c]ontrary to [Patent Owner's] claim that Lewis does not teach a list and that there is no reason to modify Lewis' system ([PO Resp.] 30–32), the Petition and Dr. Reader clearly explain why lists and database operations would have been obvious to a [person of ordinary skill in the art]." Pet. Reply 20 (citing Pet. 62; Ex. 1003 ¶¶ 260–270, 235). Petitioner reiterates the position asserted in the Petition—that it would have been obvious to retrieve a *list* of assets because Lewis teaches that a dynamic manifest file contains a list of URLs to container files containing content. *Id.* Petitioner also contends that "Lewis itself explains that it was well-known that manifest files contain a list of media assets to be played." *Id.* (citing Ex. 1006 ¶ 20 (noting that "Manifest file 257 includes entries 258a through 258f"), Fig. 2 (noting that Figure 2 shows entries pointing to video segments)).

Fundamentally, Petitioner fails to provide *any reason* in the Petition as to why one of ordinary skill in the art would have found it obvious to retrieve a list of assets based on Lewis. Instead of providing a reason as to

---

time, in its Reply that processed video segments 375 also teach the recited "assets" is an improper reply argument. *See, e.g.*, Consolidated TPG at 74 ("Generally, a reply . . . may only respond to arguments raised in the preceding brief. . . . 'Respond,' in the context of 37 C.F.R. § 42.23(b), does not mean proceed in a new direction with a new approach as compared to the positions taken in a prior filing. . . . Examples of indications that a new issue has been raised in a reply include new evidence necessary to make out a *prima facie* case for the patentability . . . of an original . . . claim . . . ."); *see* PO Sur-reply 16–17 (discussing Petitioner's new argument). Petitioner's attempt to (1) rely upon stored video segments 375 to teach the recited assets and (2) assert that Lewis *teaches*, as opposed to rendering obvious, retrieving a list of assets are both new arguments that are inappropriately raised for the first time in Petitioner's Reply and, therefore, we disregard them.

why retrieving a list of assets would have been obvious, Petitioner points to a result achieved by Lewis—generating a dynamic manifest file that contains a list of URLs to container files containing content. In the context before us, pointing to a result to allege that a step in a process leading to the result would have been obvious is insufficient without also providing a reason with rational underpinning. *See KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.")). Here, Petitioner relies upon the result of Lewis's process—generating a dynamic manifest file containing a list of URLs—as the *only* basis as to why a previous step in the claim would have been obvious *without* providing any reason why the achieved result means the previous step would have been obvious.[16] Further,

---

[16] To the extent Petitioner relies upon its discussion of the combined teachings of Lewis and Marusi as set forth at the beginning of Petitioner's discussion of this ground (*see* Pet. 51–53), that portion of the Petition does not provide an additional reason why retrieving a list of assets as recited in limitation 1[d] would have been obvious simply because Lewis generates a list of assets. In that discussion, Petitioner argues that

> [b]ecause storing and tracking different representations of the same multimedia content using lists or a database was well-known, Lewis assumes that a [person of ordinary skill in the art] has such knowledge and does not explicitly describe these basic implementation details. Marusi is an example of a reference that does describe such techniques.

Id. at 52 (citing Ex. 1006 ¶ 14). As stated there, Petitioner acknowledges that Lewis does not describe these details. Yet, despite seemingly turning to Marusi for "such techniques" in that general discussion, Petitioner neither expressly states how Marusi teaches using lists nor argues or explains how

although Petitioner cites to Dr. Reader's declaration (Ex. 1003 ¶ 270), Dr. Reader's testimony does not provide any further explanation or reason as to why this aspect of limitation 1[d] would have been obvious. Dr. Reader mentions that Lewis's rule resolution server may include a rule that rewrites the URLs within a manifest file to point to the content delivery network in closest proximity to the client device, but this statement appears to support the position that a manifest file contains a list of URLs. Ex. 1003 ¶ 270. That example, however, does not provide a reason why it would have been obvious to retrieve a list of assets, wherein each asset is a different stream associated with the piece of content, as recited by limitation 1[d]. Thus, Petitioner's argument that it would have been obvious to retrieve a list of assets in light of Lewis is not supported sufficiently on the record before us.

c. Dependent Claims 2–6, 8–10, and 13

Petitioner contends that the combination of Lewis and Marusi would have rendered the subject matter of claims 2–6, 8–10, and 13 obvious to one of ordinary skill in the art. Pet. 69–76. Claims 2–6, 8–10, and 13 depend from claim 1 and, therefore, include limitation 1[d], discussed above. Accordingly, for the same reasons discussed with respect to claim 1, Petitioner's analysis of these claims suffers from the same deficiency.

d. Weighing the Graham *Factors*

"Once all relevant facts are found, the ultimate legal determination [of obviousness] involves the weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan."

Marusi's alleged use of lists impacts the analysis of limitation 1[d] (especially when Petitioner's discussion of limitation 1[d] fails to rely upon or cite Marusi).

Arctic Cat, 876 F.3d at 1361. On balance, considering the record before us, Petitioner has not shown, by a preponderance of the evidence, that the subject matter of claims 1–6, 8–10, and 13 would have been obvious to one of ordinary skill in the art at the time of the invention.

IV. SECRET PRIOR ART AND CONSTITUTIONALITY

Patent Owner raises several additional issues. First, Patent Owner contends that neither Pyle nor Lewis was patented or published prior to the '515 patent's effective filing date and therefore neither reference should not be considered "prior art consisting of patents or printed publications" pursuant to 35 U.S.C. § 311(b). PO Resp. 60–62. This argument is akin to arguing that Pyle and Lewis are secret prior art. The Board has recognized that, under current precedent of the U.S. Court of Appeals for the Federal Circuit, these references are considered prior art and we decline to address the issue further. *See, e.g.*, *Lenovo Holding Co. v. DoDots Licensing Sols. LLC*, IPR2019-01279, Paper 37 at 33 (PTAB Jan. 5, 2021) (declining to address patent owner's argument on secret prior art).

Second, Patent Owner raises two Constitutional arguments relating to the Board's ability to render a decision in this proceeding including: (1) that the Board's organization, including its incentive and fee structure, violates due process and the right to an impartial, disinterested tribunal; and (2) that the Board was unconstitutionally appointed. *Id.* at 62–63. We also decline to address Patent Owner's constitutional challenge except to note that the constitutionality of the appointments of the Administrative Patent Judges was addressed by the U.S. Supreme Court in *United States v. Arthrex, Inc.*, 141 S. Ct. 1970, 1986–87, 1997 (2021).

V. SUMMARY

For the reasons discussed above, Petitioner has demonstrated, by a preponderance of the evidence, that claims 16, 17, and 19 are unpatentable, but Petitioner has not demonstrated, by a preponderance of the evidence, that claims 1–6, 8–10, 13, and 14 of the '515 patent are unpatentable.

Our conclusions regarding the Challenged Claims are summarized below:

Claims Challenged	35 U.S.C. §	Reference(s) /Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 4, 5, 8–10, 14, 16, 17, 19	103(a)	Pyle, Marusi	16, 17, 19	1, 4, 5, 8–10, 14
1–6, 8–10, 13	103(a)	Lewis, Marusi		1–6, 8–10, 13
Overall Outcome			16, 17, 19	1–6, 8–10, 13, 14

VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 16, 17, and 19 of U.S. Patent No. 9,998,515 B2 ("the '515 patent") are determined to be unpatentable;

FURTHER ORDERED that claims 1–6, 8–10, 13, and 14 of U.S. Patent No. 9,998,515 B2 are not determined to be unpatentable; and

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

For PETITIONER:

Harper Batts
Jeffrey Liang
Chris Ponder
SHEPPARD, MULLIN, RICHTER & HAMPTON LLP
HBatts@sheppardmullin.com
CPonder@sheppardmullin.com
JLiang@sheppardmullin.com

For PATENT OWNER:

Kenneth J. Weatherwax
Bridget Smith
Flavio Rose
Edward Hsieh
Parham Hendifar
Patrick Maloney
LOWENSTEIN & WEATHERWAX LLP
weatherwax@lowensteinweatherwax.com
smith@lowensteinweatherwax.com
rose@lowensteinweatherwax.com
hsieh@lowensteinweatherwax.com
hendifar@lowensteinweatherwax.com
maloney@lowensteinweatherwax.com