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Paper 50
Dated: June 10, 2026

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STINGRAY GROUP INC. and STINGRAY MUSIC USA, INC.,
Petitioner,

v.

EDWIN A. HERNANDEZ-MONDRAGON,
Patent Owner.

IPR2025-00350
Patent 10,524,002 B2

Before TERRENCE W. McMILLIN, JASON M. REPKO, and BRIAN P. MURPHY, *Administrative Patent Judges*.

REPKO, *Administrative Patent Judge*.

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

I. INTRODUCTION

Stingray Group Inc. and Stingray Music USA, Inc. (collectively, "Petitioner") filed a petition (Paper 1, "Pet.") requesting *inter partes* review of claims 1–13 of U.S. Patent No. 10,524,002 B2 (Ex. 1001, "the '002 patent").

On June 13, 2025, we instituted an *inter partes* review of all challenged claims based on all grounds in the Petition. Paper 18. Patent Owner filed a Response. Paper 33 ("PO Resp."). Petitioner filed a Reply. Paper 39 ("Reply"). Patent Owner filed a Sur-reply. Paper 40 ("Sur-reply"). An oral hearing was held on March 12, 2026. A transcript of that hearing has been entered into the record. Paper 49 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued under 35 U.S.C. § 318(a). For the reasons that follow, Petitioner has not shown by a preponderance of the evidence that claims 1–6 and 13– of the '002 patent are unpatentable and has shown that claims 7–12 of the '002 patent are unpatentable.

A. Related Matters

According to the parties, the challenged patent has been asserted in *Hernandez v. Stingray Group, Inc.*, No. 1:24-cv-21226 (S.D. Fla. Apr. 2, 2024). Pet. 5; Paper 4, 2 (Mandatory Notices).

B. The '002 patent

The challenged patent generally relates to cloud-based delivery of multimedia content to cable or satellite providers. Ex. 1001, 1:19–21. A cable or satellite provider can request a media stream from a cloud service for playback on a broadcast-media channel. *Id.* at 2:58–67. Before providing

the media stream, the system generates multimedia files in a format that is compatible with the content provider. *Id.* To create the file, the system can generate a sequence of screen captures of a webpage. *Id.* at 7:24–26. When all the screens are captured, the resulting video file can be merged with the original file. *Id.* at 7:26–29.

C. Claims

Of those challenged, claims 1, 4, 7, and 13 are independent. Claim 1 is reproduced below.

> A computer-implemented method, comprising:
>
> receiving, from a content provider, a request for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different types;
>
> obtaining content corresponding to the plurality of multimedia items from at least one source offering the content in at least one first format;
>
> rendering a web page by a browser using the content;
>
> generating a temporal sequence of screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;
>
> assembling the at least one media stream using the temporal sequence of screen captures; and
>
> providing the at least one media stream to the content provider for broadcast on the broadcast media channel;
>
> wherein the at least one media stream corresponds to at least one of an HTTP live stream (HLS), an HTTP playlist, and a Real-time Streaming Transport (RTSP) stream; and
>
> wherein the web page is rendered in parallel in multiple threads.

Ex. 1001, 14:50–15:6.

D. Evidence

Name	Reference	Exhibit No.
Avellan	U.S. Patent No. 8,954,600 B2 to Avellan, filed on Mar. 2, 2012, issued on Feb. 10, 2015	1003
Ma	U.S. Patent Application Publication 2014/0150019 A1 to Ma, published on May 29, 2014	1004
Fain	Yakov Fain, "Java Programming 24-Hour Trainer"	1005
Wannamaker	U.S. Patent Application Publication No. 2004/0031052 A1 to Wannamaker, published on Feb. 12, 2004	1006

E. Asserted Grounds

Petitioner asserts that claims 1–13 are unpatentable on the following grounds. Pet. 3.

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–6, 13	103	Avellan
1–6, 13	103	Avellan, Ma, Fain
7–9, 11, 12	102	Wannamaker
10	103	Wannamaker, Avellan

II. ANALYSIS

A. Level of Ordinary Skill in the Art/Claim Construction

According to the Petition,

> Here, a Person of Ordinary Skill in the Art ("POSITA") at the time of the claimed invention would have a bachelor's or equivalent degree in computer science or a related field and at least 2 years of experience in multimedia processing or delivery using internet protocols. . . . A person with less formal education

> but more experience, or more formal education but less experience, could also meet the standard.

Pet. 19 (citing Ex. 1007 ¶¶ 68–69).

Patent Owner submits a similar definition and does not take issue with the Petition's characterization of the level of ordinary skill in the art. PO Resp. 17.

We determine that no express finding is necessary and that the level of ordinary skill in the art is reflected by the prior art of record. Any perceived difference in how each party characterizes a POSITA's education, knowledge, and work experience does not change our analysis or conclusions.

Neither party has offered any claim construction arguments, relying on ordinary and customary meaning. Pet. 19–20; PO Resp. 18. We determine that construction of claim terms is not necessary to resolve the disputes raised by the parties in this proceeding.

B. Avellan

1. Claim 1

In the first ground, Petitioner argues that independent claim 1 is unpatentable as obvious in view of Avellan. Pet. 3, 20–32.

Claim 1 recites, in relevant part,

> [1c] rendering a web page by a browser using the content;
>
> [1d] generating a temporal sequence of screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;
>
> [1e] assembling the at least one media stream using the temporal sequence of screen captures . . . .

Ex. 1001, 14:58–65 (Petitioner's numbering added); *see* Pet. vii.

a. Petitioner's Arguments

According to the Petition, "Avellan discloses that the requested media stream includes a plurality of multimedia items of different types" because,

> Avellan discloses that the media stream includes a plurality of multimedia items of different types noting that "there can be a number of broadcast channels and each channel can have a specific theme, such as country music, military television, etc." Ex-1003, 8:25–27. "The user can then tune the browser 106 to one of the broadcast channels to receive that content. Thus, the broadcast channel can be configured here to receive live content, or to update the storage device 110 of the user computer 104." *Id.*, 8:27–31. For instance, "[i]f a large number of viewers choose to select a certain hockey game, that page of the website can also be sent in the broadcast mode." *Id.*, 8:34–36. Avellan teaches that "suitable sites for the broadcast mode are news sites like CNN, BBC, newspaper, live streaming television feeds, movies, music downloads, or ESPN." *Id.*, 8:18–21.

Pet. 23. So, according to the Petition, Avellan's content from a broadcast channel, such as a hockey game, corresponds to the claimed "multimedia items of different types." *Id.*

Petitioner argues that Avellan teaches limitation [1c] because Avellan's browser relies "upon the computing power and very high-speed connection of the gateway server 134 to resolve and render pages, images, and documents from the networks 150, 152." Pet. 26 (quoting Ex. 1003, 4:62–65). As for limitation [1d], Petitioner argues that "for content that includes playback of video, streaming information or animations, Avellan generates a temporal sequence of screen captures that will illustrate a dynamic change of at least a portion of that content over time" because gateway server 134 continuously captures images of the webpage until the detection of a repeating pattern. Reply 9 (citing Ex. 5:5–10); *see also* Pet. 26–28. As for limitation [1e], Petitioner argues that, after the screen-capture

process completes, Avellan compresses "the data into a compressed digital video format that can be sent to the user computer 104 for display in the browser 106." Pet. 28–29 (quoting Ex. 1003, 5:20–5:22). Petitioner argues that the claim does not exclude compressed files. *See* Reply 10–11.

b. Patent Owner's Response

Patent Owner argues that Avellan renders and generates a temporal sequence of screen captures from web pages but not the multimedia items on those pages, e.g. video. PO Resp. 21–23. Rather, Patent Owner points out that the compressed video created from the screen-capture process is associated with a tag file. *Id.* at 14. Patent Owner notes, "The tag file is preferably transmitted to the user computer 104 with the compressed video data, so that the information is synchronized." *Id.* at 15 (quoting Ex. 1003, 13:55–57). In Patent Owner's view, "a POSITA would understand that [limitation [1e]] recites more than transmitting or displaying individual media items." PO Sur-reply 20.

c. Analysis

We are persuaded by Patent Owner's argument that claim 1 is not obvious over Avellan because it does not assemble a media stream of multimedia items using the recited screen captures. *See* PO Resp. 21–23. We agree with Patent Owner that the plain language of the claim requires more than transmitting individual media items. PO Sur-reply 20. To the extent that Avellan captures images, those images do not meet the claimed requirements for a "temporal sequence of screen captures" in the independent claims, which must (1) be of the web page rendered by a browser, (2) "define all the content of the web page at a given time," (3) "illustrate a dynamic change of at least a portion of the content over time" when two of them are compared,

and (4) used to assemble "the at least one media stream." Rather, the record better supports Patent Owner's argument that Avellan transmits the multimedia items separate from any media stream assembled from screen captures. PO Resp. 21–23; PO Sur-reply 20.

Considering all the arguments and evidence, Avellan does not work in the way that the Petition describes. Under Petitioner's mapping, Avellan's broadcast-channel content, such as a hockey game, corresponds to the claimed "multimedia items of different types" in [1a]. *See* Pet. 23–24; *see supra* Section II.B.1.a. As for limitation [1d], Petitioner argues that Avellan continuously captures screen images that depict the live action of a hockey game:

> By continuously capturing screen images of information that is rendered over time—such as "video, streaming information, or an animated display"—two adjacent screen captures will illustrate a dynamic change of at least a portion of the content over time. Ex-1007, ¶122. For example, if a streaming hockey game is being rendered, a screen capture at Time 1 followed by a screen capture at Time 2 will illustrate a dynamic change in that game, such as the movement of players over time—*i.e.*, a dynamic change of at least a portion of the content over time. *Id*.

Pet. 28. For this argument, Petitioner does not cite to any part of Avellan in support. *See id.* Instead, Petitioner cites to paragraph 122 of Mr. Lipoff's declaration as the sole basis for this argument. *Id.*

Yet paragraph 122 of Mr. Lipoff's declaration merely repeats the Petition's argument almost verbatim. *Compare* Ex. 1007 ¶ 122, *with* Pet. 28. Mr. Lipoff does not add any citation to Avellan or any other source that supports his testimony. *See* Ex. 1007 ¶ 122. Nor does Mr. Lipoff offer any additional technical reasoning than what is stated in the Petition. Testimony may be entitled to little weight if it merely restates the petition's

unsupported, conclusory assertions without adding supporting evidence or technical reasoning. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022) (precedential). That is the case here.

Also, Mr. Lipoff's testimony and Petitioner's argument appear to be based on a misreading of the relevant parts of Avellan. Specifically, Avellan discusses the hockey game in column 8. Petitioner relies upon this embodiment in its challenge. *See, e.g.*, Pet. 23–24 (citing Ex. 1003, 8:25–27; 8:27–31; 8:34–36; 8:18–21). But, contrary to Petitioner's arguments and Mr. Lipoff's testimony, this embodiment does not discuss capturing the live action of a hockey game. Rather, Avellan describes sending game scores:

> For instance, the main page of ESPN presents the same information to all viewers, which may *include scores of hockey games and basketball games*. If a large number of viewers choose to select a certain hockey game, that page of the website can also be sent in the broadcast mode. On the other hand, if the user desires information which is not frequently viewed (such as about high school sports on ESPN), that information will be delivered to the computer 104 in the unicast mode and optionally stored at the storage device 110 of that computer 104.

Ex. 1003, 8:32–41 (emphasis added). Here, Avellan is describing the "main page of ESPN" presenting information to "viewers." *See id.* Avellan states that the main page includes game scores, not live games. *Id.*

The paragraph refers to "broadcast mode," which is not restricted to live-action streaming. *See* Ex. 1003, 8:32–41. Rather, broadcast mode "is used to send the same information to a wide number of user computers 104." *Id.* at 8:14–15. "[T]he broadcast data is intended to include the most frequently visited and/or graphics-intensive web pages, but less specifically customized information." *Id.* at 8:14–19. Although the system can provide live television feeds, Avellan expressly teaches that broadcast mode can be

used for frequently visited websites—like a main page that displays scores. *See id.* at 8:14–21, 8:32–41. In sum, Mr. Lipoff's testimony (Ex. 1007 ¶ 122) and Petitioner's corresponding argument (*see, e.g.*, Pet. 28) misread Avellan's description of a web page showing hockey scores as a web page showing a live hockey game. Thus, we disagree with Petitioner's argument that Avellan teaches limitation [1d] by capturing screens of a hockey game. Pet. 28. Rather, the record better supports Patent Owner's argument that Avellan is referring to images of web pages. *See, e.g.*, Sur-reply 13 (citing Ex. 1003, 8:19–21).

Petitioner also points to the description in column 4 of Avellan to support its argument that "Avellan teaches generating screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time." Pet. 26–27 (citing Ex. 1003, 4:65–5:4).

Patent Owner correctly points out that there is no explanation of "how the audio is mapped to the screen captures." Sur-reply 21. That is, in the cited paragraph, the term "images," as used by Avellan, is broader than simply capturing an image of a website rendered on the screen. For example, Avellan explains, "The gateway server 134 then *images* those web pages (which are typically in an HTTP format) to a video or image frame format." Ex. 1003, 4:65–67, *cited in* Pet. 26–27. Here, Avellan means video or image format when it discusses how it "images" the webpage. *See id.*

If Avellan is simply storing the video on the page when it "images" or "captures" the webpage, then Petitioner has not sufficiently shown how Avellan teaches or suggests "assembling the at least one media stream using the temporal sequence of screen captures," as recited in [1e]. We agree with Patent Owner that the plain language of [1e] requires more than just transmitting individual media items. Sur-reply 20. If the claim encompassed

simply transmitted the video, for example, then it is unclear what would need to be "assembled" in [1e] because the video would already exist in an assembled state. Under this reading, there would be no difference between the "media stream" in [1e] and screen captures that the stream is assembled from in [1d], and the step of "assembling" would have no meaning at all. Thus, we agree with Patent Owner's argument that compressing a video and storing it does not meet the assembling recited in [1e]. PO Resp. 29.

The cited parts of Avellan (*see, e.g.*, Pet. 26–27 (citing Ex. 1003, 4:65–5:4); Pet. 29–30 (citing Ex. 1003, 5:12–5:15; 5:20–22); Reply 9–10 (citing Ex. 1003, 5:5–5:10)) at most suggest that the imaging process somehow collects the data on the webpage (e.g., audio) and stores it in a compressed format. This is very different from Petitioner's view that Avellan is taking screen captures of live streamed video (*see, e.g.*, Tr. 7:17–23), such as a hockey game (Pet. 28). Thus, Petitioner has not sufficiently shown how Avellan assembles a stream from the sequence of screen captures, as limitation [1e] requires. *See* Pet. 28–29.

During the oral argument, Petitioner again argued that Avellan is "taking a series of screen captures for moving content such as video or live-streaming, . . . saving a series of those screen captures. . . [a]nd then transmitting that as a broadcast." Tr. 7:17–23. Petitioner was asked to identify any support from Avellan for this argument. *See, e.g.*, *id.* at 9:12–15; 12:6–8; 15:19–24. Petitioner pointed to the paragraph appearing in column 5 of Avellan. *See id.* at 14:12–22. Petitioner relies on this paragraph in addressing limitation [1d] for generating the temporal sequence (Pet. 27–28 (citing Ex. 1003, 5:5–12)) and limitation [1e] for assembling the stream (Pet. 28–29 (citing Ex. 1003, 5:12–15).

The cited paragraph from column 5, though, is silent with respect to how a video appearing on the webpage is captured:

> In addition, web pages often have information which is rendered over a period of time, such as a video, streaming information, or an animated display. Accordingly, the gate way server 134 continuously *captures images* of the web page until it detects a repeating pattern of information in the web page. Thus, the gateway server 134 will be certain to capture all the information on the web page even if that information continues over a period of time. Once the page is *imaged (including any audio on the web page)*, the gateway server 134 compresses the image or video frame format and sends it to the browser 106 via the satellite 102.

Ex. 1003, 5:5–15 (emphasis added). As in Avellan's fourth column, discussed above, Avellan here uses the term "image" in the broad sense to describe capturing data, including audio, not just creating an image-frame format. *See id.* Avellan explains that it converts the "HTTP code to an image frame format" (*id.* at 5:30) but, for the other items, "any suitable technique can be used" (*id.* at 5:25–32). We see no support for Petitioner's argument that Avellan is taking a series of screen captures of streaming video. Tr. 7:17–23.

To the contrary, the rest of Avellan suggests that taking a series of screen captures of moving content would not be a suitable technique. For example, Avellan contrasts "websites" with "movies." *See* Ex. 1003, 14:60–64. Avellan explains that "movies can be broadcast to user computers 104." *Id.* at 14:63–64. Likewise, Avellan describes that video-related services require additional requirements that are not present in webpages:

> It will be apparent that the virtual browser 106 can be any software application which can display the received video frame data to look like the web page is actually being displayed in a browser. The gateway servers 134 *may also be configured to*

> *handle other computational requirements of multimedia and video related services accessed by users*.

Id. at 6:55–60. This aligns better with Patent Owner's argument that Avellan transmits individual media items (Sur-reply 20) because the passage states that these video-related services are met by "other computational requirements" (Ex. 1003, 6:55–60).During the oral hearing, Patent Owner suggested that Avellan may transmit the multimedia items such as video could be transmitted as "tag files." *See* Tr. 60:17–61:6. Patent Owner's tag-file theory is better supported than Petitioner's explanation because Avellan describes tag files as a way to transfer selectable fields or "other items which may require user interaction," such as buttons, links, scroll bars, or other items. *See* Ex. 1003, 5:33–52. Transmitting streaming video would appear to meet this if streaming video files had playback buttons or scroll bars for the user to interact with, for example. If that is indeed the case, transmitting the video as a separate tag file would not meet limitations [1d] or [1e] because the stream must be assembled from the screen captures—not separate tag files. Avellan's discussion of tag files further undermines Petitioner's argument because it shows that Avellan has other ways to transmit the media file apart from capturing a screen in image format that is then assembled to a media stream. *See id.* For this additional reason, the evidence does not support Petitioner's explanation of how Avellan operates.

Petitioner argues that Patent Owner solely relies on an expert report authored by the Patent Owner himself, Dr. Edwin Hernandez, who is not an unbiased or independent expert. Reply 1–4. We do not rely on any part of the Dr. Hernandez's Declaration in our analysis of claim 1. The Board is capable of resolving the issues without it because Avellan's disclosure

simply does not support Petitioner's arguments for all the reasons discussed above.

Thus, Petitioner has not shown that Avellan teaches or suggests the "temporal sequence of screen captures" recited in [1d] or [1e] in claim 1 and has not met its burden to show that claim 1 is unpatentable as obvious in view of Avellan.

d. Claims 2–6 and 13

Independent claim 13 recites a method with the steps of "generating a temporal sequence" and "assembling the at least one media stream" similar to the generating and steps recited in claim 1. Petitioner's challenge to claim 13 relies on the same reasoning from the challenge to claim 1. *See, e.g.*, Pet. 37–38 (arguing that "Avellan teaches this element as shown in [1d] . . . Avellan teaches this element as shown in [1e].").

Claims 2–6 require the "generating" and "assembling" operations because they depend from claim 1. Petitioner does not present any additional reasoning that addresses the deficiency in the challenge to claim 1. *See* Pet. 32–36. Because Petitioner has not shown that Avellan teaches or suggests the limitations recited in claim 1, Petitioner has not met its burden to show that claims 2–6 and 13 are unpatentable as obvious over Avellan.

C. Avellan, Ma, Fain

Petitioner argues that claims 1–6 and 13 are obvious in view of Avellan, Ma, and Fain. Pet. 40. As for limitations [1pre] through [1f], Petitioner argues that "[a]s discussed above in conjunction with Ground 1, Avellan discloses these limitations." *Id.* That is, Petitioner's argument that Avellan teaches or suggests limitations [1d] and [1e] in this ground depends on the reasoning and insufficiently supported characterizations of Avellan in the ground discussed above. *Id.* Petitioner does not rely on Ma, Fain, or any

additional rationale to support the contention that Avellan teaches or suggests limitations [1d] or [1e] . *Id.* For all the reasons discussed above, we disagree with Petitioner's analysis of Avellan as it relates to [1d] and [1e]. Thus, Petitioner has not met its burden to show that claim 1 is unpatentable in view of the asserted combination of references.

Independent claim 13 recites a method with the steps of "generating a temporal sequence" and "assembling the at least one media stream" similar to the generating and steps recited in claim 1. Petitioner's challenge to claim 13 relies on the reasoning from the challenge to claim 1. *See, e.g.*, Pet. 49 ("As discussed above in conjunction with Ground 1, Avellan discloses these limitations or renders them obvious."). Claims 2–6 require the "generating" and "assembling" operations because they depend from claim 1. Petitioner does not present any additional reasoning that addresses the deficiency in the challenge to claim 1. *See* Pet. 44–48. Thus, Petitioner has not met its burden to show that claims 1–6 and 13 are unpatentable as obvious over Avellan, Ma, and Fain.

D. Wannamaker

1. Claim 7

a. Limitation [7a][1]

Claim 7 recites, in part, "a *multicast* server configured to generate parameters relating to at least one of video content, image content and audio content, and configured to output the parameters via MPEG outputs." Ex. 1001, 15:41–45. (emphasis added).

[1] Here and throughout this analysis, we adopt the Petition's labels for claim 7's limitations. *See* Pet. ix.

Petitioner argues that "Wannamaker's application server includes 'the data carousel server for data formatting, and Multimedia Streamer (MMS) components for data transmission.'" Pet. 50 (quoting Ex. 1006 ¶ 169). According to Petitioner, "Wannamaker which includes the data carousel server is a multicast server and includes the MMS components for data Transmission," and "[t]he out-of-band servers of the MMS can '*multicast* to a group of set-top boxes.'" *Id.* (citing Ex. 1006 ¶¶ 169, 175, 181, 229–232). Also, Petitioner argus that the transcoded content is inserted into a "multicast files system." *Id.* (citing Ex. 1006 ¶ 490).

Patent Owner argues that "what Wannamaker discloses is the use of an MMS Module that connects to DRM module that uses OM1000 [Motorola's] 'MPEG-2/Digital Out of Band Modulator.'" PO Resp. 42. Patent Owner argues that (1) none of these are a multicast server, (2) "OM1000 Motorola can only receive a multicast" as part of a "Quadrature Phase Shifting Keying (QPSK)," not generate multicast, and (3) "the manual shows that a keypad command is needed, not a keyboard or a terminal, as a 'server' requires." *Id.*

Patent Owner argues that Wannamaker's multicast unit can only receive multicast and suggests sending only MPEG frames with FBM and CPL content that are rendered again by the "TV Navigator." Sur-reply 25. According to Patent Owner, Wannamaker's "MMS unit only supports intake from a multicast or a client, and cannot generate a multicast as a multicast server," and "Wannamaker transcodes HTML and images to MML instead." *Id.* 4–5.

Patent Owner's arguments are not supported by Wannamaker because Wannamaker clearly states that "[t]he data may be: . . . Multicast to a group of set-top boxes." Ex. 1006 ¶ 231. Here, Wannamaker is referring to the

server that "communicates with specialized hardware to deliver out-of-band data, such as updates to the set-top box internal data store." *Id.* ¶ 228. Also, Wannamaker discloses that "transcoded content is . . . inserted into the multicast file system for use by the microbrowser" (*id.* ¶ 490). Thus, Petitioner has shown that Wannamaker teaches "a multicast server configured to generate parameters relating to at least one of video content, image content and audio content, and configured to output the parameters via MPEG outputs." Pet. 50.

Patent Owner's attempt to distinguish Wannamaker's disclosure on the basis of QPSK or manual keypad commands are not commensurate with claim 7 because the claim does not recite or require QPSK or keyboard commands. PO Resp. 42.

Petitioner has shown that Wannamaker discloses the subject matter recited in [7a].

b. Limitation [7b] and [7c]

Claim 7 recites, in part, "[7b] a caching server communicatively coupled to the multicast server, and [7c] configured to receive and store parameters." Ex. 1001, 15:46–48.

As for [7b], Petitioner argues that Wannamaker's "content processor 23 which is the 'caching server' is communicatively coupled to the application servers 24 (i.e., multicast server) which also has a cache manager 40." Pet. 54 (citing Ex. 1005 ¶ 99). As for [7c], Petitioner argues that "Wannamaker's content processor 23 is configured to receive and store parameters generated by the application server 24 as shown, for example, by the arrow between cache manager 40 and cache manager 37 in Figure 3." *Id.* at 55.

Patent Owner's argument focuses on encoding. PO Resp. 42–43. For example, Patent Owner acknowledges that Wannamaker's content processor 23 "is designed to provide content to" a set-top-box and Wannamaker discloses "parameters in relation to the TV Navigator resources fetched." *Id.* at 42–43. Patent Owner, however, argues that claim 7's parameters are "video and audio encoding parameters such as GoP (Group of Pictures), resolution, bit-rate in Kilobits per seconds, and encoders" and that the content provider does not handle any encoding. *Id.* at 43.

Patent Owner's argument is not commensurate with the scope of claim 7. *See* PO Resp. 42–43. The plain language of claim 7 only limits the parameters to those "relating to at least one video content." Ex. 1001, 15:46–48. Although the parameters are output via the MPEG outputs, the claim does not limit the parameters to the specific encoding parameters that Patent Owner argues. *See* PO Resp. 42–43. Even so, the '002 patent explains that the parameters include a resolution:

> At step 505, encoding flags or input parameters can be received which may include GOP (Group of Pictures) which is used by certain video encoders, *resolution (e.g. 640×480) in pixels*, bit rate in Kilobits per second, any encoding type of video (e.g. H.264), encoding type of audio (e.g. AC-3), duration of the video feed, etc. In addition, a "format" parameter can be received which refers to the output format or encapsulation, MPEG TS or MPEG4.

Ex. 1001, 6:35–39 (emphasis added). Thus, we agree with Petitioner that the parameters recited in claim [7c] at least encompass a resolution.

Like those disclosed in the '002 patent (*see id.*), Wannamaker's parameters received by the cache manager include resolution—i.e., those that ensure the MPEG stream output has the "same width as the TV screen" and "at least the height of the screen." *See* Ex. 1006 ¶ 264, *cited in* Reply 25.

For this reason, we agree with Petitioner that Wannamaker's disclosure here falls within the scope of claim 7.

Patent Owner also argues that Wannamaker lacks a multicast server, as recited, for the reasons discussed with respect to [7a]. Sur-reply 27. We disagree for all the reasons discussed in Section II.D.1.a.

Petitioner has shown that Wannamaker discloses the subject matter recited in [7b] and [7c].

c. Limitation [7d] and [7e]

Claim 7 recites, in part, "[7d] create a temporal sequence of screen captures of a rendered web page, where each said screen capture defines content of the rendered web page at a given time, and at least two adjacent screen captures in the temporal sequence illustrate a dynamic change of at least a portion of the video content, image content or audio content over time, [7e] assemble the temporal sequence of screen captures." Ex. 1001, 15:49–16:5.

Petitioner argues that "Wannamaker discloses capturing a temporal sequence of screen captures with respect to an animated GIF in separate frames as claimed." Pet. 58 (citing Ex. 1006 ¶¶ 263, 275). According to the Petition, "To accomplish the creation and assembly of the claimed temporal sequence of screen captures, Wannamaker discloses use of MPEG I-frames and P-frames." *Id.* at 59 (Ex. 1006 ¶¶ 264, 271).

Patent Owner argues that, in Wannamaker, "there is no need to create a 'temporal [sequence] of screens' as simply the TV Navigator [operates] using CPML, MML, as Laptops use Safari and Chrome with HTML." PO Resp. 43–44. As for limitation [7e], Patent Owner argues that "there is no need to 'assemble' a media stream with screen captures, as the MPEG packets received by the TV Navigator embedded MML and CPML markup

languages, or text files referencing content." *Id.* at 44. According to Patent Owner, "A POSITA would understand that Wannamaker does not teach, suggest, or disclose 'creating a temporal sequence of screen captures of a rendered webpage' and in fact, teaches away from it, as Wannamaker's transcoder makes the rendering take place at the TV Navigator in FBML/MML and [CMPL] formats." Sur-reply 28.

Patent Owner does not give sufficient weight to Wannamaker's disclosure that "if there is an animated GIF on the same page, with a URL of http://www.liberate.com/images/anim.gif, it is rendered as separate frames into the /prefix/www.liberate.com/images/anim.gif/directory." Ex. 1006 ¶ 275, *cited in* Reply 26; *see also* Pet. 58 (citing Ex. 1006 ¶ 275). That is, Wannamaker's disclosure of separately rendered frames of the GIF animation (Ex. 1006 ¶ 275) indicates that there is a "need to create a 'temporal [sequence] of screens'" and Wannamaker does not teach away from this, contrary to Patent Owner's argument (PO Resp. 43–44; Sur-Reply 28).

Limitation [7e] recites "assemble the temporal sequence of screen captures," not assemble a media stream, as Patent Owner argues. *See* PO Resp. 44. Rather, the "media stream" is provided by the system, as recited in [7f]. So, to the extent that Patent Owner's argument depends on assembling a media stream (*id.*), that argument is not commensurate with the scope of the claim.

As for the assembled temporal sequence of screen captures, Wannamaker's "server puts images of the rendered Web page in MPEG I-frames and MPEG P-frames." Ex. 1006 ¶ 271, *cited in* Pet. 19. This contradicts Patent Owner's argument that Wannamaker has no need for assembly using screen captures because Wannamaker's screen captures are

assembled as MPEG frames. *See* Ex. 1006 ¶ 275. The record better supports Petitioner's argument that "[t]o accomplish the creation and assembly of the claimed temporal sequence of screen captures, Wannamaker discloses use of MPEG I-frames and P-frames." Pet. 59.

Petitioner has shown that Wannamaker discloses the subject matter recited in [7d] and [7e].

d. Limitation [7f]

Claim 7 recites, in part, "provide at least one of the video content, image content and audio content to the multicast server for generating a multicast stream with MPEG encoded video and audio." Ex. 1001, 16:6–9.

Petitioner argues that "[t]he application servers 24 of Wannamaker is provided with at least one of video content, image content and audio content for generating a multicast stream with MPEG encoded video and audio." Pet. 60.

For limitation [7f], Patent Owner relies on an argument similar to the one presented for [7a]: Wannamaker does not generate multicast streams, but in fact, teaches away from them. PO Resp. 44.

We disagree with Patent Owner's argument for all the reasons discussed in Section II.D.1.a. Rather, Petitioner's argument that Wanamaker generates a multicast stream is sufficiently supported. For example, "Wannamaker discloses that '[t]he downstream communication, from server to set-top box delivers an MPEG transport stream containing *MPEG video*, *MPEG audio*, and data via a specialized hardware multiplexer card." Pet. 60 (quoting Ex. 1006 ¶ 117) (emphasis in original).

Petitioner has shown that Wannamaker discloses the subject matter recited in [7f].

e. Limitation [7g]

Claim 7 recites, in part, "a monitoring system configured to maintain generation of video and audio files, even in failure cases." Ex. 1001, 16:10–11.

Petitioner argues that Wannamaker's operator-management interface provides fault tolerance that maintains "generation of video and audio files, even in failure cases," as claimed. Pet. 62–63 (citing Ex. 1006 ¶¶ 101, 103, 306, 320, 579).

Patent Owner argues, "Monitoring refers to the system of 'generation of video and audio files,' none of this can be disclosed by [Wannamaker] as the use of OMI or 'Open Management Interface' although refers to 'Redundancy' via fail over servers as shown by EX1007[2] at [0101] to [0103]." PO Resp. 45. According to Patent Owner, "The monitoring presented by Element 7[g] refers to maintaining the generation of video and audio files for the Multicast Stream, that is not present in Wannamaker hence cannot be disclosed." *Id.*

We disagree that Wannamaker lacks the generation of video and audio files aspect of the monitoring system. *See id.* Rather, Wannamaker uses a data carousel server to create objects in the Mediacast signaling protocol (MSP) format and uses the multimedia streamer (MMS) components to transport the MSP objects to a downstream network. Ex. 1006 ¶ 174. According to Wannamaker, the system detects "fatal faults" and restarts itself without human intervention. *Id.* ¶ 320. The network also has redundant components. *Id.* ¶ 103. If one of Wannamaker's servers fails, transactions

[2] Exhibit 1006 is Wannamaker and paragraphs 101 and 103 discuss the servers. Exhibit 1007 is the Lipoff declaration. So here, we understand Patent Owner to be referring to Wannamaker.

are routed to another. *Id.* ¶ 101; *see also id.* ¶ 103 (discussing "failover support").

Patent Owner does not give sufficient weight to Wannamaker's redundancy and failover support. *See* Ex. 1006 ¶¶ 101, 103, *cited in* Pet. 62. In fact, Wannamaker explains that system availability is "high" and the servers' performance can be "maximized":

> Fault tolerance is an important aspect of any online *high-availability system.* The information platform is configured to handle many types of system failures—both software and hardware. . . . Note that the application server also includes the ability to load-balance between active servers so that, in addition to failover support, the servers in a cluster can be *maximized for increasing overall performance*. The network itself may also be configured with redundant network components, such as duplicate switches and interface adapters. As a result of the multiple layers of redundancy, the total system presents very *high availability* to its users.

Ex. 1006 ¶ 103 (emphasis added), *quoted in* Pet. 63. Thus, Petitioner has shown that Wannamaker discloses "a monitoring system configured to maintain generation of video and audio files, even in failure cases."

As for the multicast stream, we disagree with Patent Owner's argument about that limitation (PO Resp. 45) for all the reasons discussed in Section II.D.1.a regarding limitation [7a].

Patent Owner also argues that and "Wannamaker does not disclose the use of a 'Software features' that suffer failures, nor any entity that resemble the 'Mediamplify Parallel Encoder.'" PO Resp. 45. But Patent Owner's argument here is not commensurate with the scope of claim 7. Claim 7 does not recite a "Mediamplify Parallel Encoder." Nor is it apparent from Patent Owner's arguments that such an encoder is required by any of the

limitations. Thus, we disagree that the "Mediamplify Parallel Encoder" is a basis for distinguishing Wannamaker.

Petitioner has shown that Wannamaker discloses the subject matter recited in [7g].

2. Claim 8

Claim 8 recites, "The system according to claim 7, further comprising multiple servers for load balancing and fault-tolerance." Ex. 1001, 16:13–14.

Petitioner argues that Wannamaker uses multiple servers for load balancing and fault-tolerance because Wanamaker states "many servers as necessary can be used to meet the *load-balancing* requirements of the service," among other reasons. Pet. 64 (quoting Ex. 1004 ¶ 101).

Patent Owner argues that "Wannamaker [uses] servers for a media stream, instead Petition points to a Motorola OC1000 box that is not a server." PO Resp. 45.

We disagree that Wannamaker lacks a multicast server (PO Resp. 45) for all the reasons discussed in Section II.D.1.a. As for the load balancing, Wannamaker fully explains how multiple servers are used for load balancing and fault-tolerance in its section on server scalability, which is not disputed. *See* Ex. 1006 ¶¶ 101, 103 *quoted in* Pet. 64. Thus, Petitioner has shown that Wannamaker teaches or suggests the subject matter recited in claim 8.

3. Claim 9

Claim 9 recites, "The system according to claim 7, wherein the multicast server is selected to communicate a multicast stream available for a broadband network." Ex. 1001, 16:15–17.

Petitioner argues that Wannamaker discloses a server that communicates a multicast stream for the reasons discussed in connection with limitation [7a]. Pet. 65. Petitioner also argues Wannamaker's Figure 5

shows "the multicast stream from the application servers is available for a broadband network." Pet. 65 (citing Ex. 1006 ¶ 122).

Patent Owner argues that Wannamaker does not use a broadband network, such as DSL or MPLS. PO Resp. 45–46. Patent Owner argues that Wannamaker's output is "RF or CATV that is labeled as 'analog.'" *Id.* Patent Owner argues that "Wannamaker MMS's 'Green Arrow' server provides an output to the QAM Upconverter or modulator in 'Blue Arrow,'" and upconverting "to a 'broadband network' requires more equipment not presented in Wannamaker." *Id.*

We agree with Petitioner that Wannamaker's Figure 5 shows the multicast server is selected to communicate a multicast stream available for a broadband network because Wannamaker shows broadband feed 150 for the content. *See* Ex. 1006, Fig. 5, ¶ 122.

Wannamaker need not disclose all the equipment required to accomplish this. All the claim requires is "wherein the multicast server is selected to communicate a multicast stream available for a broadband network," not the specific hardware for upconverting, as Patent Owner argues. PO Resp. 45–46. Wannamaker discloses a multicast server for all the reasons discussed in Section II.D.1.a. Thus, Petitioner has shown that Wannamaker discloses the subject matter recited in claim 9.

4. Claim 11

Claim 11 recites, "The system according to claim 7, wherein the system generates audio MPEG files and add metadata in an MPEG frame." Ex. 1001, 16:21–23.

According to the Petition, "Wannamaker discloses that the system generates audio MPEG files" because Wannamaker's downstream communication contains MPEG video and audio, Wannamaker uses a

MPEG card (LMC), and "[i]t is well known to a POSITA that MPEG-2 is a standard that has been around since 1995 and includes a transport stream with video, audio and data streams." Pet. 66. Also, Petitioner points to the analysis presented in connection with [7f]. *Id.* Petitioner further argues that Wannamaker's system adds metadata in an MPEG frame. *Id.* at 66–67.

Patent Owner argues that Petitioner has not shown that claim 11 is unpatentable because "Claim 7 is not anticipated by Wannamaker." PO Resp. 46.

We determine that Petitioner has sufficiently shown that Wannamaker's system generates audio MPEG files for reasons similar to those discussed in connection with [7f]. *See supra* Section II.D.1.d. Also, Petitioner's arguments about the video files are sufficiently supported by Wannamaker for at least the reason that Wannamaker discloses the stream contains MPEG video, MPEG audio, and data. Ex. 1006 ¶ 117. Thus, Petitioner has shown that Wannamaker discloses the subject matter recited in claim 11.

5. Claim 12

Claim 12 recites, "The system according to claim 7, wherein the system generates MPEG metadata that is interacted with two way broadcast TV systems." Ex. 1001, 16:23–26.

Apart from the arguments analyzed above, Patent Owner does not present separate arguments directed to the remaining limitations in claim 12. *See* PO Resp. 41–46; Sur-reply. Even so, Petitioner has the burden to show that the challenged claims are unpatentable. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). Petitioner has met this burden. Specifically, we agree Wannamaker explicitly discloses the use of the MPEG Transport Stream. Ex. 1006 ¶ 117, *cited in* Pet. 67; *see*

supra Section II.D.4. Also, Wannamaker uses microbrowsing rendering for set-top boxes. *See* Ex. 1006 ¶ 268.

Thus, Petitioner has shown by a preponderance of the evidence that claim 12 is unpatentable.

E. Wannamaker and Avellan

Claim 10 recites, "The system according to claim 7, wherein the video content is encoded in a video streaming format so as to generate a unicast stream." Ex. 1001, 16:17–20.

Petitioner argues that the subject matter of claim 10 is taught by the Wannamaker-Avellan combination. Pet. 70–71. Petitioner argues that "Wannamaker discloses generating a unicast stream noting that the out-of-band servers of the MMS can '*single-cast or "addressed" to a single set-top box*.'" *Id.* Petitioner also argues that Wannamaker encodes animated GIFs and sounds. *Id.* at 71. According to the Petition, "Avellan discloses a unicast mode" and a "POSITA would have found the encoding of video content to generate a unicast stream obvious." *Id.* at 71–72. Petitioner argues that it "would have been obvious to a POSITA in view of Wannamaker and Avellan because Wannamaker's purpose is to allow user interaction so there must be unicast support (vs. broadcast) to allow a specific user to request specific content be unicast only to that user." *Id.* at 73. According to Petitioner's obviousness rationale, "POSITAs would have had a reasonable expectation of success in combining Avellan's system with Wannamaker's disclosure of virtual machines." Pet. 73.

Patent Owner argues the "combination of Wannamaker and Avellan is not possible, as Wannamaker uses hardware for example the 'MMS OC1000' and the microbrowser's CPML/MML with FMB images requirements that enter into conflicts with the 'compressed images and video

files' used by Avellan." PO Resp. 46. Patent Owner argues that the combination would require undue experimentation because "there two paradigms that collide, 'server transcoding' HTML [text] to MML text, versus Image capturing from HTML." *Id.* at 46–47. According to Patent Owner, "Total obscurity on Avellan's Web to HD Video Protocol, that [collides] with the MediaCAST System and MMS. As shown, OC1000 uses a keypad to configure encoding, IP Address, etc, and not being a software device creates a no motivation to combine." *Id.* at 47.

Patent Owner also argues that "the one media stream is not used by Avellan, and even less a 'media stream for playback' as this stream also lacks of the 'plurality of multimedia items of different types.'" *Id.*

Lastly, Patent Owner also argues that the Petition's combination is based on impermissible hindsight and lacks a motivation to combine from the references themselves. *Id.* at 59–61.

Patent Owner's arguments do not squarely address Petitioner's obviousness rationale. Here, Petitioner is not proposing to bodily incorporate Avellan's entire system, e.g., including the Web-to-HD video protocol, into Wannamaker. Rather, Petitioner relies on Avellan's teachings related to unicast. *See* Pet. 71–72. Patent Owner has not explained why Avellan's teachings about unicast would have caused a paradigm collision. PO Resp. 46–47. Indeed, a person of ordinary skill in the art is a person of ordinary creativity—not an automaton. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). Likewise, we see nothing on the record that would suggest it would have been beyond the capabilities of a person having ordinary skill in the art to combine the teachings of Avellan's unicast technique with Wannamaker.

To the contrary, Petitioner argument about expectation of success is sufficiently supported by the teachings of the references themselves. Pet. 73. For example, Wannamaker teaches, a server that "continuously transmits the Web data to the client in an MPEG video stream" (Ex. 1006 ¶ 271, *cited in* Pet. 73) and data may be broadcast to all set-top boxes, multicast to a group of them, or single-cast to one set-top box. (*id.* ¶¶ 229–232, *cited in* Pet. 73). For its part, Avellan teaches a unidirectional channel for video. Ex-1003, 11:3–10, *cited in* Pet. 73. Petitioner relies upon the cited teachings in support of its rationale. *See* Pet. 73. Thus, Petitioner's articulated reasoning for combining the references has rational underpinning and that reasoning is sufficiently supported by the cited evidence.

Thus, Petitioner has shown by a preponderance of the evidence that claim 10 is unpatentable.

III. CONCLUSION

By a preponderance of the evidence, Petitioner has not shown that claims 1–6 and 13 are unpatentable but has shown that claims 7–12 are unpatentable.

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Un-patentable	Claims Not Shown Un-patentable
1–6, 13	103	Avellan		1–6, 13
1–6, 13	103	Avellan, Ma and Fain		1–6, 13
7–9, 11, 12	102	Wannamaker	7–9, 11, 12	
10	103	Wannamaker and Avellan	10	
Overall Outcome			7–12	1–6, 13

IV. ORDER

It is

ORDERED that Petitioner has not shown by a preponderance of the evidence that claims 1–6 and 13 of the ’002 patent are unpatentable;

ORDERED that Petitioner has shown by a preponderance of the evidence that claims 7–12 of the ’002 patent are unpatentable; and

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

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