

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STINGRAY DIGITAL GROUP INC.,
Petitioner,

v.

MUSIC CHOICE,
Patent Owner.

Case IPR2017-01192
Patent 8,769,602 B1

Before MITCHELL G. WEATHERLY, GREGG I. ANDERSON, and
JOHN F. HORVATH, *Administrative Patent Judges*.

WEATHERLY, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a), 37 C.F.R. § 42.73

I. INTRODUCTION

A. BACKGROUND

Stingray Digital Group Inc. (“Petitioner”) filed a petition (Paper 2, “Pet.”) to institute an *inter partes* review of claims 1–11 (the “challenged claims”) of U.S. Patent No. 8,769,602 B1 (Ex. 1001, “the 602 patent”). 35 U.S.C. § 311. Petitioner supported the Petition with a Declaration from Michael Shamos, Ph.D (Ex. 1003). Music Choice (“Patent Owner”) timely

filed a Preliminary Response. Paper 5 (“Prelim. Resp.”). On October 19, 2017, based on the record before us at the time, we instituted an *inter partes* review of claims 1–11. Paper 6 (“Institution Decision” or “Dec.”). We instituted the review on the following challenges to the claims:

References	Basis	Claims challenged
International Patent Publication WO 00/19662 A1 (Ex. 1004, “Mackintosh”)	§ 102(b)	1–7
Mackintosh and Hallier, J., Multimedia Broadcasting to mobile, portable and fixed Receivers using the Eureka 147 Digital Audio Broadcasting System; 5th IEEE Int’l Symposium on Personal, Indoor and Mobile Radio Comm., 794-99 (Sept. 18–22, 1994) (The Hague, The Netherlands) (Ex. 1005, “Hallier”)	§ 103	8–11

After we instituted this review, Patent Owner filed a Patent Owner Response in opposition to the Petition (Paper 16, “PO Resp.”) that was supported by a Declaration from Samuel Russ, Ph.D. (Ex. 2004). Petitioner filed a Reply in support of the Petition (Paper 20, “Reply”) that was supported by a Reply Declaration of Michael Shamos, Ph.D (Ex. 1008). Patent Owner did not move to amend any claim of the ’602 patent.

We heard oral argument on July 16, 2018. A transcript of the argument has been entered in the record (Paper 27, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6(c). The evidentiary standard is a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons expressed below, we conclude that Petitioner has demonstrated by a preponderance of evidence that claims 1–11 are unpatentable.

B. RELATED PROCEEDINGS

The parties identified as a related proceeding the co-pending district court litigation of *Music Choice v. Stingray Digital Group, Inc.*, No. 2:16-cv-00586-JRG-RSP (E.D. Tex. June 6, 2016) (the “DC Litigation”). Pet. 1; Paper 4, 2. Patent Owner identifies a number of other applications, patents, or proceedings as being related to this proceeding, including:

1. *Stingray Digital Group Inc. v. Music Choice*, Case IPR2017-01193 (PTAB), involving related U.S. Patent No. 9,357,245 B1;
2. U.S. Patent Application Serial Number 60/315,046, filed on August 28, 2001 (Expired);
3. U.S. Patent Application Serial Number 10/066,793, issued as U.S. Patent No. 7,275,256 B1 on September 25, 2007;
4. U.S. Patent Application Serial Number 11/837,772, issued as U.S. Patent No. 7,926,085 B2 on April 12, 2011;
5. U.S. Patent Application Serial Number 14/314,379, issued as U.S. Patent No. 9,451,300 B1 on September 20, 2016;
6. U.S. Patent Application Serial Number 14/635,619, issued as U.S. Patent No. 9,357,245 B1 on May 31, 2016; and
7. U.S. Patent Application Serial Number 15/266,799, filed on September 15, 2016 (Pending).

Paper 4, 2–3.

C. THE '602 PATENT

The '602 patent is directed toward a system and method for providing an interactive, visual complement to one or more audio programs. Ex. 1001, Abstract. Figure 1 of the '602 patent is reproduced below.

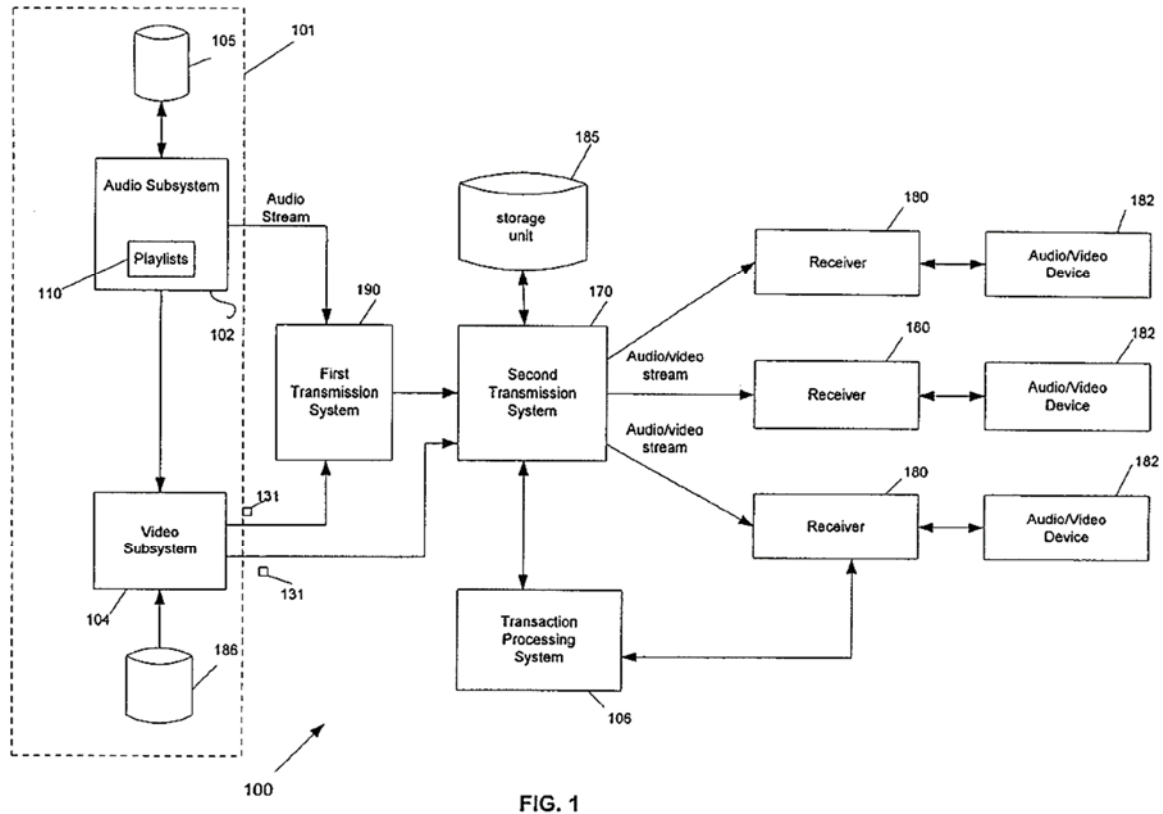


Figure 1 is a block diagram of audio/video system 100 for providing audio/video programming to consumers. *Id.* at 2:58–60. System 100 includes audio subsystem 102 having playlist 110, video subsystem 104, first transmission system 190, second transmission system 170, receivers 180, and audio/video devices 182. *Id.* at 4:6–32. Playlist 110 contains programmed sound recordings for transmission to listeners of system 100 over a particular broadcast channel, and is typically generated on a periodic basis (e.g., daily or weekly). *Id.* at 4:7–12. Audio subsystem 102 transmits the programmed sound recordings to transmission subsystem 190,

which further transmits the recordings to signal transmission system 170, which transmits the recordings to audio/video receivers 180. The latter are coupled to audio/video devices 182 that reproduce the sound recordings for system subscribers. *Id.* at 4:18–30. Audio/video receivers 180 may be, e.g., set-top boxes, and audio/video devices 182 may be, e.g., televisions. *Id.* at 4:30–32.

Video subsystem 104 generates a data packet for the channel over which the sound recording is broadcast upon receiving a trigger from audio subsystem 102. *Ex.* 1001, 4:33–35, 6:28–33. The trigger identifies the sound recording, information about the sound recording, and the channel broadcasting the sound recording. *Id.* at 6:28–33. The generated data packet contains a video image specification that specifies a visual complement to the audio broadcast. *Id.* at 4:35–39. The video image specification includes one or more visual media asset identifiers, where visual media assets can be graphic images, videos, text messages, and other media assets. *Id.* at 4:41–48. For example, the video image specification may include the name of the song, artist, and album associated with the song broadcast by transmission system 170. *Id.* at 4:50–63. The video image specification “*may* also specify the screen position where each identified asset is to be displayed” on a subscriber’s screen. *Id.* at 4:43–45 (emphasis added). The data packet containing the video image specification may be an XML or HTML file. *Id.* at 5:28–36. Once generated, the data packet is transmitted from video subsystem 104 to transmission system 170. *Id.* at 5:37–44.

Transmission system 170 parses the data packet received from video subsystem 104, and using the information contained in the video image specification, generates and transmits a video image to audio/video

receivers 180. *Id.* at 5:60–67. The video image is then sent to and displayed by audio/video devices 182. *Id.* at 6:1–3. To generate the video image from the video image specification, transmission system 170 preferably has access to storage unit 185 containing those visual media assets identified by visual media asset identifiers in the video image specification. *Id.* at 5:45–53. Alternatively, the visual media assets can be stored in storage unit 186 of video subsystem 104, and video subsystem 104 can transmit the visual media assets to transmission system 170. *Id.* at 5:54–59.

The video image generated by transmission system 170 can include a user selectable “buy” button. Ex. 1001, 7:31–37. A user, selecting the “buy” button, can initiate an e-commerce transaction with transaction processing system 106. *Id.* at 7:61–64. The selection causes a message to be sent from the user’s audio/video receiver 180 to transaction processing system 106 containing an identifier of the product (e.g., song, album) the user wants to purchase. *Id.* at 8:7–12.

Claims 1 and 8, which are the independent claims among the challenged claims, recite:

1. A method for providing a visual complement to an audio stream, comprising:
 - [a] transmitting, from a first transmission system to a second transmission system, audio data corresponding to a sound recording; and
 - [b] transmitting a data packet comprising a video image specification while the audio data is being transmitted,
 - [c-1] wherein the video image specification specifies one or more media asset identifiers, each of which identifies one or more media assets, one or more of said media asset identifiers identifying a media asset associated with the sound recording,

- [c-2] said data packet further comprising sound recording information associated with the sound recording, the sound recording information comprising one or more of the title of the sound recording and the name of the artist who recorded the sound recording,
- [d-1] wherein the step of transmitting the data packet comprises transmitting the data packet to a system comprising a video image generator,
- [d-2] wherein the video image generator is configured to generate a video image using the video image specification and
- [d-3] the system is configured to provide the generated video image to a device that is operable to display the video image to a user of the device, and
- [d-4] wherein the video image generator is configured to generate the video image by retrieving the media assets identified in the video image specification.

Id. at 15:60–16:20 (with the parties’ labeling indicated within square brackets and line breaks added to ease readability).

- 8. A system for providing a visual complement to an audio service, the system comprising:
 - [a] an audio subsystem configured to store a playlist for an audio channel of the audio service; and
 - [b] a first transmission system configured to transmit to a second transmission system audio data corresponding to a sound recording specified in the playlist; and
 - [c-1] a video image generator configured to:
 - i) receive, while the sound recording is being transmitted, a video image specification that specifies one or more media asset identifiers that identify one or more media assets, the one or more media assets being associated with the sound recording that is being transmitted, and

- [c-2] sound recording information associated with the sound recording, the sound recording information comprising one or more of the title of the sound recording and the name of the artist who recorded the sound recording, and
- [c-3] ii) generate a video image using the media assets identified in the video image specification, wherein the first transmission system is further configured to transmit to the second transmission system the generated video image multiplexed with the audio data corresponding to the sound recording,
- [d] wherein the system further comprises a video subsystem,
 - [d-1] the audio subsystem is configured to i) retrieve the audio data corresponding to the sound recording prior to the first transmission system transmitting said audio data and
 - [d-2] ii) provide to the video subsystem a trigger message comprising an identifier associated with said sound recording.

Id. at 16:49–17:11 (with the parties’ labeling indicated within square brackets and line breaks added to ease readability).

II. ANALYSIS

A. LEVEL OF ORDINARY SKILL

Petitioner contends a person of ordinary skill in the art pertaining to the ’602 patent, at the time of invention, “would have at least an undergraduate degree in computer science or electrical engineering, or equivalent experience, and, in addition, two years of experience in the distribution of digital audio and video via networks.” Pet. 7 (citing Ex. 1003 ¶¶ 12–18). Patent Owner agrees. PO Resp. 6. In considering the issues presently before us, we have adopted and applied Petitioner’s proposed

identification of the level of ordinary skill in the art, which is consistent with the '602 patent and the asserted prior art.

B. CLAIM INTERPRETATION

“A claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *see also Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (affirming that USPTO has statutory authority to construe claims according to Rule 42.100(b)). When applying that standard, we interpret the claim language as it would be understood by one of ordinary skill in the art in light of the specification, and absent any special definition, we give claim terms their ordinary and customary meaning. *See In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260 (Fed. Cir. 2010); *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning is the meaning that the term would have to a person of ordinary skill in the art in question.” (internal quotation marks omitted)). Only terms that are in controversy need to be construed, and then 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).

1. *video image specification*

The parties disagree about the meaning of “video image specification” as recited in claim 1. PO Resp. 6–13; Reply 2–4. Patent Owner argues that “video image specification” means “data that specifies at least one visual media asset identifier and its position information.” PO Resp. 6. Petitioner argues that “video image specification” merely means “data that specifies at least one visual media asset identifier” without any limitation on its “position information.” Reply 2–4. In the DC Litigation, the Court did not

interpret “video image specification” because the parties agreed that “no construction [was] necessary” for the phrase. Ex. 2001, 12.

The plain language of the claim supports Petitioner’s position because the claim does not expressly recite “position information” despite placing other express limitations on the meaning of the phrase. The claim requires that “the video image specification specifies one or more media asset identifiers, each of which identifies one or more media assets, one or more of said media asset identifiers identifying a media asset associated with the sound recording.” Ex. 1001, 15:67–16:4. Missing from this definition of “video image specification” is any indication that it must include “position information.” *Id.*

Three other phrases in the claim describing how hardware interacts with the “video image specification” or the image generated using that specification imply that the video image specification need not specify information about the position of a media asset on the user’s display. First, the claim recites that “the video image generator is configured to generate a video image using the video image specification.” *Id.* at 16:13–15. This passage fails to limit the video image specification or the video image generator beyond requiring that the generated video image arise from “using the video image specification.” *Id.* at 16:13–15. Second, the claim recites that “the video image generator is configured to generate the video image by retrieving the media assets identified in the video image specification.” *Id.* at 16:18–20. This passage merely requires that the generated image is composed from “media assets” that the video image specification identifies; it fails to specify where the generated image is displayed. Third, the claim recites “the system is configured to provide the generated video image to a

device that is operable to display the video image to a user of the device.” *Id.* at 16:15–17. Although this passage requires a device that displays the generated video image, it does so without specifying the position of the image on the display.

Claim 7, which depends directly from claim 1, introduces a requirement that “the video image specification specifies a screen location that is associated with said media asset identifier.” “[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004). Absent information rebutting this presumption, the requirement in claim 7 that “the video image specification specifies a screen location” indicates that “the video image specification” recited in claim 1 requires no position information as Petitioner contends.

Patent Owner unpersuasively argues that because claim 7 recites “screen location” rather than the allegedly broader concept of “screen position,” claim 7 is “distinguishable” from Patent Owner’s proposal that we limit video image specification to requiring a “screen position.” PO Resp. 13, n.3. Patent Owner cites Dr. Russ’s testimony, *id.*, opining that “position information,” alleged to be required of the video image specification of claim 1, “need not be particular X-Y screen coordinates” required by claim 7’s reciting of “a screen location.” Ex. 2004 ¶ 33.

Dr. Russ’s testimony is inconsistent with the manner in which the Specification uses “screen position,” namely, as referring to ordinally enumerated “locations” on the display. See Ex. 1001, 4:55–66 (specifying first through fourth “locations” 202, 204, 206, 208 illustrated in Figure 2);

see also id. Figure 4 (illustrating asset identifiers 404, 406, 491, 492, which refer to “Position = 5,” “Position = 3,” “Position = 1,” and “Position = 2,” respectively); *see also id.* 5:28–34, Figure 6 (specifying “position” numbers for asset identifiers in video image specification 602 that “associate[] a screen position with each asset identifier”). When asked at the hearing to identify any portion of the Specification that distinguished a screen position from a screen location akin to “X-Y screen coordinates,” Patent Owner could not do so. Tr. 53:11–54:3. We similarly find no part of the Specification that describes “screen location” as anything other than an ordinarily enumerated “screen position.” The Specification does, however, indicate that along with identifying “one or more visual media assets,” the “video image specification *may* also specify the screen position where each identified asset is to be displayed.” Ex. 1001, 4:41–45 (emphasis added). This passage implies that the presence of a “screen position” in a “video image specification” is optional, but not required, and that the “video image specification” of claim 1 need not include screen position or “screen location” information as required by dependent claim 7.

Based on our review of the plain language of claim 1, dependent claim 7, and the Specification, we conclude that “video image specification” means “data that specifies at least one visual media asset identifier” without specifying screen position information as Patent Owner contends.

2. data packet

Patent Owner does not expressly interpret “data packet” as recited in claim 1. *See* PO Resp. 6–13 (“claim construction” section addressing only “video image specification”). However, Patent Owner implicitly argues that the claimed “data packet” refers to a “single packet containing both” a video

image specification and sound recording information. PO Resp. 16. We disagree with Patent Owner’s implied interpretation of “data packet.”

Instead, we agree with the analysis of the District Court in the DC Litigation interpreting “data packet” to mean a “collection of data” that is not limited to “a single file.” Ex. 2001, 40–42. The plain language of the claim, which encompasses one or more “data packets” by reciting “a data packet” without expressly limiting the data packet to a single data packet, supports our interpretation. *Baldwin Graphics Sys., Inc. v. Siebert*, 512 F.3d 1338, 1342–43 (Fed. Cir. 2008). The Specification is consistent with our conclusion that the “data packet” may refer to multiple files because it describes “data packets” as “extensible mark-up language (XML) *files* or hyper-text mark-up language (HTML) *files*.” Ex. 1001, 5:34–36 (emphasis added); *see also id.* at 11:45–46 (“In one embodiment, data packet 732 is an HTML document.”).

Claim 1, by reciting two “transmitting” steps, “transmitting, from a first transmission system to a second transmission system, audio data” and “transmitting a data packet,” implies that “data packet” is not only broad enough to cover multiple packets, but also may be transmitted by more than one source. The step of “transmitting . . . audio data” requires transmission from the “first transmission system” to the “second transmission system,” respectively. *Id.* at 15:62–63. By contrast, the step of “transmitting a data packet” does not identify the source of the “data packet,” only the destination, by requiring transmitting to “a system comprising a video image generator.” *Id.* at 16:10–12. By not specifying a source that performs the “transmitting a data packet,” the claim broadly encompasses transmitting that data packet from more than one source. Encompassing the concept of

transmitting from unspecified sources also implies that “a data packet” broadly encompasses more than one data packet.

Based on our review of the intrinsic record, we conclude, as the District Court did, that “a data packet” means “a collection of data.”¹ As such, “a data packet” is not limited to “a single file,” and may be transmitted from more than one source.

C. THE PARTIES’ POST-INSTITUTION ARGUMENTS

In our Institution Decision, we concluded that the argument and evidence adduced by Petitioner demonstrated a reasonable likelihood that claims 1–11 were unpatentable as anticipated or obvious based on the challenges identified in the table in Part I.A above. Dec. 22. We must now determine whether Petitioner has established by a preponderance of the evidence that the specified claims are unpatentable over the cited prior art. 35 U.S.C. § 316(e). To that end, we previously instructed Patent Owner that “any arguments for patentability not raised in the [Patent Owner Response] will be deemed waived.” Paper 7, 6; *see also In re Nuvasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (holding that patent owner’s failure to proffer argument at trial as instructed in scheduling order constitutes waiver). Additionally, the Board’s Trial Practice Guide states that the Patent Owner Response “should identify all the involved claims that are believed to be patentable and state the basis for that belief.” Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012).

¹ We note that this is the construction Patent Owner advocated in its claim construction brief to the District Court. *See* Ex. 1011, 23–25 (“The proper construction of the term ‘data packet’ is ‘a collection of data such as one or more files or documents.’”).

D. LEGAL STANDARDS

Petitioner challenges the patentability of the challenged claims on the grounds that the claims are either anticipated by Mackintosh or obvious in view of the combination of Mackintosh and Hallier. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness as set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The *KSR* Court summarized the four factual inquiries set forth in *Graham* that we apply in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103(a) as follows: (1) determining the scope and content of the prior art, (2) ascertaining the differences between the prior art and the claims at issue, (3) resolving the level of ordinary skill in the pertinent art, and (4) considering objective evidence indicating obviousness or nonobviousness. *KSR*, 550 U.S. at 406. With these standards in mind, we address each challenge below.

E. CLAIMS 1–7: ANTICIPATION BY MACKINTOSH

Petitioner contends that Mackintosh anticipates claims 1–7. Pet. 9–44. For the reasons stated below, we determine that Petitioner has demonstrated, by a preponderance of evidence, that Mackintosh anticipates claims 1–7.

1. Overview of Mackintosh

Mackintosh discloses “systems and methods for providing enhanced features for the delivery of broadcast material to a listener, viewer or, more

generally, a user.” Ex. 1004, 3:6–8. Mackintosh provides supplemental materials to the user “in a coordinated fashion such that they relate to the actual broadcast materials . . . being streamed or otherwise delivered to the user.” *Id.* at 3:10–12. Supplemental materials can include “images, video clips, audio clips, data, or other materials that may be provided to the user in conjunction with the broadcast materials.” *Id.* at 3:18–20. For example, Mackintosh discloses “the broadcast of radio broadcast materials over the Internet,” such as the broadcast of “a plurality of tracks that can be streamed to a user via the Internet.” *Id.* at 3:24–27. The tracks (e.g., music tracks or songs) can be “provided along with program data that can indicate, for example, an identification of the track, the type of track, and other pertinent or relevant information regarding the particular track.” *Id.* at 3:27–32.

Figure 5, reproduced at right, is a block diagram showing radio station 204 providing a broadcast to user terminal 212 via Internet Service Provider (“ISP”) 208. Ex. 1004, 5:20–22. Radio station 204 broadcasts material to ISP 208, which then provides the broadcast material to user terminals 212 via the Internet. *Id.* at 10:31–32, 12:13–14. The broadcast can be provided in AM, FM, or digital format, and can consist of pre-programmed broadcast material. *Id.* at 11:1–8. The broadcast material can include the current radio broadcast and program data associated with the current radio broadcast, such as cut codes indicating the tracks in the broadcast, advertising data, and format data indicating the type of music broadcast or the type of product advertised. *Id.* at 10:32–35, 11:28–35, 12:13–14. The format data can be used to key particular pieces or categories of supplemental material to the current broadcast. *Id.* at 12:1–2. User terminal 212, which can be any general purpose audio/video player capable of playing the broadcast material and the supplemental material, plays the broadcast material to a user. *Id.* at 12:21–26.

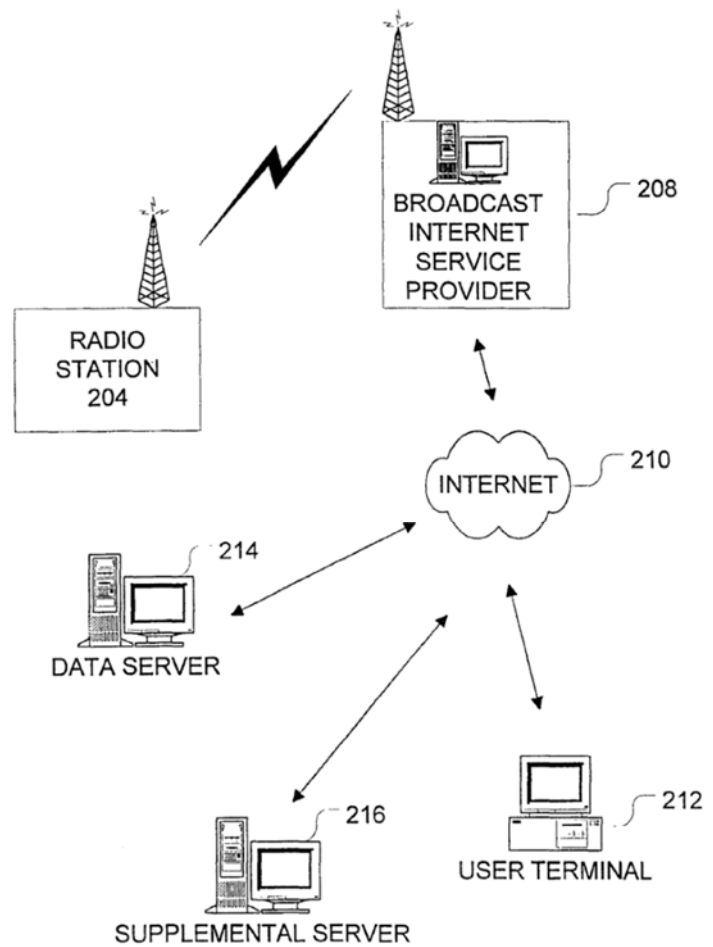
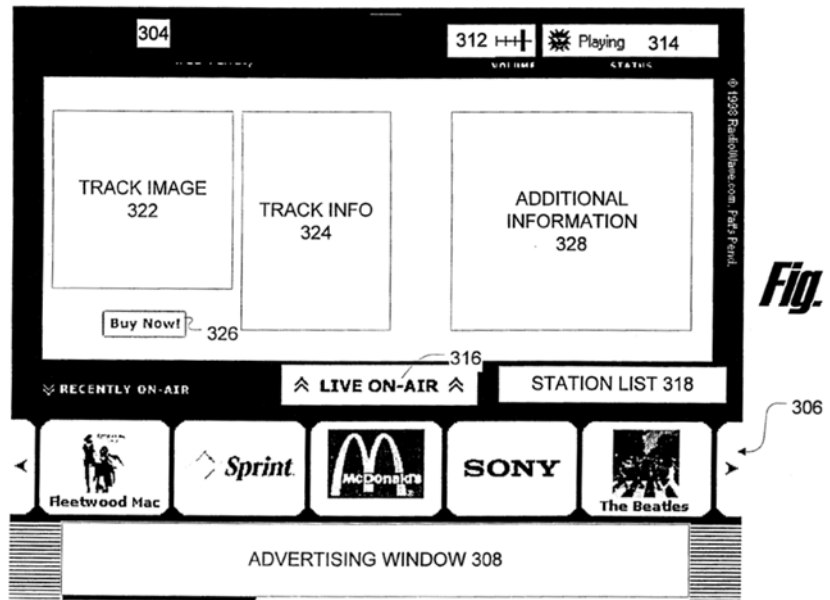


Fig. 5

ISP 208 provides program data associated with the broadcast, including a cut number and category, to either data server 214 or user terminal 212. *Id.* at 12:17–20. When provided to user terminal 212, user terminal 212 provides the program data to data server 214. *Id.* at 12:29–33. Data server 214 uses the program data to retrieve supplemental materials such as images, videos, audios, or text that are associated with the program data, or to retrieve URLs or other location information identifying the location of supplemental materials on supplemental servers 216. *Id.* at 13:10–16. Data server 214 then returns some or all of the supplemental materials and/or location information for the supplemental materials to user terminal 212. *Id.* at 13:16–21. User terminal 212 receives the supplemental materials, or uses the location information to retrieve the supplemental materials from supplemental servers 216, and “plays” or displays them to the user while the user listens to the broadcast material. *Id.* at 13:22–29. This allows the system to provide the user with, e.g., a track number, artist, album title, album image, links to purchase the album, promotional materials, concert schedules, other images or videos relating to the album or artist, or virtually any other information related to the current track broadcasted by radio station 204. *Id.* at 13:34–14:5.

The supplemental material provided to user terminal 212 can be displayed or “played” on a multimedia player such as that shown in Figure 7, which is reproduced below right. The user interface includes data window 302, player interface 304, history window 306, and advertising window 308. *Id.* at 15:34–36.

Player interface 304 includes user selectable controls such as volume control 312, status display 314, on-air



display 316, and station list 318. *Id.* at 16:1–5. Data window 302 includes areas to display track image 322, track information 324, buy now button 326, and additional information selection area 328. *Id.* at 16:11–15.

When “user terminal 212 is provided with URL’s to retrieve supplemental materials, the URL’s can be used to retrieve *some or all* of the information provided” in data window 302. *Id.* at 16:17–19 (emphasis added). Track image 322 can be an album image, i.e., a picture, image, or graphical representation of the album containing the current song being played. *Id.* at 16:22–24. Track information 324 can display the artist’s name, the current song being played, the album on which that song can be found, and any other information related to the current song. *Id.* at 16:35–17:3. User terminal 212 can retrieve and display the track/album image 322

and track information 324 automatically upon receipt without user interaction. *Id.* at 17:8–10.

Additional information selection area 328 can provide menus or icons the user can interact with to obtain additional information or supplemental materials regarding the currently playing track, such as concert schedules, tickets, merchandizing or other information. *Id.* at 17:13–20. This information is generally not retrieved by user terminal 212 until it is requested by clicking on an icon or otherwise interacting with the menu provided in additional information selection area 328. *Id.* at 17:24–27.

2. Independent Claim 1

Petitioner argues that Mackintosh anticipates claim 1. Pet. 13–30. Petitioner cites specific portions of Mackintosh that describe each aspect of claim 1. *Id.* (citing Ex. 1004, 3:5–5:5, 6:30–34, 10:26–11:2, 12:13–18, 12:21–14:5, 14:30–32, 16:11–21, 16:35–17:3, 18:25–28, 25:18–21, 28:3–26, 28:33–29:9, 30:23–32:11, Figures 5, 6, 7, 12, 13). Petitioner also supports its allegations with testimony from Dr. Shamos. *Id.* (citing Ex. 1003 ¶¶ 41, 42, 45, 47, 48, 50). In its Reply, Petitioner supplements its showing by citing portions of Mackintosh and additional testimony from Dr. Shamos. Reply 7–14 (citing Ex. 1004, 13:19–33; 16:11–21, 16:35–17:7, 28:3–18, 28:20–35, 29:1–9, 30:1–13, Figure 6; Ex. 1008 ¶¶ 19–21, 23, 25, 26). We adopt Petitioner’s analysis in the Petition and Reply as our own in connection with all limitations of claim 1, and we further analyze below Patent Owner’s arguments made in the Patent Owner Response.

Patent Owner argues that Mackintosh fails to anticipate claim 1 for only two reasons. PO Resp. 14–25. First, Patent Owner argues Mackintosh allegedly fails to describe a “data packet” as described in limitations 1b and

1c-2. *Id.* at 14–23. Second, Patent Owner argues that Mackintosh fails to describe a “video image specification” that specifies where the related media asset is positioned on the user’s screen. *Id.* at 23–25. For the reasons expressed below, Petitioner persuades us that Mackintosh describes both allegedly missing limitations.

a) Whether Mackintosh Describes the Claimed Data Packet

The claimed “data packet,” according to the express limitations of claim 1, must include both “a video image specification,” Ex. 1001, 15:65–66, and “sound recording information . . . comprising one or more of the title . . . and the name of the artist” *id.* at 16:4–9. Patent Owner contends that Mackintosh describes sending a data packet from data server 214 to terminal 212 that either includes URLs (the alleged video image specification) or song information, but not both. PO Resp. 16–20. We disagree.

First, Patent Owner’s argument implies that the claimed data packet refers to a “single packet” that must be transmitted from a single source. *Id.* at 16. For the reasons expressed in Part II.B.2 above, we reject Patent Owner’s implied narrowing of “data packet.” As explained in more detail below, Petitioner persuasively demonstrates that: (1) server 214 transmits a “video image specification” of the data packet, Pet. 16–23, and (2) server 214 or server 216 transmits the “sound recording information” of the data packet, *id.* at 26–27; Reply 7–14. Nothing more is required of claim 1. Second, as explained in more detail below, even if the claimed data packet must be transmitted from a single source, Petitioner persuades us that Mackintosh transmits such a data packet. See Reply 7–14.

In general, Mackintosh describes a highly diversified system architecture for distributing sound recordings and supplemental information

associated with those sound recordings from one or more servers. Ex. 1004, 3:25–4:6. Mackintosh’s servers provide “a wealth of additional supplemental information . . . to accompany the broadcast materials broadcast by radio station 204,” including:

album title, artist, and track number, links to purchase the album, additional materials such as promotional materials, concert schedules and materials, memorabilia, artists bios, other images or videos relating to the album or artists, or virtually any other information that may be somehow related to the current item being played by radio station 204.

Id. at 13:34–14:5. Mackintosh’s servers also provide “supplemental materials” relating to a song playing on terminal 212 including “for example, images, videos, audios, text, or other data.” *Id.* at 13:12–13. Mackintosh presents “supplemental materials” and “supplemental information” in various locations within data window 302 including, for example, track image 322, track info 324, and additional information 328. *Id.* at 16:11–16, Figure 5. We determine that Mackintosh’s expansive description of supplemental materials and information, encompasses both the “media asset identifier identifying a media asset associated with the sound recording” (e.g., a URL pointing to additional information 328) and the “sound recording information” (i.e., title and artist, among other things) recited in claim 1.

User terminals 212 flexibly obtain Mackintosh’s supplemental information from one or both of data server 214 and supplemental server 216. *Id.* at 13:10–21, 16:11–19. Mackintosh expressly indicates that data server 214 may directly provide “*some or all* of the supplemental materials” (i.e., the claimed “sound recording information”) to terminal 212 after retrieving those materials from “data bases directly associated with ID

server 214.” Ex. 1004, 13:10–21 (emphasis added). Mackintosh also discloses that information not directly provided to terminal 212 can be provided via “a URL or other location information to identify where the one or more various supplemental materials may be located on additional supplemental servers 216.” *Id.* at 13:13–16. Mackintosh expressly indicates that terminal 212 may retrieve “supplemental materials” (i.e., the claimed media asset associated with the sound recording) from supplemental server 216 using the URL provided by data server 214 (i.e., the claimed video image specification). *Id.* at 16:11–19.

Patent Owner argues Petitioner is improperly combining different embodiments of Mackintosh in its anticipation analysis, and that data server 214 provides terminal 212 with *either* URLs *or* sound recording information. *See* PO Resp. 14–20. We disagree.

Mackintosh discloses terminal 212 can retrieve supplemental information from data server 214 either directly or via URL. Moreover, Mackintosh discloses that in embodiments “where user terminal 212 is provided with URL’s to retrieve supplemental materials, the URL’s can be used to retrieve *some or all* of the information provided in . . . data window 302” (i.e., album image 322, artist or album or track information 324, and additional information 328). Ex. 1004, 16:11–19 (emphasis added). This is consistent with Mackintosh’s disclosure that data server 214 may directly provide “*some or all* of the supplemental materials” (i.e., the claimed “sound recording information”) to terminal 212 after retrieving those materials from “data bases directly associated with ID server 214.” Ex. 1004, 13:10–21 (emphasis added). Thus, this passage of Mackintosh discloses embodiments in which data server 214 transmits to terminal 212 only *some* of the

supplemental information via URL (e.g., additional information 328), and transmits the remaining information directly to terminal 212 (e.g., album image 322, artist, album, and track information 324). In these embodiments, data server 214 transmits to terminal 212 a data packet comprising both a media asset identifier (e.g., a URL to additional information 328) and sound recording information (e.g., artist, album, and track information 324).

Accordingly, we determine that Mackintosh describes a system in which data server 214 transmits a “data packet” that includes both a “video image specification” and “sound recording information” as recited in claim 1.²

b) Whether Mackintosh Describes the Claimed “Video Image Specification”

Patent Owner argues that Petitioner’s alleged video image specification fails to describe the claimed video image specification because it does “not contain information about where images [i.e., claimed “media assets”] are to be displayed.” PO Resp. 23–26. Patent Owner contends that Petitioner relies solely upon URLs sent by Mackintosh’s server 214 to terminals 212 as describing the claimed video image specification, which do not specify where to place the assets to which they refer. *Id.* at 24–26 (citing Ex. 2004 ¶¶ 70–71). Patent Owner also contends that Mackintosh’s user interfaces are “custom-designed” and dictate where items that terminals 212

² Patent Owner’s argument that an ordinarily skilled artisan “would not create such a hybrid system,” PO Resp. 18–20, is unpersuasive. The argument may bear on an obviousness analysis, but it is not relevant to the issue of whether Mackintosh anticipates claim 1, in part, because it describes such a hybrid system.

retrieve using the URLs they receive from server 214 are placed on the display.

Patent Owner's arguments are not persuasive for two reasons. First, Patent Owner's arguments necessarily rest upon its argument that the video image specification of claim 1 specifies "screen position information," an argument that we reject for the reasons expressed in Part II.B.1 above. Second, even if the video image specification of claim 1 were to require specifying screen position information, we conclude that Mackintosh describes such a video image specification as discussed in our analysis of whether Mackintosh anticipates claim 7 in Part II.E.4 below. We therefore determine that Mackintosh describes the video image specification recited in claim 1.

c) Conclusion

For all the reasons expressed above, Petitioner has persuaded us by a preponderance of evidence that Mackintosh anticipates claim 1.

3. Dependent Claims 2–6

Claims 2–6 depend ultimately from claim 1. Ex. 1001, 16:21–44. Regarding these dependent claims, Patent Owner argues only that claims 2–6 are patentable for the reasons proffered in support of the patentability of claim 1. PO Resp. 26 (arguing for patentability of only claims 2–6 solely based upon its arguments that claim 1 is patentable). Based on our review of Petitioner's showing that Mackintosh describes all limitations introduced in claims 2–6 and our analysis of claim 1 in Part II.E.2 above, we determine that Mackintosh anticipates claims 2–6.

4. *Dependent Claim 7*

Claim 7 depends directly from claim 1 and further recites: “for at least one media asset identifier specified by the video image specification, the video image specification specifies a screen location that is associated with said media asset identifier.” Ex. 1001, 16:45–48.

Petitioner contends that Mackintosh describes including “screen location” for media assets that are specified in the video image specification when it describes retrieving web pages and displaying them in data window 302. Pet. 43–44 (citing Ex. 1004, 18:25–28). The cited portion of Mackintosh states:

In one embodiment, when the buy now button 326 is clicked, the appropriate or related web pages can be brought up directly within data window 302. They can be configured to span the entire area of data window 302, or alternatively, to be a subset thereof.

Ex. 1004, 18:25–28. Dr. Shamos concludes from this passage that Mackintosh indicates that the web page itself, not the player, defines the location of items displayed within window 302. *Id.* at 114:8–115:11. Dr. Russ also testifies that an ordinarily skilled artisan would understand that the tag in a web page written in the typical HTML format is one way in which the location of an image can be specified. Ex. 1008 ¶ 35. More specifically, the positional parameters “align,” “height,” “hspace,” “units,” “vspace,” and “width” used with an tag all provide mechanisms for specifying the location of an image. *Id.*

Patent Owner argues that Mackintosh fails to indicate whether the sizing of the webpage and its components within a display window is due to location information in the video image specification or due to the configuration of the player itself. PO Resp. 28. Patent Owner relies upon

testimony from Dr. Russ to support its position. *Id.* at 28–29 (citing Ex. 2004 ¶¶ 73–75). Dr. Russ cites no objective evidence to support his conclusion that the player and not the webpage (i.e., a type of video image specification) defines the location of images retrieved by the webpage. Ex. 2004 ¶¶ 73–75. Instead, his testimony merely tracks Patent Owner’s argument verbatim.

Because Dr. Shamos explains precisely how an ordinarily skilled artisan would understand the positioning of material within Mackintosh’s data window 302 and Dr. Russ merely states, without evidence or meaningful explanation, why Dr. Shamos’s testimony is wrong, we credit Dr. Shamos’s testimony over that of Dr. Russ on this issue. Petitioner’s citations to Mackintosh and Dr. Shamos’s explanation of what the cited passages in Mackintosh means to an ordinarily skilled artisan prove by a preponderance of evidence that Mackintosh also describes the limitations introduced in claim 7. Accordingly, we determine that Petitioner has proven by a preponderance of evidence that Mackintosh anticipates claim 7.

5. Conclusion

Based on our review of the record developed at trial, we conclude that Petitioner has proven by a preponderance of evidence that Mackintosh anticipates claims 1–7.

F. CLAIMS 8–11: OBVIOUSNESS IN VIEW OF MACKINTOSH AND HALLIER

Petitioner contends that the combination of Mackintosh and Hallier renders claims 8–11 unpatentable as obvious. Pet. 44–60. For the reasons stated below, we determine that Petitioner has demonstrated by a preponderance of evidence that the combination of Mackintosh and Hallier renders claims 8–11 unpatentable as obvious.

1. Overview of Hallier

Hallier is a paper describing a digital audio broadcasting (“DAB”) system. Ex. 1005, Abstract. The DAB system simultaneously delivers audio, image, video, and other data content multiplexed into a single data stream of up to 1.728 Mbit/s bandwidth. *Id.* at 794.³

2. Independent Claim 8

a) Petitioner’s Argument and Evidence

Petitioner identifies in detail the portions of Mackintosh and Hallier that describe each limitation of independent claim 8. Pet. 48–58 (citing Ex. 1004, 3:5–5:5, 10:31–35, 11:7–16, 13:13–16, 13:24–14:5, 15:6–10, 16:35–17:3, 26:25–27:23, Figures 1, 7, 12; Ex. 1005, 794). Petitioner also supports its contentions with expert testimony from Dr. Shamos. *Id.* (citing Ex. 1003 ¶¶ 74–76, 80–85). Petitioner relies on Mackintosh as describing every element of claim 8 except for the requirement that “the first transmission system is further configured to transmit to the second transmission system the generated video image multiplexed with the audio data corresponding to the sound recording” as recited in the limitation referenced as 8c-3. *Id.* at 46, 53–54.

Petitioner relies upon Hallier as describing multiplexing data including video data into a broadcast audio stream. *Id.* at 44–46. Petitioner also contends that an ordinarily skilled artisan would have found it obvious to modify Mackintosh to incorporate Hallier’s multiplexing method to avoid load-related problems that Mackintosh recognized in connection with its data server 214. *Id.* at 46–48. Petitioner also contends that Mackintosh

³ Citations to Exhibit 1005 refer to Hallier’s original page numbering.

suggests such multiplexing of audio and video when it illustrates direct communication from program provider 104 and data server 116. *Id.* at 47. Petitioner supports its contentions regarding what an ordinarily skilled artisan would have been motivated to incorporate from Hallier into Mackintosh with testimony from Dr. Shamos. *Id.* at 46–48 (citing Ex. 1003 ¶¶ 63–68).

We adopt Petitioner’s analysis in the Petition and Reply as our own in connection with the manner in which the combination of Mackintosh and Hallier describe all limitations of claim 8, and we further analyze below Petitioner’s showing in view of Patent Owner’s arguments made in its Patent Owner Response.

b) Analysis of Patent Owner’s Arguments and Evidence

Patent Owner argues that Petitioner has failed to prove a motivation to incorporate Hallier’s multiplexing techniques into Mackintosh’s system for delivering broadcast material and accompanying supplemental information. PO Resp. 30–46.

(1) Inconsistency with Petitioner’s Proposed Combination in IPR2017-00888

Patent Owner argues that Petitioner cannot simultaneously argue that two different combinations of Mackintosh and Hallier solve Mackintosh’s admitted problem of overloading servers 214, 216. PO Resp. 37–39. Patent Owner’s argument is unpersuasive.

First, Patent Owner fails to cite any legal authority supporting its position. Furthermore, under the “expansive and flexible” framework for analyzing obviousness, “any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR*, 550 U.S. at 420.

Second, the references themselves suggest their combination. Mackintosh itself suggests many different pathways for distributing broadcast audio and related supplemental multimedia materials via its system architecture. See Ex. 1004, Figures 1–6, 10 and accompanying text (describing four different system architectures for distributing music and related supplemental materials along with multiple communication pathways for delivering data). Mackintosh also describes radio station 204 multiplexing some data, program data, with the audio data and digitally broadcasting that multiplexed data stream to ISP 208. *Id.* at 9:36–10:2, 10:31–11:16. Hallier describes a digital audio broadcasting system in which audio is multiplexed into a single broadcast data stream with other types of data including text, images, and video. Ex. 1005, Abstract. Hallier notes that its multiplexing methods are “highly appropriate to multimedia broadcasting.” Ex. 1005, 794.

Third, Dr. Russ recognized that different design requirements and considerations lead to different preferred solutions. Ex. 1009, 104:9–18. Petitioner persuasively demonstrates that the server overload problem identified in Mackintosh would have motivated an ordinarily skilled artisan to incorporate Hallier’s multiplexing concepts into Mackintosh’s system architecture in more than one way.

*(2) Ineffectiveness of Petitioner’s Proposed Combination of
Mackintosh and Hallier at Reducing Data Overload*

Patent Owner argues that Petitioner fails to explain why an ordinarily skilled artisan would use Hallier’s multiplexing methods rather than the methods suggested by Mackintosh itself to reduce data overload in its system architecture. PO Resp. 39–47. Patent Owner does not argue that Petitioner’s proposed combination would not reduce the data load on

server 214. *Id.* But Patent Owner contends that Petitioner’s proposed combination would overload ISP 208 because “every user is sent every piece of supplemental material by broadcast internet service provider 208[, which] makes the data overload problem much, much worse at server 208.” *Id.* at 43. Patent Owner cites only Dr. Russ’s testimony in support of this argument. *Id.* at 43 (citing Ex. 2004 ¶¶ 92–93). And Dr. Russ cites no objective evidence to support his testimony. Ex. 2004 ¶¶ 92–93. Without such objective evidence, we accord little weight to Dr. Russ’s testimony on this point.

Petitioner responds in two ways. First, Dr. Shamos testifies that an ordinarily skilled artisan would understand that Hallier’s multiplexing technique need not be used for every piece of supplemental material, but could be used only for relatively low-bandwidth content like album covers and text-based song information. Ex. 1008 ¶ 49 (citing Ex. 1004, 3:18–20, 29:1–9, 30:1–13, Figure 12). Second, Dr. Shamos testifies that, even if the data load on ISP 208 were increased somewhat, an ordinarily skilled artisan would consider ISP 208 to refer to a server that is designed to serve high volumes of data to every terminal 212. *Id.* (citing Ex. 3:24–27, 12:13–17, 14:29–15:5, 23:35–24:1, 27:18–23 (describing broadcast servers transmitting audio data to terminals)). Despite Mackintosh’s broadcast server’s continuous transmission of data to all terminals, Mackintosh never identifies any issues with overloading on its broadcast servers. Ex. 2005, 96:20–97:2; *see also* generally Ex. 1004 (not describing overload on broadcast servers 108, 208, 509). We consider Dr. Shamos’s testimony on the balancing of loads across Mackintosh’s system architecture more

persuasive because it analyzes Mackintosh more thoroughly than Dr. Russ's testimony, which cites no objective evidence.

Even if Patent Owner's evidence established that correcting the overload on server 214 as suggested by Petitioner would increase the load on ISP 208, it would not necessarily nullify Petitioner's case for obviousness. Our reviewing court has recognized that a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate any or all reasons to combine teachings. *See Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000) ("The fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another.").

c) Conclusion

Based on the current record, and for the reasons stated above, we are persuaded that Petitioner has proven by a preponderance of evidence that the combination of Mackintosh and Hallier describes all elements of claim 8 and that an ordinarily skilled artisan would have been motivated to incorporate Hallier's multiplexing techniques into Mackintosh's system architecture to reduce or manage loads on Mackintosh's servers 214, 216. We also conclude that Petitioner has proven by a preponderance of evidence that the combined teachings of Mackintosh and Hallier render claim 8 unpatentable as obvious.

3. Dependent Claims 9 and 10

Claims 9 and 10 depend ultimately from claim 8. Ex. 1001, 17:12–19. Regarding these dependent claims, Patent Owner argues only that claims 9

and 10 remain patentable for the same reasons that claim 8 remains patentable. PO Resp. 50–51. For the reasons expressed in Part II.F.2 above, we conclude that claim 8 is obvious in view of Mackintosh and Hallier. We adopt as our own the Petitioner’s argument and evidence challenging the patentability of claims 9 and 10.

Based on our review of the Petition as it relates to claims 9 and 10, and our evaluation of Petitioner’s challenge to claim 8 as set forth above, we are persuaded that Petitioner has demonstrated by a preponderance of evidence that the combination of Mackintosh and Hallier renders claims 9 and 10 unpatentable as obvious.

4. Dependent Claim 11

Claim 11 depends from claim 8. Ex. 1001, 17:20–23. Claim 11 introduces essentially the same limitation introduced in claim 7. Compare *id.*, with *id.* at 16:45–48. Patent Owner argues that claim 11 remains patentable for the same reasons that claim 8 remains patentable and also for the same reasons that claim 7 remains patentable. PO Resp. 51. For the reasons expressed in Part II.F.2 above, we conclude that claim 8 is obvious in view of Mackintosh and Hallier. For the reasons expressed in Part II.E.4 above, we determine that Mackintosh anticipates claim 7 and thus also describes the limitations recited in claim 7 that are introduced in claim 11.

Based on our review of the Petition as it relates to claim 11, and our evaluation of Petitioner’s challenge to claims 7 and 8 as set forth above, we are persuaded that Petitioner has demonstrated by a preponderance of evidence that the combination of Mackintosh and Hallier renders claim 11 unpatentable as obvious.

5. *Conclusion*

Based on our review of the current record, we conclude that Petitioner has proven by a preponderance of evidence that the combination of Mackintosh and Hallier renders claims 8–11 of the '602 patent unpatentable as obvious.

III. CONCLUSION

Petitioner has demonstrated by a preponderance of the evidence that Mackintosh anticipates claims 1–7 and that the combination of Mackintosh and Hallier renders claims 8–11 unpatentable as obvious.

IV. ORDER

For the reasons given, it is:

ORDERED that, based on a preponderance of evidence, claims 1–7 of U.S. Patent 8,769,602 B1 are *unpatentable* as anticipated under 35 U.S.C. § 102(b) by Mackintosh;

FURTHER ORDERED that, based on a preponderance of evidence, claims 8–11 of U.S. Patent 8,769,602 B1 are *unpatentable* as obvious under 35 U.S.C. § 103 in view of the combined teachings of Mackintosh and Hallier;

FURTHER ORDERED that claims 1–11 of U.S. Patent 8,769,602 B1 shall be *canceled*; and

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

IPR2017-01192
Patent 8,769,602 B1

PETITIONER:

Heath J. Briggs
Joshua L. Raskin
Vimal M. Kapadia
GREENBERG TRAURIG, LLP
BriggsH@gtlaw.com
RaskinJ@gtlaw.com
KapadiaV@gtlaw.com

PATENT OWNER:

Robert W. Ashbrook Jr.
Robert D. Rhoad
DECKERT LLP
robert.ashbrook@dechert.com
robert.rhoad@dechert.com

Brian S. Rosenbloom
Martin M. Zoltick
Michael V. Battaglia
Jennifer B. Maisel
ROTHWELL, FIGG, ERNST & MANBECK, P.C.
brosenbloom@rfem.com
mzoltick@rfem.com
mbattaglia@rfem.com
jmaisel@rfem.com