

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DISH NETWORK CORPORATION and
DISH NETWORK L.L.C.,
Petitioner,

v.

CUSTOMEDIA TECHNOLOGIES, L.L.C.,
Patent Owner.

Case IPR2017-00717
Patent 9,053,494 B2

Before MEREDITH C. PETRAVICK, MICHAEL W. KIM, and
KALYAN K. DESHPANDE, *Administrative Patent Judges*.

KIM, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

DISH Network Corporation and DISH Network L.L.C. (collectively, “Petitioner”) filed a Petition requesting *inter partes* review of claims 1–7, 16–19, 23–25, 27, and 28 of U.S. Patent No. 9,053,494 B2 (Ex. 1003, “the ’494 patent”). Paper 1 (“Pet.”). Customedia Technologies, L.L.C. (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”).

On July 28, 2017, we instituted an *inter partes* review of claims 1–7, 19, 23–25, 27, and 28 on certain grounds of unpatentability set forth in the Petition. (Paper 9, “Dec.”). After institution of trial, Patent Owner filed a Patent Owner Response (Paper 22, “PO Resp.”) and a Disclaimer for claims 5, 25, 39, and 43 of the ’494 patent (Ex. 2006). Petitioner filed a Reply (Paper 36, “Pet. Reply”). Petitioner relies on Declarations of Dr. Kevin Negus (Exs. 1008, 1029). Patent Owner relies on Declarations of Dr. Jay Kesan (Exs. 2001, 2003).

An oral hearing was held on March 5, 2018. Paper 41 (“Tr.”). After oral hearing, the Supreme Court issued its decision on April 24, 2018, in *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348 (2018). In response, the Board issued an Order amending the Decision to Institute Trial and instituting trial on the claims and grounds originally denied in the Decision on Institution. Paper 42. The parties waived additional briefing with respect to the newly instituted claims and grounds. Paper 43.¹

¹ On May 16, 2018, the Board authorized Patent Owner to file a paper incorporating by reference arguments from Preliminary Responses concerning the grounds newly instituted in four related proceedings. Paper 43. Patent Owner filed the paper in three of the proceedings, but did not file

The Board has jurisdiction under 35 U.S.C. § 6. In this Final Written Decision, issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73, we determine that Petitioner has met its burden of showing, by a preponderance of the evidence, that claims 1–4, 6, 7, 19, 23, 24, and 27 of the '494 patent are unpatentable. We determine also that Petitioner has not met its burden of showing, by a preponderance of the evidence, that claims 16–18 and 28 of the '494 patent are unpatentable.

B. Related Proceedings

Patent Owner has asserted the '494 patent against Petitioner in an ongoing action before the U.S. District Court for the Eastern District of Texas (“District Court”), Case No. 2:16-cv-00129 (“District Court Case”). Pet. 1; Paper 4, 2. In addition, before the Office, the '494 patent is the subject of IPR2017-00724 and CBM2017-00032, which were also filed by Petitioner. Paper 4, 2; Pet. 1–2. We issue final written decisions in those proceeding simultaneously with this decision.

C. The '494 Patent

The '494 patent discloses a digital data management system, one object of which is to “[r]ent/lease storage space in [a] user[']s Data Box to personalize and target advertising to the individual preferences of the user.” Ex. 1003, 3:30–4:12. The disclosed system has a local host Data Management System and Audio/Video Processor Recorder-player (“VPR/DMS”) unit, which allows for program reception, recording,

it in the instant proceeding. The omission appears to be an oversight, and in any case, Petitioner indicated that it would not file any responsive papers. *Id.* at 2. Accordingly, we consider the substantive arguments from the Preliminary Response. *See, e.g.*, IPR2017-00724, Paper 45.

processing, download, and playback, as well as a remote Account-Transaction Server (“ATS”), which stores and provides programming information for use with the VPR/DMS unit. Ex. 1003, 4:13–19, 21:42–44.

The ’494 patent discusses advertising operations of the system in which broadcaster content provider 41 transmits advertising data to VPR/DMS 30, and the advertising data is recorded on built-in, non-movable storage device 14. Ex. 1003, 30:50–31:15. Figure 16 is reproduced below.

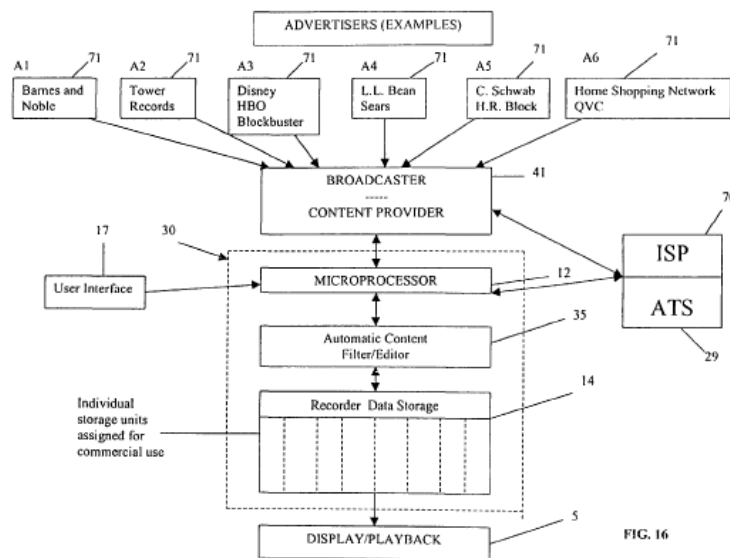


Figure 16 “illustrates the communication pathways between advertisers 71, a broadcaster content provider 41, and . . . VPR/DMS 30.” Ex. 1003, 30:60–63.

The ’494 patent explains that programmable “[a]dvertising ‘sections’ or ‘spaces’ or ‘data boxes’” within VPR/DMS 30 “may be reserved, rented, leased or purchased from [an] end user, content providers, broadcasters, cable/satellite distributor, or other data communications companies administering the data products and services.” Ex. 1003, 31:44–64. For example, a cable distributor may provide a customer with a set-top box containing VPR/DMS 30 with built-in non-movable storage device 14,

which has “certain areas that are reserved and controlled by the cable company” and that can be sold or leased to advertisers. Ex. 1003, 31:64–32:6.

Advertisements that are customer specific, based on customer selection or activity history monitoring, can be delivered to the advertising sections of VPR/DMS 30 and selectively recorded onto the “designated advertising ‘sections.’” Ex. 1003, 31:49–60, 32:7–15. According to the ’494 patent, this provides benefits for both the advertiser and customer, including “maximizing content, establishing customer qualifications, and ultimately producing more cost efficient advertising.” Ex. 1003, 32:17–21.

D. Illustrative Claim

Of challenged claims 1–4, 6, 7, 19, 23, 24, 27, and 28, claims 1 and 19 are the only independent claims. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A system for providing targeted advertising to a multimedia content end user, comprising:
 - at least one storage device, wherein at least one of said at least one storage device comprises at least one addressable and reserved storage space for storing digital advertising data;
 - at least one processor; and
 - software implemented by said at least one processor wherein said software comprises a program to reserve said at least one addressable storage space and wherein said software further comprises a program to select particular advertising data suitable for targeting to at least one end user based upon predefined criteria data, wherein particular advertising data is stored in said at least one addressable and reserved storage space and is accessible to the at least one end user.

*E. Prior Art References Applied by Petitioner and
Instituted Grounds of Unpatentability*

A trial was instituted on claims 1–4, 6, 7, 19, 23, 24, 27, and 28² based on the following grounds and items of prior art:

Reference(s)	Basis	Challenged Claim(s)
Hite ³	§ 102	1–4, 6, 7, 16–19, 23, 24, 27, and 28
Hite	§ 103(a)	4, 16, 18
Hite and Hill ⁴	§ 103(a)	1–4, 6, 7, 16–19, 23, 24, 27, and 28

Dec. 35–36; Pet. 18–66; Paper 42, 2.

II. ANALYSIS

A. *Claim Construction*

Petitioner and Patent Owner dispute the construction of certain claim terms. Pet. 13–18; PO Resp. 4–8. We apply the constructions of those terms set forth in Paper 44 (“Order”).

B. *The Parties’ Post-Institution Arguments*

In our Decision on Institution, we concluded that the arguments and evidence advanced by Petitioner demonstrated a reasonable likelihood that claims 1–4, 6, 7, 23, 24, 27, and 28 were anticipated by Hite and were obvious over Hite and Hill. Dec. 36. We subsequently modified our

² Although a trial was also instituted on challenged dependent claims 5 and 23 (Dec. 36), those claims were subsequently disclaimed (Ex. 2006). 37 C.F.R. § 42.107(e) (although this rule only directly concerns pre-institution disclaimer, under the same logic, we see no reason to maintain a trial on a disclaimed claim).

³ U.S. Patent No. 5,774,170, filed Dec. 13, 1994 and issued June 30, 1998 (Ex. 1009, “Hite”).

⁴ U.S. Patent No. 4,607,346, issued Aug. 19, 1986 (Ex. 1010, “Hill”).

Decision to institute a trial on all of the challenged claims and all of the grounds presented in the Petition. Paper 42, 2.

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). We previously instructed Patent Owner that “any arguments for patentability not raised in the [Patent Owner Response] will be deemed waived.” Paper 10, 6; *see also* 37 C.F.R. § 42.23(a) (“Any material fact not specifically denied may be considered admitted.”).⁵ 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).

There are arguments and evidence advanced by Petitioner to support its positions, though, that Patent Owner chose not to address in either its Preliminary Response (Paper 7) or Response (Paper 22), or that was not addressed in the Decision on Institution (Paper 9). We have evaluated those unrebutted arguments and the evidence in support, and we find the Petitioner persuasively established, with sufficient evidence, the manner in which the asserted prior art teaches corresponding elements of the claims. Pet. 18–66 (citing Exs. 1008–1010) (unchallenged portions only). Based on the preponderance of the evidence before us, we conclude that the prior art identified by Petitioner describes all limitations of the reviewed claims that were not contested by the Patent Owner in either its Preliminary Response

⁵ For the reasons noted in our Order (Paper 43, 2–3), however, for this proceeding, we will also consider the arguments set forth in Patent Owner’s Preliminary Response.

(Paper 7) or Response (Paper 22). *In re NuVasive*, 841 F.3d 966, 974 (2016). We address only the contested limitations below.

C. *Claims 1–4, 6, 7, 16–19, 23, 24, 27, and 28 as Anticipated by Hite*
Petitioner asserts that claims 1–4, 6, 7, 16–19, 23, 24, 27, and 28 are anticipated by Hite. Pet. 18–59 (citing Exs. 1008–1010). Patent Owner responds. Prelim. Resp. 20–28 (citing Exs. 1008, 1009, 2001); PO Resp. 11–51 (citing Exs. 1002–1004, 1009, 1020, 1021, 2003, 2005). Petitioner replies. Pet. Reply 4–13 (citing Exs. 1008–1010, 1028, 1029, 2003, 2005).

1. *Principles of Law*

Anticipation under 35 U.S.C. § 102 requires that “each claim element,” and “the claimed arrangement or combination of those elements,” “be disclosed, either expressly or inherently, in a single prior art reference.” *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332–33 (Fed. Cir. 2010) (citation omitted). Inherent disclosure is only established where the reference “must necessarily include” the “unstated limitation.” *Id.* (citation and emphasis omitted).

2. *Hite (Ex. 1009)*

Hite discloses a system that delivers and displays television and radio commercials targeted to individual viewers. Ex. 1009, [57], 1:7–10, 5:28–37. The disclosed system is intended to provide “viewers with advertisements which are matched to [their] interests and needs” and “advertisers with less waste and greater cost effectiveness.” Ex. 1009, 3:20–35.

In Hite’s system, “[e]ach commercial is analyzed as to its nature and focus” and a Commercial Identifier (“CID”) code “is appended.” Ex. 1009,

3:40–45. Commercials that can be preempted are imbedded with a CID code indicating “under what circumstances a more suitable commercial may be substituted.” Ex. 1009, 3:45–64. Additional codes, such as a context code and viewer reaction codes, can be “appended to the CID code to provide additional capabilities.” Ex. 1009, 4:19–5:16. Likewise, a set of CID codes is assigned to a viewer, based on the viewer’s needs and wants. Ex. 1009, 1:7–10, 3:65–4:2, 8:18–22. The display site can store and process CID codes for multiple viewers so that when the viewer is identified, commercials appropriate to that viewer are presented. Ex. 1009, 8:39–44.

Hite discloses that its system includes Ad Administration Facility (“AAF”) 100, which analyzes customers, commercials, and programs to construct CID codes. Ex. 1009, 8:64–9:1. The commercials and CID codes are conveyed to Ad Transmission Facility (“ATF”) 200, which combines them with audio/video programming and conveys the combined programming to Media Origination Facility (“MOF”) 300. Ex. 1009, 9:16–20, Fig. 1. Next, the package of programming, commercials, and CID codes is conveyed to display site 400. Ex. 1009, 9:32–37, 13:58–66, Fig. 1. Display site 400 includes commercial processor 438 and optional video storage device 456, from which “[c]ommercial [p]rocessor 438 can cause commercial signals to be stored or played back.” Ex. 1009, 14:12–13, 14:28–32, 14:42–46, Fig. 5.

According to Hite, “[t]he storage devices used” in its system “can be any form which is economical at the time of construction.” Ex. 1009, 10:44–46, 12:6–8. Examples “include magnetic, optical, and semiconductor implemented in tapes, disks, and chips.” Ex. 1009, 10:46–49, 12:8–11.

In one embodiment of Hite's system, "an individually addressable digital recording device (RD) with a unique address is installed at the display site in the television receiver, VCR, display device set-top[]box or modular decoder associated with the video provider." Ex. 1009, 6:60–66. "CID codes chosen for a particular display site (consumer) are transmitted to and stored in" the RD at the display site. Ex. 1009, 6:66–7:1; *see also* Ex. 1009, 4:1–2, 5:40–48, 6:60–66, 7:34–37 (concerning the same). Subsequently, commercials, each attached with "codes indicating the conditions and rules" required for its display, are "transmitted to the display site prior to the time of their intended use." Ex. 1009, 7:1–11, 7:36–38. The CID codes and display rules are stored in an Ad Queue in the commercial processor. Ex. 1009, 7:12–14.

Commercial processor 438 at the display site, which "is programmed to find and analyze the CID codes in each commercial," compares the codes attached to the commercials with the previously stored CID codes for the consumer. Ex. 1009, 4:3–15, 7:7–10, 7:24, 7:38–42. The commercials with CID codes that match the stored CID codes are "selected" and "stored in the storage at the display site." Ex. 1009, 7:11–12, 7:38–42. Then, during a break in a broadcast program, commercial processor 438 looks for CID codes in incoming commercials. Ex. 1009, 7:24–26. If there is a CID code, the processor applies the display rules for the stored commercials and substitutes the default, incoming commercials with stored commercials. Ex. 1009, 7:24–51.

3. *Independent Claims 1 and 19*

Petitioner contends that Hite discloses all of the limitations of each of independent claims 1 and 19. Pet. 18–25, 49–52; Pet. Reply 4–13.

Specifically, Petitioner argues that Hite's Optional Video Storage (OVS) Device 456 corresponds to the recited "at least one storage device" having "at least one addressable and reserved storage space for storing . . . advertising data." Pet. 19–20 (citing Ex. 1008 ¶¶ 411, 415, 417). As Hite's OVS Device 456 stores only commercials and their associated CID codes, Petitioner contends OVS Device 456 meets the aforementioned claim limitation, in that it is set apart just for storing advertising data. Pet. 20. Petitioner further contends that Hite discloses independent claim 1's limitation of "a program to reserve said at least one addressable storage space," and independent claim 19's limitation of "at least one processor configured to reserve said at least one addressable storage space," because commercial processor 438 at the display site executes a program "to selectively store targeted commercials" in OVS Device 456. Pet. 24–25 (citing Ex. 1008 ¶¶ 448). Petitioner argues Hite's advertising data is "target[ed] to at least one end user based upon predefined criteria data," because the CID codes used to target commercials to a user are based on customer demographics. Pet. 24–25 (citing Ex. 1008 ¶¶ 448).

a. "at least one storage device" (Claims 1 and 19)

Patent Owner contends Hite's OVS Device 456, which may include tapes, disks and/or chips, do not correspond properly to the recited "at least one storage device," because those tapes, disks and/or chips of Hite are not at the user's display device. PO Resp. 12. Patent Owner's contentions are misplaced because independent claims 1 and 19 are silent regarding the

location of the storage device.⁶ Therefore, Patent Owner's argument is not commensurate with the scope of independent claims 1 and 19.

Patent Owner further argues that Hite's OVS Device 456 does not correspond properly to the claimed storage device, because it is not capable of recording programming content selected by a user for later playback.

PO Resp. 14. We are not persuaded by this argument because, as discussed above, we are persuaded that a proper construction of "storage device" does not require recording programming content for later playback.

We are persuaded that Petitioner has shown sufficiently that Hite's OVS Device 456 corresponds properly to the "at least one storage device," as recited in each of independent claims 1 and 19.

b. "addressable and reserved storage space for storing digital advertising data" (Claim 1) or "addressable and reserved storage space for storing the particular advertising data" (Claim 19)

Patent Owner argues that Hite does not require OVS Device 456 to store *only* advertisement data, and, thus, Hite does not disclose an addressable and reserved storage space that is "set apart just for storing [digital/the particular] advertising data," as construed. PO Resp. 15. Patent Owner's expert, Dr. Kesan, asserts that one of ordinary skill in the art would have understood that nothing in Hite prevents OVS Device 456 from storing video other than commercials, and, further, that OVS Device 456 is the only logical place to store video programming along with the commercials.

PO Resp. 20–22 (citing Ex. 2003 ¶¶ 31, 33, 72–73). Patent Owner argues

⁶ By contrast, dependent claim 2 does recite explicitly that the storage device is "located within the end user receiver." Accordingly, under the doctrine of claim differentiation, independent claim 1 should not be construed to require that which is recited only in dependent claim 2.

that Petitioner's expert, Dr. Negus, agrees that OVS Device 456 is capable of storing information other than commercials, and testifies further that other data, such as CID codes, display rules, and frequency indicator codes, which Patent Owner contends cannot be considered advertising data, could also be stored on OVS Device 456. PO Resp. 23–25 (citing Ex. 2003 ¶ 71; Ex. 2005, 23:15–23, 24:1–21, 25:7–24, 27:12–14, 29:7–25). Patent Owner's contentions are, at least partly, premised on the notion that none of CID codes, display rules, and frequency indicator codes are “multimedia.” PO Resp. 23–25 (citing Ex. 2003 ¶ 71).

Petitioner replies that Hite never expressly states that video programming, separate from commercials, is stored anywhere other than the physical means 307 of Optional Playback Device 464. Pet. Reply 8 (citing Ex. 1029 ¶ 6). Petitioner further contends that Patent Owner's expert, Dr. Kesan, agrees that control data associated with the commercials is part of the advertising data. Pet. Reply 10–11 (citing Ex. 1028, 107:9–17).

We agree with Petitioner. Patent Owner's argument that OVS Device 456 is the only logical place to store programming is not supported by the evidence, as Hite explicitly discloses physical means 307 and Optional Playback Device 464, which are clearly not OVS Device 456, as storing video programming. Ex. 1009, 9:32–37, 13:62–63. Indeed, we have reviewed the cited portions of Dr. Kesan's testimony (Ex. 2003 ¶¶ 31, 33, 72–73), and that testimony is mostly directed to other assertions, with the exception of paragraph 73. The assertion in paragraph 73, however, that OVS Device 456 is the only logical place to store video programming, is unsupported by any citations to Hite. By contrast, Petitioner asserts, and we agree, that Hite does not disclose OVS Device 456 as storing anything other

than commercials. Pet. Reply 9–10 (citing Ex. 1009, 14:28–32, 14:40–46; Ex. 1028, 131:3–10, 138:11–18; Ex. 2005, 29:23–25).

With respect to Patent Owner’s argument concerning CID codes, display rules, and frequency indicator codes, we agree with Petitioner in several respects. First, we are persuaded that Dr. Negus’ testimony, that OVS Device 456 is capable of storing information other than commercials, does not indicate that OVS Device 456 cannot properly correspond to “addressable and reserved storage space for storing digital advertising data,” as recited in independent claim 1. We construe the aforementioned claim limitation as “data storage section set apart just for storing digital advertising data,” which does not exclude devices capable of storing information other than commercials. Order 6–9. We are persuaded that Hite’s disclosure that the only information actually stored on OVS Device 456 are commercials, even if OVS Device 456 is capable of storing other information, is sufficient to constitute “addressable and reserved storage space for storing digital advertising data.” The same analysis applies to the corresponding limitation of independent claim 19.

Second, we agree with Petitioner that Hite’s CID codes, display rules, and frequency indicator codes are advertising data. As an initial matter, we determine that the recited “advertising data” is not required to be “multimedia,” as asserted by the Patent Owner. Patent Owner purportedly bases its construction on claim language. PO Resp. 24 (“Claim 1 requires specifically identified advertising data to be ‘digital multimedia’ that is ‘received.’”). The only portion of independent claim 1, however, that even mentions “multimedia” is “a multimedia content end user,” and, not only is that limitation set forth in the preamble, generally rendering questionable the

weight to be accorded, if any, but we are unable to discern any relationship between “multimedia” and “advertising data.”⁷ Indeed, in its claim construction section, Patent Owner treats the “multimedia” language, from independent claims 1 and 19, separate from “advertising data.” PO Resp. 4 (“These additional elements make clear that the system of Claim 1 and the device of Claim 19 are designed to have the capability of storing multimedia programming data *in addition to* advertising data”) (emphasis added).

To that end, Hite discloses that “[e]ach commercial is analyzed as to its nature and focus and a Commercial Identifier (CID) code is appended,” “[i]f there was a CID at a break, the processor would apply the display rules for the stored, addressable ads,” and “[a]ppropriate storage is provided at the display site to store one or more of the commercials selected by matching the commercial’s CID with that CID determined as appropriate for the display site.” Ex. 1009, 3:43–45, 7:26–28, 7:37–42. Given those disclosures, we find that CID codes and display rules are related to the commercials, which we find sufficient to meet “advertising data.” Patent Owner, and Dr. Kesan, attempt to distinguish control data, which Dr. Kesan concedes is advertising data, from CID codes, display rules, and frequency indicator codes, which Patent Owner appears to assert are not. Tr. 108:10–15. Beginning with “display rules,” we are unclear how “display rules” can

⁷ Although not referred to by Patent Owner, independent claim 19 does recite “receiving digital multimedia data, wherein the digital multimedia data comprises particular advertising data.” While this language does establish a relationship between “multimedia” and “advertising data,” this does not assist Patent Owner, as the limitation refers to “digital multimedia *data*,” which, by the addition of the term “data,” encompasses information associated with “multimedia,” and not just “multimedia” alone.

be considered anything other than “control data.” With respect to CID codes, the assertion appears to be premised on the fact that CID codes disembodied from specific commercials are not control data. Tr. 109:10–18. The assertion is misplaced, as the claim term “advertising data” does not require that any “data” have any specific relationship with a particular commercial; a general relationship is sufficient. To that end, we find that a CID code being, among other things, a “Commercial Identifier,” is information sufficiently related to “advertising” to correspond properly to the recited “advertising data.” A similar analysis is applicable to “frequency indicator codes,” which we also find are, at a minimum, information related to advertising and, thus, “advertising data.”

For the reasons given, Petitioner has demonstrated adequately that Hite discloses “addressable and reserved storage space for storing digital advertising data,” as recited in independent claim 1, and “addressable and reserved storage space for storing the particular advertising data,” as recited in independent claim 19.

- c. *“a program to reserve said at least one addressable storage space” (Claim 1) and “at least one processor configured to reserve said at least one addressable storage space” (Claim 19)*

Related to the above arguments, Patent Owner further argues that Hite’s disclosure of general processing software that can *store* data in a storage device differs from software that would first *reserve* a section of storage and then store the data. PO Resp. 26 (citing Ex. 2003 ¶¶ 72–73). According to Patent Owner, since Hite does not disclose the negative limitation that OVS Device 456 must be reserved just for advertising data, Hite has no need to disclose the reservation of the storage space. PO Resp. 27 (citing Ex. 2003 ¶ 33). Alternatively, Patent Owner argues that

if OVS Device 456 stores only advertising data, as asserted by Petitioner, there would be no need to reserve a storage section just for advertising data, because the entire device is only capable of storing commercials.

PO Resp. 27–28.

As explained above, we agree with Petitioner that Hite’s OVS Device 456 is set apart just for advertising data, and, therefore, that OVS Device 456 is reserved. Further, with respect to the software, Hite discloses that commercial processor 438 at the display site is “programmed” to analyze CID codes to select commercials with codes that match the codes stored for a viewer, and the selected matching commercials are “stored” at the display site. Ex. 1009, 3:65–4:8, 6:66–7:12, 7:24–26, 7:38–42. Commercial processor 438 “cause[s] commercial signals to be stored” in OVS Device 456 by conveying signals that “control” storage of the commercials in that device. Ex. 1009, 14:28–32, 14:41–46, Fig. 5.

For the reasons given, Petitioner has demonstrated adequately that Hite discloses, “software implemented by said at least one processor wherein said software comprises a program to reserve said at least one addressable storage space,” as recited in claim 1, and “at least one processor configured to reserve said at least one addressable storage space,” as recited in claim 19.

d. “select particular advertising data . . . based upon predefined criteria data (Claim 1) and “particular advertising data for targeting to at least one end user based upon predefined criteria data” (Claim 19)

Patent Owner asserts that Petitioner’s identification of “certain CID codes directed to customer demographics or cost effectiveness” of Hite do not meet the above claim limitations, “because they relate . . . only to the content or cost of a commercial not to user preferences,” and that even under Petitioner’s overly broad construction, Hite’s CID codes are unrelated to

demographics or cost effectiveness. PO Resp. 28–29 (citing Ex. 1009, 1:32–33, 3:25–27, 8:29–31; Ex. 2003 ¶ 76). Petitioner responds that Patent Owner’s assertions are premised on an incorrect, overly narrow claim construction, but that, in any case, Hite meets even that construction. Pet. Reply 12–13 (citing Ex. 1009, 1:28–44).

We construe “predefined criteria data” as being met by customer profile data and demographics, which does not require that any such “data” be either “preferences,” or come from “users” themselves. Order 12–14. To that end, we are persuaded that CID codes are sufficiently related to customer profiles and demographics to correspond properly to the recited “predefined criteria data.” Ex. 1009, 1:28–32 (“First, advertisers believe that placing their commercials in specific programs will ensure that they reach the right kind of viewers (usually based on crude demographic assumptions, e.g., women 18–49 are likely to be the best prospects for their product.)”). Specifically, we find that Hite discloses expressly that CID codes are assigned to viewers based on demographic information. *See, e.g.*, Ex. 1009, 3:65–4:2 (“A suitable process is used to target prospective viewers of a set of advertisements using database search and list selection procedures. The result of this process is a set of appropriate CID codes for the prospective viewers. These CID codes are transmitted to the viewing device and stored.”).

Patent Owner asserts further “Hite teaches away from using demographics as a metric for advertising data: ‘Advertisers however are aware that demographic targeting is highly wasteful.’” PO Resp. 29 (quoting Ex. 1009 at 1:32–33). Patent Owner’s assertion is misplaced, as teaching away is a doctrine applicable to obviousness, and not anticipation.

Celeritas Techs., Ltd. v. Rockwell Int’l Corp., 150 F.3d 1354, 1361 (Fed. Cir. 1998). In any case, Patent Owner’s assertion is also incorrect, in that the context of the above-referenced sentence in Hite is concerning appending commercials to specific programs “based on crude demographic assumptions” of the viewers of such programs. Ex. 1009, 1:26–35. Indeed, the first sentence of the very next paragraph reads as follows: “Target marketing is the answer. Deliver your commercial to only those who are the best prospects.” Ex. 1009, 1:36–37. The balance of Hite is then directed to implementing such “target marketing,” and we have analyzed above already how CID codes are based on customer profiles and demographics.

Thus, Petitioner has demonstrated adequately that Hite discloses the “predefined criteria data,” as recited in each of independent claims 1 and 19.

e. Conclusion

Upon review of Petitioner’s evidence and analysis, and taking into account Patent Owner’s arguments and evidence, we determine that Petitioner has met its burden of showing, by a preponderance of the evidence, that each of independent claims 1 and 19 are anticipated by Hite.

4. Dependent Claim 2

Dependent claim 2 recites, “at least one storage device that comprises said at least one addressable and reserved storage space is located within said end user receiver.” Patent Owner asserts that Petitioner’s identification of Hite’s tapes, disks and/or chips as corresponding to the recited “storage device” is inadequate, because those tapes, disks and/or chips are not disclosed in Hite as being located at the display site, which is the only plausible disclosure of Hite that can correspond properly to the recited “end user receiver.” PO Resp. 29–30 (citing Ex. 1009, 10:41–49, 12:3–11;

Ex. 2003 ¶ 80). Petitioner responds that Patent Owner's assertions are misplaced, because OVS Device 456 of Hite is identified by Petitioner as corresponding to the recited "storage device," and that OVS Device 456 "is located in the end-user device at the display site." Pet. Reply 13 (citing Ex. 1009, Figs. 1, 5); *see also* Pet. 25–27 ("Video Storage Device that only stores CID codes and/or commercials with CID codes) is 'located within said end user receiver,'" where Petitioner identifies display site 400 as the "end user receiver."). We agree with Petitioner for the reasons stated. Indeed, while Patent Owner cites paragraph 80 of Dr. Kesan's Declaration in support of their position, in the very next paragraph, Dr. Kesan admits that "[t]he RD and the Optional Video Storage Device are located at the display site." Ex. 2003 ¶ 81.

Upon review of Petitioner's evidence and analysis, and taking into account Patent Owner's arguments and evidence, we determine that Petitioner has met its burden of showing, by a preponderance of the evidence, that dependent claim 2 is anticipated by Hite.

5. *Dependent Claim 3*

Dependent claim 3 "wherein said central control unit processes profile data associated with the at least one end user to generate the predefined criteria data." Patent Owner asserts that Petitioner's identification of Hite's viewer reaction codes as corresponding to the recited "profile data" is inadequate, because those "are aimed at feedback from the user, not established through analysis of customer activity history or from customer information inquiries acquired directly through system interaction or from outside customer profile data sources." PO Resp. 31–32 (citing Ex. 1003, 31:56–60; Ex. 2003 ¶88)). Petitioner responds as follows:

Nothing in the claims suggests that the profile data must come “through analysis of customer activity history or from customer information inquiries acquired directly through system interaction or from outside customer profile data sources.” In fact, the portions of the specification cited by Patent Owner only say that the profile data “can” and “may” be determined in these manners. Ex. 1003 at 31:56–60. Moreover, Patent Owner entirely ignores the disclosure of Hite, which states: “Customer Database 128 contains lists of consumers who would be viewing or listening to programming and would be served by commercials which match their needs and wants” and that this “list is supplied by agencies which have gathered data on the consumers and have created algorithms for determining which commercials are most appropriate for those consumers” such that the “combination of the algorithms and the data yield the Consumer CID codes.” Petition at 28; Ex. 1009 at 10:33–35, 10:54–62; Ex. 1008, ¶ 470.

Pet. Reply 14–15; *see also* Pet. 27–30 (also citing Ex. 1009, 10:33–35, 10:54–62; Ex. 1008 ¶ 470). We agree with Petitioner for the reasons stated.

Patent Owner further relies on arguments “predefined criteria data” similar to those set forth previously for the same limitation of independent claim 1. PO Resp. 32–33. Petitioner’s assertions to the contrary are persuasive for the same reasons as set forth above. Pet. Reply 12–13, 15.

Upon review of Petitioner’s evidence and analysis, and taking into account Patent Owner’s arguments and evidence, we determine that Petitioner has met its burden of showing, by a preponderance of the evidence, that dependent claim 3 is anticipated by Hite.

6. *Dependent Claim 4*

Dependent claim 4 recites “wherein the suitability criteria data comprises a key word.” We construe “suitability criteria data” the same as “predefined criteria data.” Order 12–14. Petitioner cites the following

portion of Hite as meeting the aforementioned claim limitation: “a viewer who requests more information about children’s aspirin may also be offered a subsequent commercial on children’s chewable vitamins.” Pet. 30–31 (citing Ex. 1009, 3:46–56, 4:52–61, Ex. 1008 ¶¶ 481, 482, 484). Patent Owner asserts that this portion of Hite does not use key words.

PO Resp. 33. Instead, Patent Owner asserts, relying on the testimony of Dr. Kesan, that one of ordinary skill in the art would have recognized that it would have been more likely that numerical product classification, and not key words, would have been used for this purpose. PO Resp. 33–34 (citing Ex. 2003 ¶ 92).⁸ Petitioner relies on its positions set forth in the Petition. Pet. Reply 15.

We agree with Patent Owner. Petitioner does not explain sufficiently, and the cited portions of Hite do not disclose, how the method by which the progression is made from “children’s aspirin” to “children’s chewable vitamins.” Dr. Negus’s testimony is similarly unavailing, as the only cited paragraph that plausibly supports their position, paragraph 484, is conclusory and unsupported. Absent such explanation or cited disclosure, we are unpersuaded that Petitioner has shown adequately that the recited “key word” is a part of the progression, as required to meet the claim.

⁸ At least a portion of Dr. Negus’s testimony aligns with this testimony of Dr. Kesan. Ex. 1008 ¶ 669 (“An exemplary targeting characteristic to optimize advertising format scenarios within Hite is the ‘context code’ that ‘could be appended to the commercial’s CID code’ to be ‘compared with program identification codes appended to the program signals’ such that a ‘commercial is displayed if it is in a specific channel or network or show’ as in the example of ‘skiing equipment commercials would be shown during a skiing down hill racing competition’ (emphasis added, see, for example, Ex. 1009 at 4:34–40).”).

Upon review of Petitioner's evidence and analysis, and taking into account Patent Owner's arguments and evidence, we determine that Petitioner has not met its burden of showing, by a preponderance of the evidence, that dependent claim 4 is anticipated by Hite.

7. *Dependent Claim 6*

Dependent claim 6 recites, in part, "processing circuitry configured to dynamically merge the particular advertising data with digital media content . . . during playback." Patent Owner asserts that dependent claim 7 recites a similar requirement, but includes the additional words "in real time," indicating that, under the doctrine of claim differentiation, dependent claim 6 requires that the particular advertising data and digital media content are stored merged, i.e., prior to "in real time." PO Resp. 34–36 (citing Ex. 2003 ¶ 93). Patent Owner's assertions are misplaced, because while dependent claim 6 does not recite "in real time," it does recite "during playback," indicating, even in the absence of the words "in real time," that the particular advertising data and digital media content are not stored merged.

Patent Owner asserts further that Petitioner has not met its burden of showing Hite discloses dynamic merging "during playback," as Petitioner does not address when any dynamic merging occurs. PO Resp. 36 (citing Ex. 2003 ¶ 94). Petitioner relies on the following:

Hite explains that "[d]igital signals which the customer is authorized to receive are descrambled and conveyed by electrical and/or optical connection 428 to a Digital to Analog Converter 430 which converts these signals into a form suitable for further processing and display" and "playback" of "certain commercials" stored in "Video Storage Device 456" under the "control of signals conveyed by electrical and/or optical

connection 462 from the Commercial Processor 438,” thereby merging at “connection 428” under processor control the digital media streams with the targeted commercials at appropriate commercial breaks. Ex. 1009 at 14:33–46, Fig. 5; Ex. 1008, ¶ 505.

The algorithm for inserting targeted advertisements is described as a “dynamic process.” Ex. 1009 at 8:27–35; Ex. 1008, ¶ 505.

Pet. 34; *see also* Pet. 34–35 (also citing Ex. 1008 ¶ 510).

We agree with Petitioner. As an initial matter, we note that the cited portions of column 8 of Hite do not have any bearing on these claim limitations, as the dynamic process described is concerning changes made to the algorithm, and not merging. Nevertheless, we are persuaded that the cited portions of column 14 and Figure 5 of Hite describe commercial processor 438 dynamically inserting commercials, at connection 428, into the digital media stream “during playback.” In particular, we note there is no storage downstream of connection 428.

Patent Owner additionally asserts, “Hite does not describe separate processing circuitry from the microprocessor to perform this element and Petitioner points to none.” PO Resp. 35–36. Patent Owner’s assertion is misplaced, however, as dependent claim 6 recites, “wherein said at least one processor comprises processing circuitry,” indicating that separate processing circuitry is not required.

Upon review of Petitioner’s evidence and analysis, and taking into account Patent Owner’s arguments and evidence, we determine that Petitioner has met its burden of showing, by a preponderance of the evidence, that dependent claim 6 is anticipated by Hite.

8. *Dependent Claim 7*

Dependent claim 7 recites, in part, limitations similar to those recited in dependent claim 6, with the addition of an “in real time” requirement with respect to the recited “dynamically merged” and “during playback” limitations. Patent Owner advances arguments similar to those set forth for dependent claim 6, with the additional argument that Petitioner does not further account for “in real time.” PO Resp. 37–38 (citing Ex. 1003, 31:49–52; Ex. 2003 ¶¶ 95–96). Petitioner relies on its positions set forth in the Petition. Pet. Reply 15. As an initial matter, we note that Patent Owner’s arguments unrelated to “in real time” are unavailing for the same reasons as set forth above in our analysis of dependent claim 6.

With respect to “real time,” the ’494 patent does make several references to that term. Ex. 1001, 3:49–61, 4:11–12, 5:12–39. In each case, we find that “real time” refers to playback of content as received, without storage for later playback. Petitioner identifies the following portion of Hite:

Digital signals selected from a digital data stream by Digital Demultiplexer 422 under control of the Commercial Processor 438 are conveyed by electrical and/or optical connection 424 to the Digital Descrambler 426. Digital signals which the customer is authorized to receive are descrambled and conveyed by electrical and/or optical connection 428 to a Digital to Analog Converter 430 which converts these signals into a form suitable for further processing and display. Also, the signals from the Digital Descrambler are optionally conveyed by electrical and/or optical connection 458 to an Optional Video Storage Device 456 which can either store or playback certain commercials under the control of signals conveyed by electrical and/or optical connection 462 from the Commercial Processor 438.

Ex. 1009, 14:33–46 (cited at Pet. 34 with respect to dependent claim 6, which itself was cited at Pet. 35, which concerns dependent claim 7). This disclosure refers to Figure 5 of Hite and, when considered in the aggregate, discloses a digital data stream path from receiver 410 to video display 450 that does not include storage.

Upon review of Petitioner’s evidence and analysis, and taking into account Patent Owner’s arguments and evidence, we determine that Petitioner has met its burden of showing, by a preponderance of the evidence, that dependent claim 7 is anticipated by Hite.

9. *Dependent Claims 16–18*

Claim 16 depends directly from claim 1 and recites the following:

wherein the particular advertising data stored in said addressable and reserved storage space is located in a first end user receiver, *wherein a second end user receiver is identified by a central control unit as being associated with the first end user receiver*, wherein the central control unit communicates with the second end user receiver, and *wherein the central control unit manages the delivery of the particular advertising data to the second end user receiver*.

Emphases added. Claims 17 and 18 each depend directly from claim 16.

First, in addressing the limitation “wherein a second end user receiver is identified by a central control unit as being associated with the first end user receiver,” Petitioner identifies the “central control unit” as Hite’s AAF 100 in combination with ATF 200 and MOF 300. Pet. 38. Petitioner then relies on Hite’s “viewer identification number” (Ex. 1009, 4:62–5:6) in conjunction with a disclosure of an “apparatus at the viewing site” that presents commercials appropriate to an identified viewer. Pet. 37 (citing Ex. 1009, 8:39–43). Based on these disclosures, Petitioner, with identical

supporting testimony from Dr. Negus, argues that Hite’s “viewer identification can be used to ‘associate’ . . . ‘end user receivers.’” Pet. 39; Ex. 1008 ¶ 526. Petitioner and Dr. Negus also refer to the AAF “at a signal origination site receiv[ing] the same viewer identification number from both of a first and a second such control devices.” Pet. 39; Ex. 1008 ¶ 529.

Here, Petitioner does not clearly argue—much less show—that the AAF 100, ATF 200, and MOF 300 (“central control unit”) actually have the capability to identify a first and second end user receiver as being associated with one another using the “viewer identification number.” Rather, Petitioner and Dr. Negus speculate that this identification number “can be” so used in the hypothetical situation where the same identification number is received from two control devices. Pet. 39–40; Ex. 1008 ¶¶ 526, 529. We are unpersuaded that such speculation is sufficient, however, to demonstrate that Hite expressly discloses, or must necessarily include, a “central control unit” able to identify a second end user receiver, as claimed.

Nor do the cited portions of Hite adequately support that Hite discloses the recited “second end user device.” Hite explains that a registration code, which “could be added to the CID code and stored at the point of display,” is “communicated back upstream to the signal origination site” when the relevant “commercial is successfully displayed,” so that the “origination point” can “accumulate[]” a “count . . . indicating the total number of commercials successfully displayed at all locations.” Ex. 1009, 4:62–5:3. Hite further explains that “a viewer identification number” can be “included in the acknowledgement messages centrally collected.” Ex. 1009, 5:3–6. While this passage does disclose that viewer identification numbers can be sent upstream from the display site and collected, it does not indicate

that the upstream AAF 100, ATF 200, or MOF 300 uses the numbers to identify that two display sites or control devices are associated, i.e., that there is a correlation between end user devices and “viewer identification number,” which is needed to show that multiple viewer identification numbers are an proxy for multiple end user devices.

In addition, Hite explains further that “[t]he apparatus at the viewing site can store and process CIDs for multiple individuals at the viewing site. When the viewer identifies himself or herself either directly or indirectly, the commercials appropriate to that individual are presented.” This passage relates to what the downstream viewing or display site does to ensure that it displays commercials appropriate for its particular viewer, once identified, including storing and processing CID codes for multiple users. Ex. 1009, 8:39–43; *see also* Ex. 1009, 3:65–4:15, 7:24–51 (disclosing the same). The disclosure actually weighs against Petitioner, as if codes for multiple users are stored at a given display site, it further weakens the correlation between “viewer identification number” and “end user device” needed to prove Petitioner’s position.

Second, turning to the limitation of “wherein the central control unit manages the delivery of the particular advertising data to the second end user receiver,” Petitioner argues, with identical supporting testimony from Dr. Negus, that because “multiple devices at the display site are ‘associated’ via ‘viewer identification,’” “delivery of the same ‘commercials appropriate to that individual’ is managed via the ‘central’” AAF 100. Pet. 38 (citing Ex. 1008 ¶ 526). Further, Petitioner contends, and Dr. Negus opines, that Hite’s AAF 100, along with ATF 200 and MOF 300, “delivers video/audio combined commercials that are targeted for consumption by a specific

display site or consumer according to CID codes including viewer identification number to the second control device.” Pet. 40; Ex. 1008 ¶ 529; *see also* Pet. 39; Ex. 1008 ¶ 527 (asserting the same).

As an initial matter, Petitioner’s arguments for claim 16 are often vague and generic regarding “the particular advertising data.” Yet the claim language is clear that “the particular advertising data” in claim 16 refers to the “particular advertising data” of claim 1, which is “select[ed]” as “suitable for targeting to at least one end user” by a software program implemented by the “at least one processor” and “is stored in [the] at least one addressable and reserved storage space.” Ex. 1003, 46:19–28, 47:64–48:4. In its analysis of claim 1, Petitioner argues that the recited “processor” is Hite’s “commercial processor within a device at the consumer display site” and this processor executes a program “to select” and store “commercials that are targeted for consumption by a specific display site or consumer according to CID codes.” Pet. 24–25; *see also* Pet. 21–22 (asserting the same). As explained above, we agree with Petitioner that Hite discloses the “particular advertising data” of claim 1, given Hite’s explanation that commercial processor 438 in the display site, or “home” or “point of usage,” analyzes CID codes in commercials and selects commercials with codes that match the stored codes for a particular viewer for storage and ultimately, display to the viewer. Ex. 1009, 4:3–15, 6:66–7:12, 7:24–50, 14:28–32, 14:43–46, Fig. 5. To meet the requirements of claim 16, it is this “particular advertising data”—commercial(s) selected by the processor at a display site as having CID codes that match the codes for a particular viewer—that must be delivered to a “second end user receiver,”

with the “central control unit” managing this delivery. Ex. 1003, 47:64–48:4.

Neither the Petition nor Dr. Negus’s provides a citation to any disclosure in Hite that supports that this specific advertising data is delivered to a second display site or control device—much less that the upstream AAF 100, ATF 200, and MOF 300 (“central control unit”) manage such a delivery. More generally, Petitioner does not direct our attention to any disclosure in Hite to demonstrate that its system coordinates delivery of the same commercial(s) to two associated display sites or control devices. *See, e.g.*, Pet. 37–38 (citing Ex. 1009, 8:39–43 (explaining that the “apparatus at the viewing site” processes CID codes and presents “commercials appropriate to” the viewer but not referring to any other viewing site receiving the same set of commercials), 17:33–54 (claiming two display sites that “selectively display[]” “different” advertisements intended for different consumers based on commands from the control devices)).

Petitioner’s and Dr. Negus’s conclusory representations that Hite does so—which lack adequate supporting citations to Hite or other evidence—are insufficient to meet Petitioner’s burden of a preponderance of the evidence. Pet. 38–40 (citing Ex. 1008 ¶¶ 508, 526–527); Ex. 1008 ¶¶ 526–529; 37 C.F.R. § 42.65(a); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 294 (Fed. Cir. 1985) (“Lack of factual support for expert opinion going to factual determinations . . . may render the testimony of little probative value . . .”).

Accordingly, Petitioner has not met its burden of showing, by a preponderance of the evidence, that Hite discloses, expressly or inherently, claim 16’s limitations of “wherein a second end user receiver is identified by

a central control unit as being associated with the first end user receiver” and “the central control unit manages the delivery of the particular advertising data to the second end user receiver.” Petitioner’s analysis of claims 17 and 18, which depend from claim 16, does not cure these deficiencies. Pet. 40–49. Accordingly, Petitioner’s showing is likewise inadequate for those claims as well.

10. *Dependent Claim 23*

Dependent claim 23 recites “wherein a central control unit located remote from said device is configured to perform a function selected from the group consisting of managing delivery of the data to the receiver, directing storage in the reserved storage space, dynamically merging with content, controlling sending an advertisement to a portable device, and combinations thereof, and wherein the central control unit processes profile data associated with the at least one end user to generate the suitability criteria data.” Patent Owner asserts that the use of the terms “consisting of,” in conjunction with “and,” requires that each member of the group must be accounted for. PO Resp. 42–43. We disagree, as the relevant portion of the limitation reads “*selected from* the group consisting of” (emphasis added), indicating that while the recited group is, undoubtedly, closed, only one selection from that closed group is needed to meet the claim. Contrary to Patent Owner’s assertions, this language differs from that in *Superguide Corp v. DirecTV*, 358 F.3d 870 (Fed. Cir. 2004), where the phrase “at least one of” was determined to modify each member of a list joined by the conjunction “and.” We are unclear how “selected from the group consisting of” can be read as modifying each member of a group, even if joined by the conjunction “and.”

Patent Owner asserts further that Petitioner improperly cites AAF 100 of Hite as corresponding to the recited “central control unit located remote from said device is configured to perform . . . directing storage in the reserved storage space,” when, in fact, commercial processor 438 of Hite actually performs the recited function. PO Resp. 43–44 (citing Ex. 1009, 6:9–12, 14:11–32; Ex. 2003 ¶ 111). Petitioner asserts that “(the Advertisement Administration Facility described above) is configured to perform the function of ‘directing storage in the reserved storage space’ (via the CID codes sent to a control device described above).” Pet. 53–54 (citing Ex. 1008 ¶ 616).

We agree with Petitioner, in that Patent Owner’s assertions are misplaced. Specifically, we agree with Patent Owner that commercial processor 438 of Hite performs the recited function. We are also persuaded, however, that AAF 100 of Hite performs that function as well, in that it manages sending CID codes to display site 400. Pet. 41–42 (this portion of the Petition concerns dependent claim 17, which was cited in the portion of the Petition (pages 53–55) concerning dependent claim 23) (citing Ex. 1008 ¶ 540; Ex. 1009, 9:28–37). As noted by Patent Owner, those CID codes are then used by commercial processor 438 in the manner indicated, for example, “directing storage in the reserved storage space,” as recited. Ex. 1009, 6:9–12, 14:11–32.

11. Dependent Claim 24

Dependent claim 24 recites “wherein the central control unit comprises a software program to select, based upon the program selectable criteria data associated with the at least one end user, the particular advertising data from the program selectable advertising data.” Patent

Owner asserts that while Petitioner identifies commercial processor 106 of AAF 100 as corresponding to the aforementioned claim limitation, it is, in fact, a different commercial processor 438 that actually performs the function. PO Resp. 46–48 (citing Ex. 1009, 4:3–8, 9:63–10:1; Ex. 2003 ¶ 117). Our analysis is analogous to that set forth above for dependent claim 23, in that we are persuaded that each of commercial processors 106, 438 of Hite perform the recited function. Pet. 55–57 (citing Ex. 1008 ¶¶ 627–631, 633; Ex. 1009 4:3–8, 8:24–33, 9:58–66). While we acknowledge that the way each of commercial processors 106, 438 of Hite may not perform the recited function in exactly the same manner, the identity of such details are not required by the claim.

12. Dependent Claim 27

Dependent claim 27 recites, in part, “wherein the particular advertising data is dynamically merged with digital media content received in real time by said receiver for the presentation of the particular advertising data during playback of the digital media content received in real time.” Patent Owner asserts that “Hite has no such disclosure distinguishing between real time or subsequent delivery to the end user,” and “Hite does not specify whether the replacement of advertisements which Petitioner identifies as dynamic merging occurs when the digital media is received, when it is stored, or specifically ‘during play back of the digital media.’” PO Resp. 48–49 (citing Ex. 1003, 31:49–52; Ex. 2003 ¶¶ 121–122).

Petitioner replies as follows:

Hite, however, discloses that if there was a CID at a break, the processor would apply the display rules for the stored, addressable ads and would substitute the addressed ad for the default ad, and eliminate it from the ad queue. Petition

at 23; Ex. 1009 at 7:24–30; Ex. 1008, ¶ 444. Moreover, as discussed by Dr. Negus, *Hite* never states that programming content is stored anywhere at the display site. Ex. 1029, ¶¶ 5–6. Accordingly, the only embodiment expressly contemplated by *Hite* involves storing the commercials for subsequent dynamic merging in “real time.”

Pet. Reply 16. We are persuaded by Petitioner under the same reasoning as set forth in our analysis of dependent claims 6 and 7, which involve similar claim limitations.

13. *Dependent Claim 28*

Dependent claim 28 recites “wherein the particular advertising data is configured for presentation to an end user by a method selected from the group consisting of a dynamic insertion of the particular advertising data in or around a user selected media program, a transfer of the particular advertising data to a second end user device, a menu screen, a header, a footer, an picture in picture, a split screen, an overlay, a keyword search item, a user selectable interactive advertisement, and combinations thereof.” Patent Owner asserts that the use of the terms “consisting of,” in conjunction with “and,” requires that each member of the group must be accounted for. PO Resp. 49–50. We disagree, as the relevant portion of the limitation reads “*selected from the group consisting of*” (emphasis added), indicating that while the group is, undoubtedly, closed, only one selection from that closed group is needed to meet the claim.

Patent Owner asserts further that Petitioner does not account properly for the following members of the closed group: a menu screen; a header; a footer; a picture in picture; a split screen; an overlay; a key word search item; a second end user device; and transfer of the particular advertisement data to a second end user device. PO Resp. 49–50 (Ex. 2003 ¶¶ 123–124).

Petitioner relies on its positions set forth in the Petition. Pet. Reply 15. In the Petition, Petitioner asserts the following:

Hite discloses that the “particular advertising data” is “configured for presentation to an end user” in several of the claimed methods as described below.

For example, by “a transfer of the particular advertising data to a second end user device.” See § VI(A)(2), at Claim 16 and 17; Ex. 1008, ¶ 669.

As a further example, by either “a keyword search item” or “a user selectable interactive advertisement,” because Hite discloses the use of “higher priority commercials” that are used to “target prospective viewers of a set of advertisements using database search and list selection procedures.” Ex. 1009 at 3:56–58, 3:65–4:1; Ex. 1008, ¶ 671. Also, Hite discloses a “series of viewer reaction codes can be included to cause additional relevant commercials to be presented in reaction to a viewer’s response to questions or other viewer interaction” wherein the “relevant commercials could be for more detailed information about the same product or service,” or “[a]lternatively, they could be for products or services which are likely to be of interest to the viewer based on the viewer’s responses,” such as when “a viewer who requests more information about children’s aspirin may also be offered a subsequent commercial on children’s chewable vitamins.” Ex. 1009 at 4:52–61; Ex. 1008, ¶ 671.

Pet. 58–59.⁹

We agree with Patent Owner. Beginning with “transfer of the particular advertising data to a second end user device,” Petitioner relies on its analysis of dependent claims 16 and 17. While the exact language between the relevant limitations of dependent claims 16 and 28 somewhat

⁹ Dr. Negus’s testimony at paragraph 671 of his Declaration largely mirrors the language in the Petition.

differs, the substantive analysis is the same. In short, Petitioner has not shown sufficiently that different “viewer identification numbers” of Hite correlates adequately with the required multiple “end user devices,” and, separately, Petitioner has also not shown sufficiently that Hite discloses delivering specific advertising data to a second display site or control device, which is needed to meet the “particular advertising data” limitation.

For “keyword search item,” our analysis is similar to that set forth above for dependent claim 4. Specifically, Petitioner does not explain sufficiently, and the cited portions of Hite do not disclose, the method by which prospective viewers are targeted, for example, the progression from a viewer’s interest in “children’s aspirin” to “a subsequent commercial on children’s chewable vitamins.”

For “a user selectable interactive advertisement,” Petitioner appears to rely on Hite’s disclosure of collecting viewer feedback for targeting prospective viewers via one or more of “viewer reaction codes,” “viewer’s response to questions,” “viewer interaction,” and view “requests.” Pet. 59. As an initial matter, we note that “a user selectable interactive advertisement” is not required to collect viewer feedback for targeting prospective viewers, and collecting viewer feedback for targeting prospective viewers can be done without “a user selectable interactive advertisement.” Accordingly, disclosure of one does not result in disclosure of the other.

Regardless, similar to our above analysis of “keyword search item,” Petitioner does not explain sufficiently, and the cited portions of Hite do not disclose, the method by which such viewer feedback is collected, i.e., via the recited “user selectable interactive advertisement” or otherwise. Absent

such explanation or cited disclosure, we are unpersuaded that Petitioner has shown adequately that such viewer feedback is collected via the recited “user selectable interactive advertisement,” as required to meet the claim.

Finally, although other members are listed in the closed group, Petitioner did not address those other members in the relevant portions of the Petition. *See generally* Pet. 58–59 (only addressing the above analyzed members).

14. Summary

In sum, for the reasons given, Petitioner has met its burden of showing, by a preponderance of evidence, that Hite anticipates claims 1–3, 6, 7, 19, 23, 24, and 27 of the ’494 patent. Petitioner has not met its burden of showing, by a preponderance of the evidence, that dependent claims 4, 16–18, and 28 are anticipated by Hite.

D. Claims 4, 16, and 18 as Obvious over Hite

Petitioner contends that Hite renders obvious claims 4, 16, and 18. Pet. 59–61. Patent Owner responds. Prelim. Resp. 28; PO Resp. 51–53 (citing Exs. 1002, 1008, 1010, 2003). Petitioner replies. Pet. Reply 16–17.

1. Principles of Law

Under 35 U.S.C. § 103(a), a patent claim is unpatentable as obvious if the claimed “subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” To establish obviousness in an *inter partes* review, it is petitioner’s “burden to demonstrate both that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *In re: Magnum Oil Tools Int’l, Ltd.*,

829 F.3d 1364, 1381 (Fed. Cir. 2016) (citation and quotation omitted). A petitioner cannot satisfy this burden by “employ[ing] mere conclusory statements” and “must instead articulate specific reasoning, based on evidence of record” to support an obviousness determination. *Id.* at 1380. Stated differently, there must be “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

The “factual inquiry” into the reasons for “combin[ing] references must be thorough and searching, and the need for specificity pervades.” *In re Nuvasive, Inc.*, 842 F.3d 1376, 1381–82 (Fed. Cir. 2016) (quotations and citations omitted). A determination of obviousness cannot be reached where the record lacks “explanation as to *how* or *why* the references would be combined to produce the claimed invention.” *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016); *see Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017) (holding obviousness determination improper where the record lacked a “clear, evidence-supported account of” “how the combination” would work).

2. *Dependent Claim 4*

Claim 4 depends from independent claim 1, and additionally requires “wherein the suitability criteria comprises a key word.” Petitioner argues that to the extent Hite does not disclose this additional limitation, it would have been obvious based on the knowledge in the art and Hite’s disclosure of a viewer reaction code that can be appended to CID codes to “cause additional relevant commercials to be presented in reaction to a viewer’s response to questions or other viewer interaction,” e.g., a request for “more

information about children’s aspirin” may result in “a subsequent commercial on children’s chewable vitamins.” Ex. 1009, 4:52–61; Pet. 30–31, 60. According to Petitioner, use of a keyboard for entry of a key word has long been known as a common way to search for materials of interest to a user. Pet. 60; Ex. 1008 ¶ 486. Petitioner contends that using a key word for Hite’s viewer responses would have been an “obvious design choice that would permit a predictable result of identifying information related to the key[]word.” Pet. 60; Ex. 1008 ¶ 486.

Patent Owner asserts that this portion of Hite does not use key words. PO Resp. 52. Instead, Patent Owner asserts, relying on the testimony of Dr. Kesan that one of ordinary skill in the art would have recognized that it would have been more likely that numerical product classification, and not key words, would have been used for this purpose. PO Resp. 52–53 (citing Ex. 2003 ¶ 92).

Essentially, Patent Owner assertions are the same as those advanced for the anticipation ground for the same claim. We agree with Patent Owner’s assertions for the same reasons as set forth above. Having said that, the assertions are misplaced, because this is an obviousness ground, and Patent Owner does not address the modification to Hite proposed by the Examiner. To that end, we are persuaded by Petitioner that it would have been obvious to code Hite’s viewer responses using keywords, as we agree that such a technique was common and well known at the time of the invention, and that it would have been an obvious design choice. Ex. 1008 ¶ 486. Indeed, Patent Owner acknowledges this possibility, as they do not assert that using key words would not have been known, just that it may not have been preferable under certain circumstances. PO Resp. 53 (citing

Ex. 2003 ¶ 92). Insofar as Patent Owner may be asserting that such a preference teaches away from a modification, we have considered it, but determine that it is outweighed by the evidence of the ubiquity of key word searches at the time of the invention. Indeed, we are unclear as to how, other than using numbers or key words, such searches could have been performed. *KSR*, 550 U.S. at 421 (“When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.”).

3. *Dependent Claims 16 and 18*

Claim 16 depends from independent claim 1, and additionally requires “wherein a second end user receiver is identified by a central control unit as being associated with the first end user receiver, wherein the central control unit communicates with the second end user receiver, and wherein the central control unit manages the delivery of the particular advertising data to the second end user receiver.” Petitioner asserts that to the extent we are unpersuaded that Hite discloses the aforementioned limitation, that such a limitation would have been obvious as follows:

As discussed above, Hite discloses first and second display sites and that display sites are associated with a viewer identification number. Ex. 1009 at 4:62–5:6; 17:33–54; Ex. 1008, ¶ 533. A person of ordinary skill in the art would recognize that two display sites are associated with the same viewer identification number. *Id.* A person of ordinary skill in the art would therefore configure a control unit to deliver particular advertising data for the viewer to the second end user receiver when, for example, the viewer identified by the viewer

identification number is viewing content at the second end user receiver. *Id.* This would provide the obvious benefit that targeted advertising could “follow” a viewer when she moves between different display sites. *Id.*

Pet. 60–61.

We are unpersuaded. Petitioner’s conclusory argument and evidence, including supporting testimony of Dr. Negus, fail to explain and support how an ordinarily skilled artisan would have modified Hite’s AAF 100, ATF 200, and MOF 300 (“central control unit”) to identify display sites or control devices associated with the same viewer identification number and to deliver the same “particular advertising data” targeted to the viewer to the second display site or control device. Petitioner never articulates, with any detail or specificity, what particular changes it is proposing to make to Hite’s system. Nor does Petitioner address whether a person of ordinary skill in the art would have had a reasonable expectation of success in making such changes to achieve the system recited in claim 16.

In sum, Petitioner’s generic arguments and vague supporting testimony from Dr. Negus lack the specificity and evidentiary support required to support a determination that Hite renders obvious claim 16. Petitioner’s argument and evidence for claim 18, which depends from claim 16, does not cure these deficiencies. Pet. 61; Ex. 1008 ¶ 561.

4. Summary

In sum, for the reasons given, Petitioner has met its burden of showing, by a preponderance of evidence, that Hite renders dependent claim 4 of the ’494 patent. Petitioner has not met its burden of showing, by a preponderance of the evidence, that dependent claims 16–18 are anticipated by Hite.

*E. Claims 1–4, 6, 7, 16–19, 23, 24, 27, and 28 as
Obvious over Hite and Hill*

Petitioner asserts that claims 1–4, 6, 7, 16–19, 23, 24, 27, and 28 of the '494 patent would have been obvious over Hite and Hill. Pet. 61–66. Patent Owner responds. PO Resp. 53–60. Petitioner replies. Pet. Reply 17–19.

1. Hill (Ex. 1010)

Hill discloses a storage device “partition[ed] . . . into a plurality of devices that have different access and storage characteristics.” Ex. 1010, [57], 2:47–51, 4:28–33. Hill provides for “automatic placement” of digital data on the partitioned device that best meets the storage characteristics of the data. Ex. 1010, [57], 1:8–11, 2:52–57, 8:15–20. In Hill, the storage characteristics of data are represented by its “access density” and are related to its “volume and frequency of access.” Ex. 1010, [57], 2:55–57, 4:36–57.

In one exemplary embodiment, Hill discloses, “disk storage device 20 including two disks 22 and 24,” with the surface of each disk “partition[ed]” into high access partition 40 and low access partitions 42, 44. Ex. 1010, 4:20–33, Figs. 3–4. Hill explains that the partitions are “defined to the system processor as two unique devices.” Ex. 1010, 7:9–12.

According to Hill, its storage technique “results in more cost effective data storage” and prevents bottlenecking, which occurs when a storage device receives access requests from a processor at a faster rate than the device can sustain and which often results in degradation of the rate at which data records are stored or retrieved. Ex. 1010, 1:13–17, 8:8–25.

2. *Independent Claims 1 and 19*

Petitioner contends that to the extent Hite does not disclose the “addressable and reserved storage space for storing digital advertising data,” as recited in independent claim 1, or “addressable and reserved storage space for storing the particular advertising data,” as recited in independent claim 19, the combination of Hite and Hill teaches these limitations. Pet. 61–66. Petitioner argues that Hill’s disclosure of a storage device with a high access partition and a low access partition, where the high access partition is “separately defined” as a “unique device[]” from the low access partition, and that the high access partition teaches an “addressable and reserved storage space” for storing digital data. Pet. 64; Ex. 1008 ¶¶ 427, 598. Petitioner further asserts that Hite discloses storage of digital advertising data in a hard disk drive. Pet. 64; Ex. 1008 ¶¶ 427, 598. According to Petitioner’s Declarant, Dr. Negus, Hite’s locally stored commercial data or advertising data would have been “accessed frequently, such as [by] reading stored advertisement data during each preemptable time slot.” Ex. 1008 ¶ 278; Ex. 1008 ¶ 266 (citing Ex. 1009, 7:24–28, 46–51) (disclosing substituting a stored commercial for a broadcasted commercial at a commercial break).

Petitioner, with supporting testimony from Dr. Negus, argues that a person of ordinary skill in the art would have combined Hite’s system with Hill’s teaching, of a high access partition, in order to increase storage efficiency and address Hite’s goal of providing “advertisers with less waste and greater cost effectiveness.” Pet. 65; Ex. 1008 ¶¶ 428, 599 (quoting Ex. 1009, 3:21–35; citing Ex. 1010, 4:54–57). According to Petitioner and Dr. Negus, one of ordinary skill would have had reason to combine Hite and

Hill—using Hill’s “high access partition allocated for high access data storage” to “store the high access advertisement data of Hite”—to “yield[] the completely predictable and desirable result” of “decrease[d] read and write times of advertisement data stored in Hite’s” storage devices, including optional video storage device 456. Pet. 65–66; Ex. 1008 ¶¶ 428, 599; *see also* Tr. 107:10–15 (asserting the same).

Patent Owner contends a person of ordinary skill in the art would not have been motivated to combine Hite with Hill. PO Resp. 56; Ex. 2003 ¶ 48. Patent Owner argues Dr. Negus’ assertion, that advertising data is “high access data,” is unsupported (PO Resp. 55), and, rather, advertising data has such low priority that there may not be storage room available on the user’s local receiver for advertising (PO Resp. 55–56 (citing Ex. 1002 ¶ 171)). Patent Owner contends that, although Hite teaches substituting preemptable commercials, Hite is silent regarding “preemptable time slots” and does not suggest a time bottleneck in substituting commercials. Prelim. Resp. 33–34.

Further, Patent Owner’s Declarant, Dr. Kesan, states there is no benefit to combining Hite with Hill, because all broadcast data needs to be accessed at the same speed. PO Resp. 57; Ex. 2003 ¶¶ 51–52; *see also* Tr. 119:5–10 (asserting the same). Patent Owner asserts creating high and low access sections in the storage device of Hite would result in two scenarios, neither of which provide a benefit to Hite. PO Resp. 57–58. First, assuming Hite’s storage device contains both advertising data and programming data, Patent Owner contends using the high access section for advertising data yields the “absurd result” of placing programming data in the slower, low access section. PO Resp. 57. According to Patent Owner, “the idea that the

programming would be lower access and the ads would be higher access just kind of doesn't stand a common sense test.” Tr. 119:2–4. Second, assuming Hite's storage device contains only advertising data, Patent Owner asserts using the high access section for advertising data results in having less space to store commercials because the low access partition would be empty. PO Resp. 58; *see also* Tr. 119:21–120:5 (asserting the same).

Petitioner responds that Patent Owner has not effectively rebutted the evidence provided by Dr. Negus, which “makes it clear that a POSITA would have looked to Hill's high access partition to further address an issue identified by Hite to increase storage efficiency and accomplish the object of providing ‘advertisers with less waste and greater cost effectiveness in delivering their messages only to those consumers.’” Pet. Reply 18; Ex. 1008 ¶ 428 (citing Ex. 1009, 3:21–35; Ex. 1010, 4:54–57).

We agree with Patent Owner that Petitioner's proffered rationale for combining Hite with Hill is not adequately supported by the record. Specifically, we agree with Patent Owner that Petitioner's assertion that advertising data is “high access” data is a conclusory statement that fails to “articulate specific reasoning, based on evidence of record” to support an obviousness determination. *In re: Magnum Oil Tools Int'l, Ltd.*, 829 F.3d at 1380. Although Hite discusses preempting broadcast commercials with stored commercials at broadcast breaks (*see* Ex. 1009, 7:24–30), Petitioner does not cite any portion of Hite, or provide any evidence at all, that explains how frequently the advertising data would have been accessed.

Accordingly, because Petitioner has not shown adequately that a combination of Hite and Hill teaches or suggests “addressable and reserved storage space for storing digital advertising data,” as recited in independent

claim 1, or “addressable and reserved storage space for storing the particular advertising data,” as recited in independent claim 19, we are unpersuaded that Petitioner has met its burden of showing, by a preponderance of the evidence, that independent claims 1 and 19 are obvious over Hite and Hill.

3. *Dependent Claims 2–4, 6, 7, 16–18, 23, 24, 27, and 28*

None of Petitioner’s assertions concerning dependent claims 2–4, 6, 7, 16–18, 23, 24, 27, and 28 are set forth as relevant to the aforementioned limitations of independent claims 1 and 19. See Pet. 64–65. Thus, for the same reasons discussed above with respect to independent claims 1 and 19, Petitioner has not met its burden of showing, by a preponderance of the evidence, that dependent claims 2–4, 6, 7, 16–18, 23, 24, 27, and 28 are obvious in view of Hite and Hill.

4. *Summary*

We are unpersuaded that Petitioner has met its burden of showing, by a preponderance of the evidence, that claims 1–4, 6, 7, 16–19, 23, 24, 27, and 28 of the ’494 patent would have been obvious over Hite and Hill.

III. CONCLUSION

Petitioner has met its burden of showing, by a preponderance of the evidence, that claims 1–4, 6, 7, 19, 23, 24, and 27 of the ’494 patent are unpatentable. Petitioner has not met its burden of demonstrating, by a preponderance of the evidence, that claims 16–18 and 28 of the ’494 patent are unpatentable.

IV. ORDER

Accordingly, it is:

ORDERED that claims 1–4, 6, 7, 19, 23, 24, and 27 of the '494 patent are held unpatentable;

FURTHER ORDERED that claims 16–18 and 28 of the '494 patent are not held patentable on the grounds set forth in this proceeding; 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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