Trials@uspto.gov
571-272-7822

Paper 50
Date: December 1, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FACEBOOK, INC., INSTAGRAM, LLC, and WHATSAPP INC.,
Petitioner,

v.

BLACKBERRY LIMITED,
Patent Owner.

IPR2019-00940
Patent 8,676,929 B2

Before MIRIAM L. QUINN, GREGG I. ANDERSON, and ROBERT L. KINDER, *Administrative Patent Judges*.

KINDER, *Administrative Patent Judge*.

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

Facebook, Inc., Instagram, LLC, and WhatsApp Inc. (collectively, "Petitioner") filed a Petition pursuant to 35 U.S.C. §§ 311–319 to institute an *inter partes* review of claims 1, 5, 8–10, 13, 16 ("the challenged claims") of U.S. Patent No. 8,676,929 B2, issued on March 18, 2014 (Ex. 1001, "the '929 patent"). Paper 2 ("Pet."). BlackBerry Ltd. ("Patent Owner") filed a Preliminary Response. Paper 8.

We instituted *inter partes* review of the challenged claims pursuant to 35 U.S.C. § 314. Paper 13 ("Dec."). Subsequent to our institution of review, Patent Owner disclaimed claims 5, 8, and 13 of the '929 patent. Ex. 2003 (Disclaimer in Patent Under 37 C.F.R. § 1.321(a) signed Dec. 18, 2019). This Final Decision does not address the claims that were disclaimed.

During the trial, Blackberry filed a Patent Owner Response (Paper 26, "PO Resp."), and Petitioner filed a Reply (Paper 35, "Pet. Reply"). Patent Owner thereafter filed a Sur-reply (Paper 47, "Sur-reply"). An oral hearing was conducted on September 3, 2020. Paper 49 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 1, 9, 10, and 16 of the '929 patent are unpatentable.

I. BACKGROUND

A. The '929 Patent (Ex. 1001)

The '929 patent is directed to a "System and Method for Pushing Information to a Mobile Device." Ex. 1001, code (54). The '929 patent claims priority through a series of continuation applications to provisional

application No. 60/307,265, filed on July 23, 2001. *Id.* at codes (63) and (60). The "invention relates to pushing information to a mobile handheld communication device," through the use of "an information source, a wireless network, and a proxy content server." *Id.* at 1:22–28, 51–53.

The Abstract describes detecting "[a] triggering event," such that "[w]hen the information relevant to the detected triggering event comprises content information, a meta tag is inserted to the content information." *Id.* at code (57). Further, "[t]he meta tag relates to display of specific one or more advertisements with the content information," and "[t]he content information that includes the meta tag is transmitted to the mobile device." *Id.*

The Specification describes storing information received from an information source in a "proxy content server" that sorts the information into a "plurality of channels based on pre-defined information categories." *Id.* at 1:55–60. In addition, "the proxy content server . . . automatically transmits information from a selected channel over the wireless network to the mobile device." *Id.* at 1:58–61. "Proxy Content Server 18 stores received information 12 to a particular channel 21 based on user specific information categories." *Id.* at 4:33–35. These concepts are illustrated in Figure 8, reproduced below:

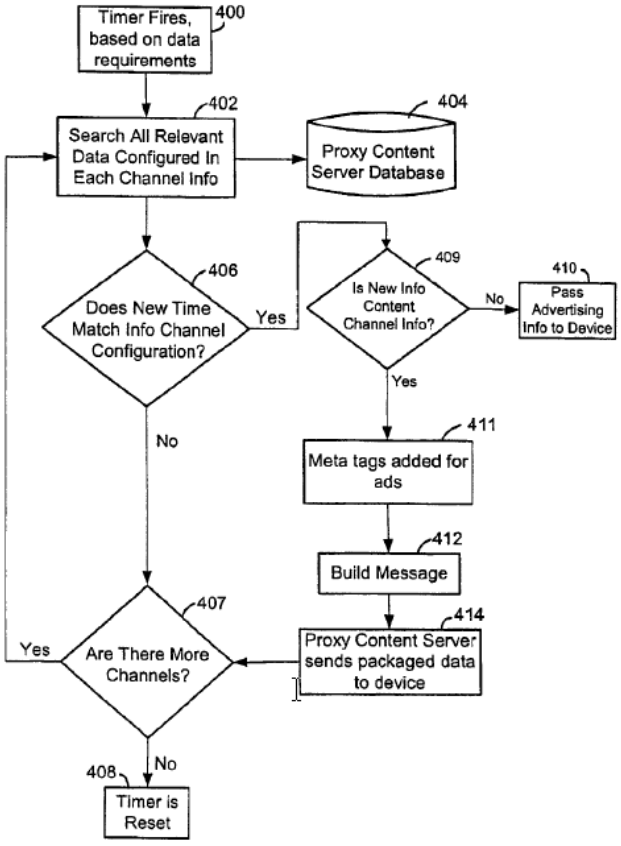


FIG. 8

Figure 8 of the '929 patent represents a flow diagram illustrating an exemplary method of pushing information to a mobile device based on a triggering event.

As depicted in Figure 8, information is pushed to the mobile device based on a "triggering event." One example of a triggering event is a timer firing, controlled by the Proxy Content Server. *Id.* at 13:24–27. Examples of significant time intervals that might trigger a timer are lunchtime, suppertime, and other significant times of the day. *Id.* at 13:27–31. If a triggering event is detected, Proxy Content Server 18 determines if any of the information categories assigned to channel 21 are relevant to the triggering event. *Id.* at 13:36–39. If the Proxy Content Server determines that the triggering event is relevant to information in a channel, the Proxy

Content Server then determines the type of information. *Id.* at 13:36–47. If it is advertising information, it is passed on to the mobile device; if it is content information, then meta tags are added. *Id.* at 13:47–51. The '929 patent provides one example of meta tags as "embedded control sequences that the Proxy Content Server 18 has inserted to indicate when advertising should be inserted." *Id.* at 8:32–34.

The Specification further describes how the Proxy Content Server determines whether to insert meta tags describing advertising information in the instance of content information. *Id.* at 11:66–12:16. "Once this insertion [of the meta tags] is completed the data package is sent to the mobile device . . . ." *Id.* This ensures "that the mobile device user has a consistent and transparent experience of receiving both information content and advertising content." *Id.* at 3:1–4. On the mobile device, Channel Viewer and Selector 45 displays combined advertising and content information to the user. *Id.* at 8:29–31 (The Channel Viewer and Selector "presents the content information 51A, 51B to the user and monitors the information for meta-tags within the content."), 8:44–47 (The Channel Viewer and Selector "uses the advertising tag to retrieve the corresponding advertising information and inserts it into the exact space indicated by the meta tag.").

B. Illustrative Claim

Claim 1, reproduced below, is illustrative of the claims at issue:

> 1. A method for pushing information to a mobile device, the method comprising:
>
> detecting a triggering event comprising a time triggering event;

> determining, by a server, information relevant to the detected triggering event from among information stored in one of a plurality of memory location channels, wherein the information is stored in the one of the plurality of memory location channels based on a category of the information matching a pre-defined category of the one of the plurality of memory location channels;
>
> when the information relevant to the detected triggering event comprises content information, inserting to the content information, by the server, a meta tag for one or more advertisements to be displayed with the content information, wherein the meta tag identifies the one or more advertisements and advertisement display requirements, and wherein the one or more advertisements are selected based on the detected triggering event; and
>
> transmitting the content information that includes the meta tag to the mobile device.

Ex. 1001, 14:11–31. While claim 1 covers a method for pushing information to a mobile device, independent claim 9 (also challenged) is directed to the server that pushes the information. *Id.* at 14:58–15:10.

C. Related Proceedings

According to Patent Owner, the following matters are related proceedings involving the '929 patent or related patents. Paper 4.

i. BlackBerry Ltd. v. Snap, Inc., No. 2:18-cv-02693 (C.D. Cal.)
ii. BlackBerry Ltd. v. Facebook, Inc. et al., No. 2:18-cv-01844 (C.D. Cal.), and related appeal, Blackberry Ltd. v. Facebook, Inc., Case No. 20-1256 (Fed. Cir.). Ex. 1039.
iii. BlackBerry Ltd. v. Twitter, Inc., No. 2:19-cv-1444 (C.D. Cal)
iv. Facebook, Inc. et al. v. BlackBerry Limited, IPR2019-00516
v. Facebook, Inc. et al. v. BlackBerry Limited, IPR2019-00528
vi. Facebook, Inc. et al. v. BlackBerry Limited, IPR2019-00706
vii. Facebook, Inc. et al. v. BlackBerry Limited, IPR2019-00787

viii. Facebook, Inc. et al. v. BlackBerry Limited, IPR2019-00899
ix. Facebook, Inc. et al. v. BlackBerry Limited, IPR2019-00923
x. Facebook, Inc. et al. v. BlackBerry Limited, IPR2019-00924
xi. Facebook, Inc. et al., v. Blackberry Limited, IPR2019-00925
xii. Facebook, Inc. et al., v. Blackberry Limited, IPR2019-00941
xiii. Facebook, Inc. et al. v. BlackBerry Limited, IPR2019-00942
xiv. Snap, Inc. v. BlackBerry Limited, IPR2019-00829.

D. Evidence Relied Upon

Petitioner relies on the following references:

Langseth, US Patent No. 6,671,715 B1, issued Dec. 30, 2003 (Ex. 1003, "Langseth");

Excerpts from Stephen Walther, *Sams Teach Yourself E-Commerce Programming with ASP in 21 Days* (2000) (Ex. 1004, "Walther");

Excerpts from Robbin Zeff et al., *Advertising on the Internet* (2nd ed. 1999) (Ex. 1005, "Zeff");

Excerpts from Anthony T. Mann, *Microsoft SQL Server 7 for Dummies* (1998) (Ex. 1006, "Mann");

Gilhuly, WO 01/22669 A1, published Mar. 29, 2001 (Ex. 1019, "Gilhuly"); and,

U.S. Patent No. 7,406,697 B2, filed Dec. 13, 2000, issued July 29, 2008 (Ex. 1020, "Laux").

Petitioner also relies on Declarations of Sandeep Chatterjee, Ph.D., filed as Exhibits 1002 and 1041. Patent Owner relies on a Declaration of Matthew B. Shoemake, Ph.D., filed as Exhibit 2004.

E. Grounds Asserted

Petitioner challenges claims 1–5, 8–10, 13, and 16 are of the '929 patent on the following grounds (Pet. 4):

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1,[1] 5,[2] 8–10, 13, 16	§ 103(a)[3]	Langseth, Walther, Zeff, Mann
1, 5, 8	§ 103(a)	Langseth, Walther, Zeff, Mann, Gilhuly
9, 10, 13, 16	§ 103(a)	Langseth, Walther, Zeff, Mann, Laux

F. Claim Construction

The parties propose claim constructions for a few claim terms and agree upon the claim interpretation of other terms. *See* Pet. 9–12; PO Resp. 10–14. After considering the parties' contentions and agreed constructions, we determine it necessary to construe only the term "meta tag" for purposes of this Final Decision.

1. Legal Standard

In an *inter partes* review for a petition filed on or after November 13, 2018, a claim "shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C.

[1] At page 21 of the Petition, claim 2 is erroneously listed as being part of this ground. The Petition does not have any analysis for claim 2, and Petitioner admits that claim 2 is not part of this proceeding. Pet. Reply 23 n.5.

[2] Claims 5, 8, and 13 are disclaimed. Ex. 2003.

[3] The relevant sections of the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112–29, 125 Stat. 284 (Sept. 16, 2011), took effect on March 16, 2013. Because the application from which the '929 patent issued was filed before that date, our citations to Title 35 are to its pre-AIA version.

282(b)." 37 C.F.R. § 42.100(b) (2019). In applying this claim construction standard, we are guided by the principle that the words of a claim "are generally given their ordinary and customary meaning," as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp*., 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (citation omitted). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Of course, "[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning." *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1358 (Fed. Cir. 2017). "Properly viewed, the 'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent." *Id.* (quoting *Phillips*, 415 F.3d at 1321).

2. "meta tag"

The parties dispute whether certain prior art references teach or disclose a "meta tag" as claimed and we find it necessary to offer our views of the meaning of this term. Notably, with some caveats, both parties seem to agree that "meta tag" can at least mean "embedded control sequence inserted to indicate when advertising should be inserted." *See* Pet. 11; PO Resp. 10.

Petitioner notes that it "will apply Patent Owner's proposed construction of an 'embedded control sequence inserted to indicate when advertising should be inserted' for purposes of mapping the prior art to the challenged claims." Pet. 11; Tr. 8:8–9:18. Petitioner points to the

Specification's description of meta tags as "embedded control sequences that Proxy Content Server 18 has inserted to indicate when advertising should be inserted." Pet. 11 (quoting Ex. 1001, 8:32–35) (emphases omitted).

"Petitioner agrees that the '<meta>' tag in HTML would not qualify as the 'meta tag' recited in the challenged claims, as by design, it could not be used to carry out the claimed function of identifying an advertisement and its display requirements." Pet. 11–12; Ex. 1002 ¶¶ 103, 104, 106–108, n.7. In fact, Dr. Chatterjee testifies that "I am not relying on an HTML '<META…>' tag in my analysis." Ex. 1002 ¶ 103, n.7. Dr. Chatterjee also opines that "[a] person of ordinary skill in the art would have understood an HTML tag for a banner advertisement to comprise a '**meta tag**.'" Ex. 1002 ¶ 104. Petitioner further explains "other tags in HTML can certainly perform these claimed functions. Nothing in the '929 patent excludes the use of other HTML tags to implement the claimed 'meta tag.'" Pet. 12.

Patent Owner agrees generally that "meta tag" includes at least "embedded control sequence inserted to indicate when advertising should be inserted," but Patent Owner further argues that meta tag should exclude all "hidden, descriptive text within HTML code." PO Resp. 10–11. Notably, Patent Owner later contends that the HTML IMG tag disclosed in Walther would be excluded under such a definition. *Id.* at 25–26.

Patent Owner relies primarily on reasoning from the district court's claim construction decision. *Id.* at 11–12; *see generally* Ex. 1017 ("Final Ruling on Claim Construction"). The district court, however, chose not to construe the term "meta tag." Ex. 1017, 20 ("For the above stated reasons, the term 'meta tag for one or more advertisements to be displayed with the content information' is not construed."). We determine that the district court

found it unnecessary to construe "meta tag," relying instead on "the claim language itself," and further the meaning of this term had no bearing on the district court's final adjudication. Ex. 1017, 20; *see* Tr. 16:18–17:19 (Board: "With respect to the District Court's claim construction for meta tag, did it have any application to the District Court's ultimate decision related to Section 101." Counsel for Petitioner: "No, . . . the Court ultimately declined to consider to construe meta tag . . . the statement that they're relying on is not definitional . . . [a]nd 'I don't need to construe it because the claims provide substantial guidance on what they require.'").

Patent Owner points to the district court's reasoning that the term "meta tag" is normally used to refer to descriptive text within HTML code that is hidden to the viewer of the page but readable by search engines. PO Resp. 11. The district court determined that based on the Specification that normal usage is not the same as how the term is used in the '929 patent. *Id.* (citing Ex. 1017, 19; Ex. 2004 ¶ 44). Patent Owner argues that "the District Court held that '[t]he weight of the evidence . . . supports the conclusion that the '929 Patent does not use the term "meta tag" to mean hidden, descriptive text within HTML code.'" *Id.* at 12 (citing Ex. 1017, 19; Ex. 2004 ¶¶ 46–47). Patent Owner requests that the Board adopt the district court's "unambiguous determination that 'the '929 Patent does not use the term "meta tag" to mean hidden, descriptive text within HTML code.'" *Id.* at 13 (emphases omitted).

In its Reply, Petitioner recognizes that "[m]ost of Patent Owner's arguments rest on claim construction arguments about 'meta tag,'" but Petitioner contends these arguments "derive no support from the claims, specification, or prosecution history." Pet. Reply 1. Petitioner reiterates that

the term "meta tag" should not be construed to exclude "hidden, descriptive text within HTML code." Petitioner argues this is an inappropriate negative limitation. *Id.* at 1–2; Tr. 15:1–7 ("Patent Owner is interpreting the District Court's construction to basically exclude any HTML tag. It would essentially read HTML out of the patent."). Petitioner contends that the "sole basis for this negative limitation is a sentence from the district court's claim construction order that . . . was not intended to provide an express construction." Pet. Reply 2. Relying on MPEP § 2173.05, Petitioner argues that a negative limitation must have a basis in the specification, yet Patent Owner does not cite anything in the Specification to support its proposed negative limitation, and Patent Owner fails to provide a single citation to anything in the intrinsic record. Pet. Reply 2.

Petitioner examines in detail the district court's analysis. *Id.* at 2–6. Petitioner argues that "[t]he district court's statement about 'hidden, descriptive text within HTML code,' was plainly intended to resolve the narrow question of whether the 'meta tag' of the '929 patent was the same thing as a 'meta tag' (i.e., <META>) in the context of HTML." *Id.* at 4. Petitioner argues that that district court's "remark about 'hidden, descriptive text within HTML code' was intended to resolve a particular factual dispute about whether the '929 patent used the term 'meta tag' consistent with its common everyday usage." *Id*. at 3; *see also* Tr. 12:13–13:18 (counsel for Petitioner explaining why district court used phrase "hidden, descriptive text" and arguing "[t]he reason the Court cited this discussion was it was trying to say these HTML meta tags, they're not the same thing as the meta tags that are in the patent . . . because the meta tags in HTML, they don't do anything; they just provide this descriptive text," but "meta tags in the

patents, they have to at least do two things: they have to identify an ad and specify a display requirement."). Based on Petitioner's arguments and evidence, we agree the district court's assessment was intended only to resolve the narrow question of whether the claimed "meta tag" was the same thing as a <META> tag in the context of HTML. We do not agree that this assessment was intended to exclude all HTML from the scope of the invention.

We agree with Petitioner that the intrinsic record does not provide support for Patent Owner's proposed negative limitation. As Petitioner asserts, we find the Specification contemplates that standard HTML may be used to deliver information to users. Pet. Reply 6 (citing Ex. 1001, 10:36–39); Tr. 18:1–15 (the '929 patent "expressly contemplates that you can use HTML to push out or to format the data that's being sent out to the mobile device" because the patent "specifically says 'HTML' or 'WML.'"). The Specification explains that the invention contemplates allowing information pushed to a mobile device to be provided using HTML accessible through a web browser. Ex. 1001, 10:36–39 ("enables the mobile device user to access and review HTML or WML based web pages with the mobile device").

A "meta tag" at least encompasses "an embedded control sequence inserted to indicate when advertising should be inserted." The Specification is clear that at least one embodiment of "[m]eta tags are embedded control sequences that Proxy Content Server 18 has inserted to indicate when advertising should be inserted." Ex. 1001, 8:32–35. We find persuasive Dr. Chatterjee's testimony that "while the statement from the specification at 8:32-35 may not provide an express or precise definition of 'meta tag,' it

would have provided a person of ordinary skill at least one example of something that would qualify as a 'meta tag' as claimed." Ex. 1002 ¶ 106. Further, we find persuasive Dr. Chatterjee's explanation as to the differences between a "meta tag" as claimed, and a "<META …>" tag. *Id.* ¶¶ 103, 104, 106–108, n.7. A "<META …>" tag in the HTML context provides descriptive information about an HTML document, and is hidden, as it is not displayed when the HTML document is viewed in a web browser. *Id.* ¶¶ 103, 104, 106–108, n.7; *see also* Tr. 13:24–14:13 ("we've made the argument that an HTML meta tag would not meet that construction without even a negative limitation. It just would not meet the construction because it's not capable -- it has no effect on the display of the page whatsoever, whereas the meta tag in the patent has to affect . . . identify the ad and specify the display requirements").

We agree with the district court that "the claims already include meaningful requirements that inform the meaning of the term 'meta tag,'" such as requiring that the "meta tag identify 'advertisement display requirements.'" Ex. 1017, 20. However, we further determine that the term "meta tag" at least encompasses "an embedded control sequence inserted to indicate when advertising should be inserted," as explained above. Although the claimed "meta tag" is not commensurate in scope with a <META> tag, we find no basis to exclude all hidden, descriptive text within HTML code from the scope of the claimed invention.

Although not presented as a claim construction issue, Patent Owner further argues that the term "meta tag" also requires information specifying timing or geographical location for triggering an ad display. *See* PO Resp. 33–34. Specifically, Patent Owner contends that a "meta tag" "must have

some impact as to '***when***' a mobile phone is to display an advertisement after receiving the meta tag." *Id.* (citing Ex. 2004 ¶ 104). Patent Owner seizes on the word "when" in the parties' generally agreed on construction (embedded control sequence inserted to indicate *when* advertising should be inserted). *Id. See also* Sur-reply 5 ("'when' is the language used in the specification and 'when' has a well-known meaning"). According to Patent Owner, "[t]he meta tag must do more than indicate where or how an advertisement should be placed, the plain language of the construction requires that it must indicate when it should be inserted." *Id.* at 6 (emphases omitted).

Petitioner responds that the word "when" merely specifies the point at which, during the display of information, an advertisement is to be inserted. Pet. Reply 9–10. Petitioner notes that the Specification provides guidance on the types of information meta tag would "normally include," such as "an advertising name" or "identifier," but that there is no discussion of any potential time or geographic location information for triggering an ad display or any suggestion "meta tag" must include such information. *Id.* (citing Ex. 1001, 8:29–38, 12:12–14); *see also* Tr. 25:2–4 ("using the meta tag for timing information, like time of day, isn't disclosed in the specification anywhere"), 21:8–11 ("Patent Owner . . . cannot identify a single example of a meta tag in a spec that includes timing information. It's not part of the meta tag."). Petitioner points out that "[o]ther portions of the specification describe the purpose of the 'meta tag' as specifying the precise location on the screen where advertising will be inserted." Pet. Reply 11 (citing Ex. 1001, 8:44–47, 10:64–67, 11:13–15). Petitioner argues that these

selections prove that the "meta tag" does not have to include a time or geographic location information. *Id.* at 10–11.

Further, Petitioner contends its position "is also consistent with the claim language, which describes the purpose of the meta tag as 'identif[ying] the one or more advertisements and advertisement display requirements.'" *Id.* at 11 (emphasis omitted). Petitioner concludes that the Specification's use of the word "when" (Ex. 1001, 8:33–35) "does not refer to a particular time or graphic location for triggering display of an advertisement. It instead, at most, indicates when, during the process of presenting the information, advertising should be inserted." *Id.* at 11. For the reasons discussed below, we find Petitioner's position persuasive.

As examined above, we agree with the district court that "meta tag" is best understood in the context of the surrounding claim language, but a "meta tag" at least encompasses "an embedded control sequence inserted to indicate when advertising should be inserted." This understanding of "meta tag" from the Specification was not meant to be an all-encompassing definition, but instead one example sufficient for resolution of this proceeding. Now, Patent Owner asks us to construe not just "meta tag" from the claims, but also a word ("when") from this example in the Specification. We see no reason to further define "when." We make the following findings in support of our determination not to define "when."

We determine that the Specification does not provide support for requiring a meta tag to control a time at which a mobile phone is to display an advertisement after receiving the meta tag. *See, e.g.*, Ex. 1001, 8:29–38. We agree with Petitioner and find that when content contains a meta tag, advertising should be inserted into the content information in accordance

with the meta tag. *See* Ex. 1041 ¶¶ 14–19, 15 ("[T]he word 'when' does not specify a particular time or location for presentation of the advertisement."), 17 ("It instead, at most, indicates when, during the process of presenting the information, advertising should be inserted."); Tr. 25:21–26:4 (Board: "So at a minimum, the 'when' -- your position is the 'when' that gets satisfied when the web page is displayed on the mobile device and in the mobile device -- the browser has to go get the link and display the tag information." Counsel for Petitioner: "Exactly. And I noticed I think Your Honor used the word 'when' correctly, consistent with ordering – in describing it. That's exactly what we're saying.").

The '929 "patent makes clear that content may – or may not – contain a meta tag." Ex. 1041 ¶ 19 (citing Ex. 1001, 10:64–11:2 ("[T]he Channel Viewer and Selector module 45 monitors the [content] information for meta tags within the content screen at step 93. If a meta tag is detected….") (underlining added by Dr. Chatterjee). Thus, we agree with Petitioner and find that "[t]he patent thus uses the term 'when' merely to describe the affirmative presence within content of an embedded control sequence indicating that advertising should be inserted." *Id.* "In other words, *when* content contains such an embedded control sequence, advertising should be inserted in accordance with that embedded control sequence." *Id.*

II. ANALYSIS

A petition must show how the challenged claims are unpatentable under the statutory grounds it identifies. 37 C.F.R. § 42.104(b)(4). Petitioner has "the burden of proving a proposition of unpatentability by a preponderance of the evidence." 35 U.S.C. 316(e).

Once a trial is instituted, we will "issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner." 35 U.S.C. § 318(a). Because Patent Owner disclaimed claims 5, 8, and 13 of the '929 patent (Ex. 2003), however, we will not address these claims in this Final Decision because they are treated as though they never existed. *See Sanofi-Aventis U.S., LLC v. Dr. Reddy's Labs.*, Inc., 933 F.3d 1367, 1373 (Fed. Cir. 2019) ("When Sanofi disclaimed the disclaimed claims, it effectively eliminated those claims from the patent leaving the . . . patent as though the disclaimed claim(s) had never existed.") (internal quotation marks, citations, and punctuation omitted for clarity).

A. Obviousness Based on Langseth, Walther, Zeff, and Mann

Petitioner challenges the patentability of claims 1, 9, 10, 16 of the '929 patent under 35 U.S.C. § 103(a) as obvious based on Langseth, Walther, Zeff, and Mann. Pet. 21–65. In support thereof, Petitioner identifies the disclosures in each reference alleged to describe the subject matter in the challenged claims and further relies on the testimony of Dr. Chatterjee (Exs. 1002, 1041).

Patent Owner contends that the combination of references fails to prove unpatentability. PO Resp. 25–40. In support thereof, Patent Owner relies on the testimony of Dr. Shoemake (Ex. 2004).

We have reviewed the parties' contentions and supporting evidence. Based on the final record, we are persuaded that Petitioner has demonstrated by a preponderance of the evidence that claims 1, 9, 10, and 16 of the '929 patent would have been obvious based on Langseth, Walther, Zeff, and Mann. We begin our analysis with the principles of law that apply generally to a ground based on obviousness, followed by a brief summary of each

reference, the parties' contentions, and then the reasons for our determination.

1. Principles of Law

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the 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 which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art;[4] and (4) where in evidence, so-called secondary considerations.[5] *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

An invention "composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co.*, 550 U.S. at 418. The relevant inquiry is whether Petitioner has set forth "some articulated reasoning with

[4] Based on the final record, including our review of the '929 patent and cited prior art, we find persuasive Petitioner's assessment of the level of ordinary skill in the art and apply it in this Final Decision. *See* Pet. 4 (A person of ordinary skill in the art would have "a bachelor's degree in software engineering, computer science, computer engineering, or electrical engineering with at least two years of experience in developing software and systems for storing, retrieving, and transmitting displayable information (such as text and images) over a computer network to another device."). Patent Owner accepts Petitioner's assessment. Ex. 2004 ¶ 29.

[5] Neither party has offered evidence of secondary considerations in the final record.

some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Further, "rejections on obviousness grounds cannot be sustained by mere conclusory statements." *Id.*

2. Overview of Langseth (Ex. 1003)

Langseth discloses "[a] delivery system for a personal intelligence network that actively delivers highly personalized and timely informational and transactional data." Ex. 1003, code (57). Langseth describes a system in which "[u]sers may subscribe to various channels of content and to specific services within each channel that are delivered when a predetermined condition occurs (e.g., based on a schedule, when an exception condition occurs, or in response to a specific initiation request)." *Id.* at 1:16–22.

Langseth discloses a system in which information is stored in a database in a plurality of "channels," each corresponding to a particular field of interest. *Id.* at 4:1–5. Users may subscribe to receive services provided for each channel, which may be delivered in the form of formatted content (such as an HTML email messages) at a certain frequency or based on the occurrence of an event. *Id.* at 4:5–11, 3:61–4:18. Figure 14 provides an example message containing information from a weather channel that can be sent to a subscribing user:

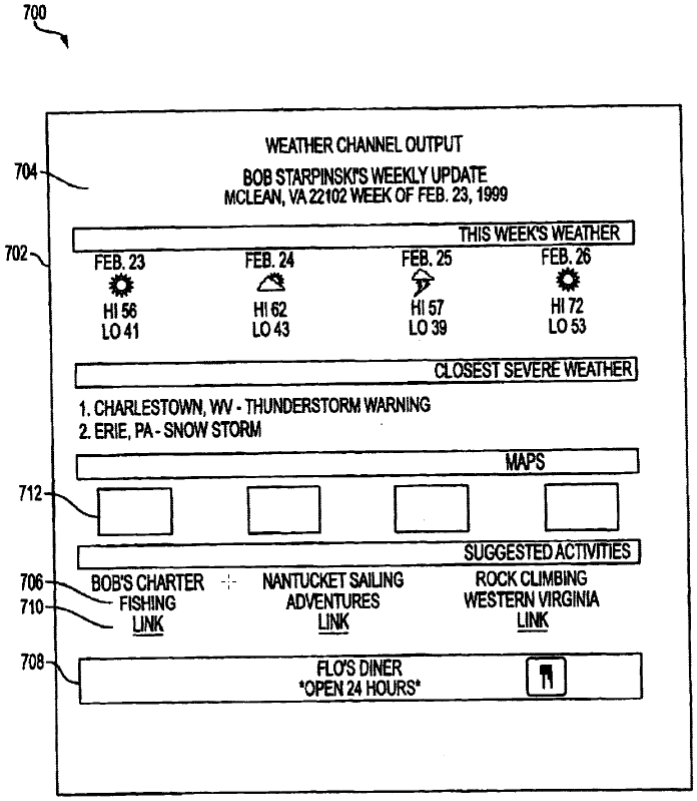


FIG. 14

Figure 14 of Langseth depicts an example of an HTML output that can be sent to a subscribing user. *Id.* at 7:11–12.

As shown in Figure 14, Langseth describes:

> Because of the graphical capabilities of HTML, the output may create more graphics such as the suns, clouds and other images depicted in embodiment 700. Specifically, this output example is for a weather channel output for a particular user. The weather channel output may comprise a weather forecast section 702, a name section 704, recommended activities 706, with click-and-buy links 710, and additional 708.

Id. at 23:11–18. As depicted in Figure 14, the HTML email also includes advertising information, such as "recommended activities 706, with click-and-buy links 710," as well as "additional 708" corresponding to an advertisement for "Flo's Diner." Accordingly, Figure 14 shows that

advertisements may be selected and inserted into an HTML document for transmission.

3. Overview of Walther (Ex. 1004)

Walther is an instructional book that teaches techniques for creating web pages that display advertising. Ex. 1004, Introduction ("how to build a commercial Web site using Microsoft's Active Server Pages technology"). Walther describes how to insert advertisements in HTML documents. *See Id.* at 515–517.[6] Walther discusses Microsoft's Active Server Pages ("ASP") technology and Internet Information Server ("IIS"), which can be used to insert a graphical banner advertisement into an HTML page. *Id.* at 8, 10 ("Some of the largest Web sites on the Internet use Internet Information Server."), 514–516 (describing banner advertisement functionality).

Walther discloses an IIS software component known as the "Ad Rotator" that provides a toolkit for inserting banner advertising into web documents. *Id.* at 515–517. Walther provides an example in which the Ad Rotator outputs an HTML tag for insertion into an HTML page:

> <AHREF="/adredir.asp?url=http://www.levlin.com/&image= http://www.levlin.com/images/yawn.gif"><IMG SRC="http:// www.levlin.com/images/yawn.gif" ALT="Check out the most boring site on the Internet!" WIDTH=468 HEIGHT=60 BORDER=1></A>

Id. at 516–517 (yellow highlighting added by Petitioner at Pet. 18). The yellow highlighted HTML tag information causes the browser to retrieve a banner advertising image from a particular URL <http://www.levlin.com/

[6] We cite to the original page numbering in the upper corner of this exhibit in accordance with Petitioner's citations.

images/yawn.gif>, and then display the banner ad using a width of 468 pixels and height of 60 pixels. *Id.*

3. Overview of Zeff (Ex. 1005)

Zeff, entitled *Advertising on the Internet* (2nd ed. 1999), teaches ways to use the Internet as a medium for advertising. *See, e.g.*, Ex. 1005, iii–x (Table of Contents), 1. Zeff describes how e-mail can be delivered as HTML, "which allow[s] messages to look like Web pages." *Id.* at 28. Zeff further describes how a graphical ad can be inserted into and displayed with certain content information. For example, Figure 11.22 below depicts a web page from The Weather Channel that includes a banner ad ("Dinner & a movie") inserted between content for "current conditions" and "5-day forecast":

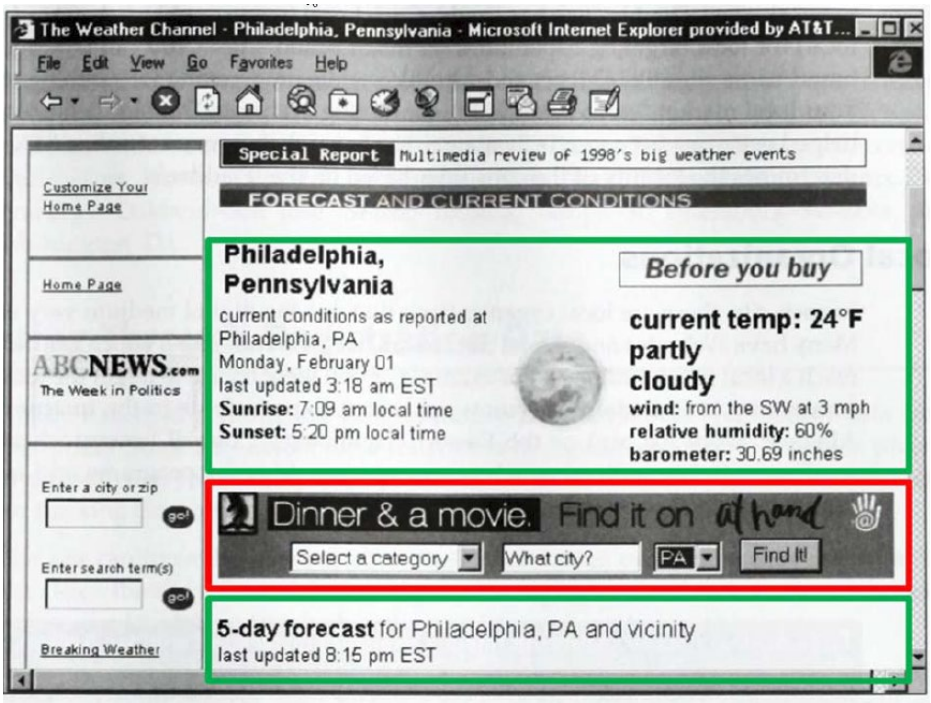


Figure 11.22 depicts local advertising on The Weather Channel targeting the Philadelphia area with green and red boxes added by Petitioner (Pet. 19, 44) to show banner advertisement (red) and content information (green). Ex. 1005, 273.

Zeff also explains that "[a]dvertisements delivered through *push* technology are sent (usually with content) directly to a user rather than waiting for the user to appear. Push technology includes email . . . ." *Id.* at 54.

4. Overview of Mann (Ex. 1006)

Mann, entitled Microsoft SQL Server 7 for Dummies (1998), describes features of Microsoft's SQL Server 7 relational database management system. *See, e.g.*, Ex. 1006, 1–5 (Introduction). Petitioner relies on Mann to show how information can be stored in certain memory locations. Pet. 20. Mann explains that Microsoft SQL Server 7 stores each database in a separate file. Ex. 1006, 73–74, 78, 82. Mann provides an example of a database named "CUSTOMERORDERS" that may be stored in a file named "E:\MSSQL7\DATA\CUSTOMERORDERS.MDF." *Id.* at 82. Mann further explains that the data (i.e., information) for a database is stored in the database file.

Mann further discloses that a database file is a memory location. Mann explains that "[a] file name is sometimes referred to as a physical name. A *physical name* is the physical location given to an object." *Id.* at 82; *see also id.* at 318 (defining "Physical Name" as "[a] physical location assigned to an object"). Mann further discloses that a database file is stored in a computer readable storage medium—i.e., "memory," for example, that Microsoft SQL Server 7 uses a computer's "C:\ drive" for storage by default. *Id.* at 31.

5. Analysis – Claim 1

i. Petitioner's Challenge

In challenging claim 1, Petitioner relies on Langseth (Ex. 1003), which describes a push-based system for delivering content and advertising

information to a mobile device. Pet. 12. According to Petitioner, "[a] server and database organize information into a series of 'channels,' such as News, Weather, Finance, among others." *Id.* (citing Ex. 1003, 4:1–5). Petitioner notes that "[i]n response to a time-based event, such as the arrival of a user-specified time, [Langseth's] server retrieves content and advertising information from one or more of those 'channels,' generates an appropriate message, and pushes the message to the user's mobile device for display." *Id.* Petitioner relies in particular on Figure 14 of Langseth, which depicts an example of such a message (an HTML email) containing advertising information and incorporating content from a personalized "Weather" channel.

Petitioner combines Langseth with three other references for this ground. According to Petitioner:

> Ground 1 thus combines Langseth with Walther (Ex. 1004) and Zeff (Ex. 1005), which describe well-known techniques for using HTML tags to insert "banner ads" into web documents, and Mann (Ex. 1006), which describes well-known techniques for storing information in relational databases. These references provide the routine implementation details unaddressed by Langseth, and render the claims obvious.

Pet. 14. Below, we examine each limitation of claim 1 as well as Petitioner's stated rationales for combining the references in a manner that teaches each limitation as well as the claim as a whole.

Petitioner persuasively shows that Langseth's disclosure of delivery of information (e.g., HTML emails) to a mobile device (*e.g.*, personal digital assistant) as well as Langseth's disclosures regarding automatic email generation and delivery as teaching the claimed method for pushing information to a mobile device. Pet. 21–23. Petitioner also relies on Zeff's

disclosure that "[a]dvertisements delivered through *push* technology are sent (usually with content) directly to a user rather than waiting for the user to appear. Push technology includes email . . ." as further demonstrating how Langseth's techniques of generating HTML email and transmitting it to a device, based on a time-based schedule, provide another example of pushing information to a device. Pet 24 (quoting Ex. 1005, 54; citing Ex. 1002 ¶ 66).

Next, claim 1 requires "detecting a triggering event comprising a time triggering event," and Petitioner relies persuasively on Langseth's step of determining the arrival of a selected time for processing a scheduled service. Pet. 24. Langseth describes a database system that stores "channels," each channel comprising information about a particular field of interest, and also how a user can subscribe to a "service," which provides information from a channel to the user (e.g., via email). *Id.* The service may be delivered based on a schedule with varied frequency such as end-of-day (after 5 p.m.) or intra-day (every hour between 10 a.m. and 5 p.m.). *Id.* 24–25 (citing 4:5–11, 4:20–26, 8:2–7). Thus, the "triggering event comprising a time triggering event" in Langseth takes the form of the arrival of the time that triggers the service to be processed.

Petitioner persuasively establishes that Langseth's data distribution server identifying and retrieving information from the "channel database" in response to the detected event (the arrival of the selected time for a service) teaches "determining, by a server, information relevant to the detected triggering event from among information stored in one of a plurality of memory location channels" limitations of claim 1. Pet. 26–28. As explained by Petitioner, "[t]he claimed 'plurality of memory location channels' is satisfied by Langseth's disclosure of multiple different 'channels,' *e.g.*,

finance channel, weather channel, etc., because each of Langseth's 'channels' corresponds to a different memory location." *Id.* at 28 (citing Ex. 1003, 4:1–5, 5:35–38) (emphasis omitted). Petitioner also persuasively shows how Langseth teaches "from among information stored in one of a plurality of memory location channels" through the data distribution server 62 selecting, in response to a triggering event, relevant data from within a particular channel. *Id.* *See also id.* at 29 (providing additional examples of services that retrieve and provide information from their respective channels) (citing Ex. 1003, 9:38–11:49).

Petitioner next relies on Langseth, as well as a combination of Langseth and Mann, to show that "the multiple channels in Langseth each disclose a separate 'memory location channel,' *i.e.* memory location." Pet. 30. "Langseth explains that its channels (such as finance and weather) can each have its own database." *Id.* (citing Ex. 1003, 5:37–39, 12:11–13, 4:13–16, 23:28–30). Thus, according to Petitioner, "[e]ach channel in Langseth therefore has a corresponding database," and "each channel database as disclosed in Langseth is a memory location because the database data must be stored in a particular location in memory." *Id.* (citing Ex. 1002 ¶ 80).

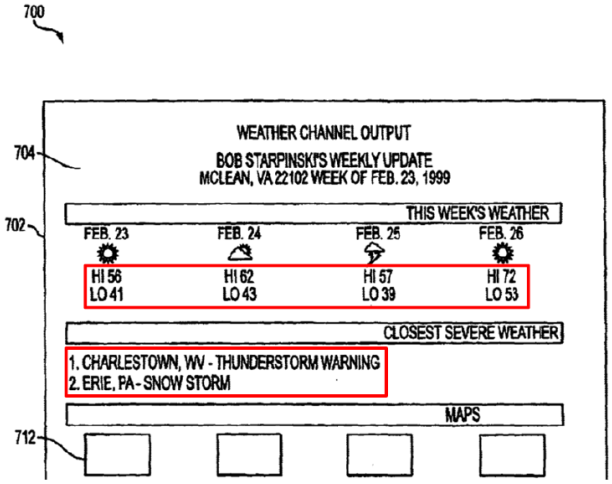
As additional support for the multiple channels limitations, Petitioner relies on Mann to "confirm[] that Microsoft SQL Server 7 stores each database in a file, *i.e.*, memory location." As noted by Petitioner, "Mann describes features of Microsoft's SQL Server 7 – the same software (and even version) expressly referenced in Langseth." Pet. 30–31. Further, "Mann explains that Microsoft SQL Server 7 stores each database in a separate file," and Mann demonstrates further support that a database file is

a memory location. *Id.* at 31 (citing Ex. 1006, 73–74, 78, 82, 125). According to Petitioner, and Dr. Chatterjee (Ex. 1002 ¶ 83), "[i]t would have been obvious to combine Langseth with Mann, predictably resulting in the database system of Langseth, implemented using Microsoft SQL Server 7 as described in Mann," and that the combination "would . . . have resulted in storing each channel database of Langseth in a 'memory location channel.'" Pet. 32. Further, Petitioner explains persuasively that "[a] person of ordinary skill, seeking to implement or improve Langseth, would have naturally turned to a reference such as Mann for additional information regarding databases and database storage – particularly considering that Langseth expressly refers to Microsoft SQL Server for implementing data storage." *Id.*

Petitioner identifies "the information is stored . . . based on a category of the information matching a pre-defined category" as being taught by Langseth's disclosure of a "pre-defined category" as a field of interest or subject matter for a particular "channel," such as "Finance" or "Weather." Pet. 33 (citing Ex. 1003, 3:66–4:5). Petitioner relies on Langseth's disclosure of "organizing and storing data into one or more 'channels' of data, where the data within a particular channel share some relationship, such as relating to the same general subject matter." *Id.* (citing Ex. 1003, 7:59–64, Fig. 2A). Petitioner also explains how "the information stored in a particular channel in Langseth corresponds to an information category associated with that channel," such as "Weather" information in the "Weather" channel, as depicted in Figure 2A of Langseth. Pet. 34. As argued by Petitioner, and supported by Dr. Chatterjee (Ex. 1002 ¶ 89), the category associated with the channel in Langseth is "pre-defined" because

"[t]he system could not store the information in an appropriate channel without first defining the channel and its associated category." Pet. 34.

Claim 1 next requires "when the information relevant to the detected triggering event comprises content information," and Petitioner explains persuasively how Langseth teaches "information retrieved from the channel database (*e.g.*, Finance, Weather) when the time for processing a scheduled service has arrived ('detected triggering event')." *Id.* at 35. Petitioner notes examples of "content" information delivered by Langseth, and concludes that "[t]he claimed 'content information' is thus satisfied by information from the channel that the system uses to generate messages sent to users who have subscribed to a service within that channel." *Id.* at 36. Petitioner provides, as an example, the content information depicted in Figure 14 of Langseth.



Petitioner's annotated Figure 14 of Langseth depicts an example of an HTML output that can be sent to a subscribing user. Pet. 37; Ex. 1003, 7:11–12.

According to Petitioner, "[t]he 'content information' in Figure 14 includes at least the information shown in the red boxes, specifically the

numerical values for the forecast of high and low temperatures and the text describing the severe weather warnings." Pet. 37 (citing Ex. 1002 ¶ 94). Petitioner argues that it would have been apparent that the weather "content information," as shown in Figure 14 above, would have been generated by a time-triggered service. *Id.* (citing Ex. 1003, 22:55–58, 10:19–34; Ex. 1002 ¶ 94, n.5). Likewise, Dr. Chatterjee explains persuasively how the detected triggering event corresponds in Langseth to the arrival of the selected time for a service to be processed, and content information includes the information from the channel that the system uses to generate the messages sent to users who have subscribed to a service within that channel. Ex. 1002 ¶¶ 93, 94. Thus, based on the final record, Petitioner explains persuasively how the information above constitutes "content information" under any reasonable definition of content information. Pet. 37. Patent Owner does not dispute these contentions.

Claim 1 next requires "inserting to the content information, by the server, a meta tag for one or more advertisements to be displayed with the content information." As discussed more below, Patent Owner contests whether the prior art teaches this limitation. According to Petitioner, this limitation is disclosed by Langseth, Walther (Ex. 1004), and Zeff (Ex. 1005). Pet. 39. Petitioner notes that Langseth teaches the ability to display "content information" (e.g., weather forecast and severe weather warnings) with "one or more advertisements" (e.g., "Flo's Diner *Open 24 Hours*") and further teaches how "the server" created the HTML email of Figure 14. *Id.* Petitioner relies on Walther's teaching of "including a meta tag for an advertisement (*i.e.*, HTML tag information for a graphical banner advertisement) with content information (*e.g.*, additional content on a web

page) and displaying the advertisement with the content information." *Id.* at 40.

More specifically, Walther "describes a well-known Microsoft technology known as Internet Information Server ('IIS'), which is expressly mentioned in Langseth," and it further "describes a built-in IIS feature known as the 'Ad Rotator Component' that is 'used to display banner advertisements on the Web pages of a Web site.'" Pet. 40 (quoting Ex. 1004, 16, 514). Walther's "Ad Rotator uses a 'schedule file' that defines (among other things) the graphical advertisements to show and their display parameters, such as width and height." *Id.* (citing Ex. 1004, 515–516; Ex. 1002 ¶¶ 101–102). According to Petitioner, and Dr. Chatterjee, "[t]he Ad Rotator as described in Walther creates HTML tags for an advertisement selected in accordance with the schedule file," and it "provides the following exemplary HTML tags:"

> <AHREF="/adredir.asp?url=http://www.levlin.com/&image=ht tp://www.levlin.com/images/yawn.gif"><IMG SRC="http://ww w.levlin.com/images/yawn.gif" ALT="Check out the most boring site on the Internet!" WIDTH=468 HEIGHT=60 BORDER=1></A>

Pet. 40 (quoting Ex. 1004, 516–517) (yellow highlighting added by Petitioner). Petitioner reasons that "the 'IMG' tag in yellow corresponds to the claimed 'meta tag'" because "[t]he 'IMG' tag above is a 'embedded control sequence' for HTML that specifies the name and location of the image file, and specifies how it will be displayed – in this case with a width of 468 pixels and height of 60 pixels ('WIDTH=468 HEIGHT=60')." Pet. 41 (citing Ex. 1002 ¶ 103).

Petitioner further argues that "[t]he IMG tag shown above . . . controls

when the advertising image should be inserted (placed) by the rendering software on the screen for viewing." *Id.* (citing Ex. 1002 ¶ 107 ("it is a sequence (of characters) that controls when the advertising image should be inserted (placed) by the rendering software").

In its Reply, Petitioner contends that the IMG tag shown above in yellow "include[s] HTML attributes including SRC, WIDTH, HEIGHT, and BORDER." Pet. Reply 13. Petitioner argues that "[t]hese attributes do not provide 'descriptive text within HTML code,' but rather, provide the actual HTML code for identifying the image file and specifying its precise size and position for display on the screen." *Id.* (citing Ex. 1041 ¶ 9; Ex. 1013 § 3.4, at 80–86). Such "HTML attributes do not provide the type of narrative descriptive text used, for example, by search engines to index a web page or site," according to Petitioner. *Id.* Based on these arguments, Petitioner concludes that even if the Board were to adopt Patent Owner's proposal of interpreting meta tag to include a negative limitation, it would still not exclude the HTML IMG tag in Walther because the "HTML IMG tag does not provide 'hidden, descriptive text within HTML code,' as that language is properly understood." *Id.* at 12. (emphasis omitted)

Addressing Patent Owner's argument concerning "when" advertising should be inserted, Petitioner reiterates that "the IMG tag 'controls when the advertising image should be inserted (placed) by the rendering software on the screen for viewing.'" Pet. Reply 14 (citing Ex. 1002 ¶¶ 107–109). Petitioner explains that "when inserted in an HTML file, it will cause the advertisement to be displayed to the user." *Id.*

The claim limitation also recites, "inserting to the content information, by the server, a meta tag," and Petitioner has shown persuasively how

Walther would insert the HTML tag when generating the HTML email. Pet. 43 (citing Ex. 1002 ¶¶103, 109, 116; Ex. 1004, 516–517). Petitioner relies on the combination of Walther with Zeff as teaching this element because "Zeff provides a concrete example of banner advertisement *inserted* to content information." Pet. 44. Zeff's Figure 11.22 depicts a web page from "The Weather Channel" that includes a banner ad ("Dinner & a movie") inserted between content information for current weather conditions and 5-day forecast:

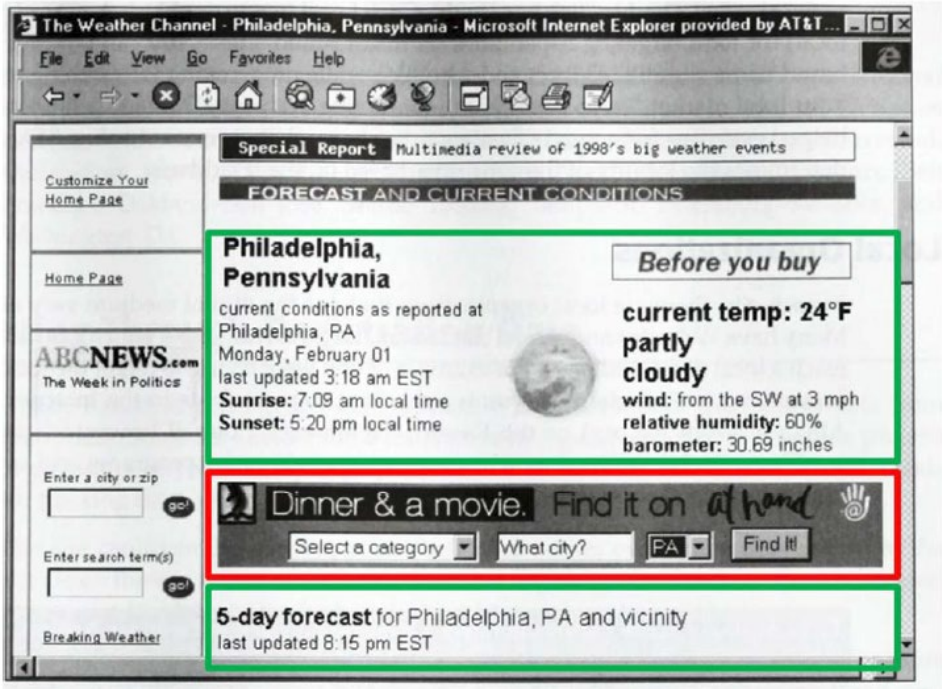


Figure 11.22 Local advertising on The Weather Channel targeting the Phildelphia area.

Petitioner's annotated Figure 11.22 of Zeff depicting advertising on The Weather Channel for the Philadelphia area with added green and red boxes. Pet. 44.

Petitioner adds the red box to show the banner advertisement and the green boxes to show content information. *Id.* According to Petitioner, and Dr. Chatterjee, "[a] person of ordinary skill would have understood that the appearance of the banner advertisement (in the red box) between the two

pieces of content information above means that the HTML tag for the banner ad was inserted between them." *Id.* at 44–45 (citing Ex. 1002 ¶ 111).

Thus, according to Petitioner, "Langseth, in combination with Walther and Zeff, therefore renders obvious the step of 'inserting to the content information, by the server, a meta tag for one or more advertisements to be displayed with the content information.'" Pet. 45. Petitioner reasons that the Zeff figure above "shows a banner ad (in the red box) inserted between the content information (shown in green boxes), which is displayed with the content information," and that "Walther teaches that placing that banner ad involves inserting a 'meta tag' that identifies the advertisement." *Id.* (citing Ex. 1002 ¶ 112). When the teachings of these references are combined as proposed by Petitioner, they "would have produced an HTML email (such as Figure 14) in which a banner advertisement was inserted between the content information, by the server in Langseth inserting a meta tag at that location in the HTML document, as taught in Zeff and Walther." *Id.* (citing Ex. 1002 ¶ 112).

Based on the final record, Petitioner provides a persuasive rationale for combining the cited teachings in the proposed manner, which is unchallenged by Patent Owner. According to Dr. Chatterjee, Langseth, Walther, and Zeff are analogous references in the field of Internet and web-based communications. Ex. 1002 ¶ 114. Further, Zeff and Walther both acknowledge that email can be delivered as HTML, and Langseth specifically mentions using IIS and ASP technologies, the same ones described in Walther. *Id.*; *see also* Ex. 1003, 13:18–25; Ex. 1005, 28, 30; Ex. 1004, 423. Petitioner also explains how the teachings of Walther would have been basic knowledge to a person of ordinary skill, such that Walther's

HTML-based techniques for inserting advertising information in an HTML file were known industry standards and easily adopted. Pet. 46. Petitioner also contends that Zeff provides express motivation for inserting an advertisement in an HTML document, as described by Walther. *Id.* at 46–47 (quoting Ex. 1005, 30). Finally, as explained by Dr. Chatterjee, inserting a meta tag for the advertising information into an HTML e-mail, rather than inserting the advertisement directly, would have also enabled the transmission of smaller email messages. Ex. 1002 ¶ 116.

Petitioner further explains how Walther's teaching of a "meta tag" identifies the advertisement as well as the advertisement display requirements. Pet. 48. As for the claim limitation that "wherein the one or more advertisements are selected based on the detected triggering event," Petitioner establishes persuasively how Langseth and Zeff disclose how the advertisements are selected based on the detected triggering event. *Id.* at 49–50. Petitioner reasons that "[i]t would have been obvious in view of Zeff that the *advertising information*, as well as the content information, would have been selected based on the detected triggering event," specifically the time trigger of Langseth. *Id.* at 50–51 (citing Ex. 1002 ¶ 124).

The final claim 1 limitation requires "transmitting the content information that includes the meta tag to the mobile device." Petitioner explains persuasively how the content information from the channel database in Langseth (e.g., weather or other information), which includes the HTML banner advertising image with a meta tag as taught by Walther and Zeff, is transmitted to the mobile device in the form of an HTML email. Pet. 51–53.

ii. Patent Owner's Argument

Most of Patent Owner's arguments rest on claim construction positions concerning "meta tag" that we have rejected for the reasons set forth above. *See* PO Resp. 25–27 ("An 'IMG' tag is 'hidden, descriptive text within HTML code,' and therefore not a meta tag, as claimed."). Patent Owner alleges two main shortfalls in the prior art: there are no meta tags (PO Resp. 25), and there is no disclosure of inserting meta tags to the content information (*id.* at 36).

Patent Owner first argues that none of Petitioner's references teaches a meta tag for one or more advertisements as claimed. *Id.* at 25. Patent Owner contends that Walther's HTML "IMG" tags are not "meta tags." *Id.* at 26. Patent Owner presents two main arguments to support this conclusion. The first is that "[a]n 'IMG' tag is 'hidden, descriptive text within HTML code,' and therefore not a meta tag, as claimed." *Id.*

The second argument looks to the agreed definition of "meta tags" ("embedded control sequence inserted to indicate when advertising should be inserted"), and Patent Owner argues that Walther's IMG tag "does not 'indicate *when* an advertisement should be inserted' as required by the construction." *Id.* at 30–31 (emphasis added). Instead, Patent Owner contends an IMG tag indicates what advertisement should be inserted—i.e., the name and location of the image file, and how the advertisement will appear on the webpage—*i.e.*, its width and height. *Id.* at 31. Patent Owner distinguishes Walther because the identified meta tag allegedly "does not, however, indicate ***when*** the advertisement should be inserted . . . after a 'time triggering event' is detected." *Id.* (citing Ex. 2004 ¶ 93).

As explained more below, each of these first two Patent Owner arguments have been considered in the claim construction analysis above

and rejected.

Patent Owner additionally argues that "[i]rrespective of whether any of the prior discloses meta tags, none of Petitioners' prior art discloses 'inserting ***to the content information***, by the server, ***a meta tag*** for one or more advertisements to be displayed with the content information,' as required by the claims." PO Resp. 36 (citing Ex. 2004 ¶¶ 123–125). Patent Owner contends that as shown in Zeff's Figure 11.22, "a banner advertisement (outlined in red) is included in an HTML web page next to weather forecast information (the alleged 'content information,' outlined in green)," but "[t]his banner advertisement is not a 'meta tag,' and does not meet the 'inserting to the content information . . . a meta tag' limitation of the claims." *Id.* at 37.

Patent Owner also contends that Petitioner's expert admitted during a deposition that the ALT attribute in HTML IMG tags is not a meta tag. PO Resp. 27 (citing Ex. 2006, 82:15–17). Patent Owner further argues that the ALT attribute is not optional in Walther's Ad Rotator, and thereafter concludes that "Walther's IMG tag is never a meta tag." *Id.* at 28 (citing Ex. 2004 ¶ 110); Tr. 55:1–27.

iii. Analysis (claim 1)

Based on the final record before us, we find Petitioner's contentions with respect to claim 1 persuasive. Petitioner's analysis of the combination of Langseth, Walther, Zeff, and Mann, as supported by Dr. Chatterjee, explains how the combination teaches all the elements of claim 1 and provides several persuasive rationales for combining the teachings. Based upon Petitioner's evidence presented, including the testimony of Dr. Chatterjee, we are persuaded by Petitioner's evidence and argument. Below,

we examine in detail those limitations challenged by Patent Owner. For all other limitations not challenged, we have reviewed the evidence and adopt Petitioner's reasoning and evidence as set forth above.

With regard to Patent Owner's first argument that Walther's HTML "IMG" tags are not "meta tags," we disagree. As we explained in detail above in the claim construction analysis (§ I.F.2), we find no basis to exclude all hidden, descriptive text within HTML code from the scope of the claimed invention. We credit Dr. Chatterjee's testimony that "[t]he 'IMG' tag [identified by Petitioner] is an 'embedded control sequence' for HTML that specifies the image file and how it will be displayed, in this case, with a width and height of 468 by 60 pixels, respectively ('WIDTH=468 HEIGHT=60')." Ex. 1002 ¶ 103. We also credit Dr. Chatterjee's distinction between a "'<META …>' tag" that "provides descriptive information about an HTML document," and the claimed "meta tag," to conclude, "I am not relying on an HTML '<META…>' tag in my analysis." *Id.* ¶ 103 n.7, ¶¶ 109–110. Dr. Chatterjee goes on to explain, and we agree, that "[a] person of ordinary skill in the art would have understood an HTML tag for a banner advertisement to comprise a 'meta tag.'" *Id.* ¶ 104. We have considered Dr. Shoemake's testimony to the contrary as to definition of "meta tag" and that an IMG tag is not a meta tag, but this testimony does not point to any portion of the Specification requiring the exclusion of all hidden, descriptive text within HTML code. *See* Ex. 2004 ¶¶ 53–55. Thus, we conclude Dr. Shoemake's position is based on an overly narrow claim scope as detailed above.

Further, we have interpreted claim 1 to only require that when content contains a meta tag, advertising should be inserted into the content

information in accordance with the meta tag. *See* Ex. 1041 ¶¶ 14–19, 15 ("[T]he word 'when' does not specify a particular time or location for presentation of the advertisement."), 17 ("It instead, at most, indicates when, during the process of presenting the information, advertising should be inserted."). (emphasis omitted)

Given these interpretations, Petitioner explains persuasively how Walther's IMG tag "controls when the advertising image should be inserted (placed) by the rendering software on the screen for viewing." Pet. 41 (citing Ex. 1002 ¶¶ 107–109). Walther's IMG tag is an embedded control sequence because it specifies the name and location of the image file as well as how it will be displayed. *Id.* (citing Ex. 1002 ¶ 103). "And when inserted in an HTML file, it will cause the advertisement to be displayed to the user." *Id.* We agree with Petitioner that "the HTML IMG tag in Walther specifies the point at which the advertisement is to be inserted during the processing of the HTML email." Pet. Reply 14–15; *see also* Ex. 1002 ¶¶ 108–110 (explaining how the processing and use of Walther's IMG tag mirrored the operation of the meta tag described in the '929 patent Specification).

Petitioner has persuasively shown that the combination of prior art teaches "inserting to the content information, by the server, a meta tag for one or more advertisements to be displayed with the content information," as required by claim 1. Petitioner explains that the proposed combination was based on insertion of the claimed meta tag (i.e. HTML tag) into the content information. Pet. 44–45; *see also* Pet. Reply 18. Specifically, "[a]s combined with Langseth, the teachings of Walther and Zeff would have produced an HTML email (such as Figure 14) in which a banner advertisement was inserted between the content information, by the server in

Langseth inserting a meta tag at that location in the HTML document, as taught in Zeff and Walther." Pet. 45 (citing Ex. 1002 ¶ 112).

As further explained by Dr. Chatterjee, whose testimony we credit in this regard, "it would have been obvious to insert the tag into an HTML document – that was the whole point of the HTML tag," and "a person of ordinary skill in the art would have understood that the appearance of [Zeff's] banner advertisement (in red box) between the two pieces of content information above means that the HTML tag for the banner ad was inserted between them." Ex. 1002 ¶ 111. As Petitioner further argues, Patent Owner appears to concede that the combination of Langseth, Walther, and Zeff would have predictably resulted in the insertion of an HTML tag into the content in order to display the advertisement, because Patent Owner states "'[o]f course, whenever an HTML page is displayed, there must be underlying HTML code, including HTML tags, that dictates how the elements of the web page, such as banner advertisements, are displayed.'" Pet. Reply 19 (quoting PO Resp. 37–38).

We determine that Patent Owner's arguments concerning the "ALT" attribute are both irrelevant and incorrect. *See* PO Resp. 27–28; Tr. 52:1–4 (counsel for Patent Owner arguing Petitioner "failed to meet their burden with respect to the IMG tag element, because they haven't addressed all the mandatory parts"). First, we disagree that the ALT attribute is mandatory within Walther's Ad Rotator system. *See* Pet. Reply 15–17; Ex. 1041 ¶¶ 28–30. Instead, "as explained by Dr. Chatterjee, Walther makes clear that a developer can leave Ad Rotator fields blank by placing a hyphen (-) on the line corresponding to the field," which Petitioner "further confirm[s] by a contemporaneous textbook describing the Ad Rotator component (a well-

known component of Microsoft's Active Server Pages (ASP) product)." Pet. Reply 17 (citing Ex. 1041 ¶¶ 28–29; Ex. 1044, 6). We find Petitioner's evidence persuasive in demonstrating "that a person of ordinary skill in the art would not have interpreted Walther as suggesting that ALT attribute text was mandatory." Pet. Reply 17 (citing Ex. 1041 ¶¶ 28– 30; Ex. 1044, 6).

Second, even if mandatory, Petitioner does not rely on the ALT feature, and its presences does nothing to detract from the portions of Walther actually relied upon. Tr. 29:6–11 ("[W]e didn't rely on it because it doesn't perform the functions of a meta tag. It's really just an error condition."). As Petitioner explains, "[t]he Petition never argued that the ALT attribute qualifies as a meta tag, nor relied in any way on it in showing the claimed meta tag." Pet. Reply 15 (citing Pet. 41 n. 5; Ex. 1002 ¶ 103). Instead, "the Petition only relies on particular attributes of the HTML IMG tag in Walther – the IMG SRC, WIDTH, HEIGHT, and BORDER attributes – and excludes the ALT attribute that appears between the SRC and WIDTH/HEIGHT/BORDER attributes:"

> <AHREF="/adredir.asp?url=http://www.levlin.com/&image=http://www.levlin.com/images/yawn.gif"><IMG SRC="http://www.levlin.com/images/yawn.gif" ALT="Check out the most boring site on the Internet!" WIDTH=468 HEIGHT=60 BORDER=1></A>

Pet. Reply 15–16 (showing Walther's Ad Rotator (Ex. 1004, 516–517) with yellow highlighting added by Petitioner). As explained by Petitioner, "although ALT is shown as the second of five attributes of the specific example above, it is undisputed that the HTML standard would have allowed the ALT attribute to be placed elsewhere in the IMG tag, for example, at the end." Pet. Reply 16 (citing Ex. 1041 ¶ 25). Thus, we agree

with Petitioner and find that "[t]he presence or absence of an ALT attribute has no relevance to the instituted grounds." Pet. Reply 16.

Finally, Patent Owner states that in Langseth, "'content information' and advertisements would be filled into the 'template' used to create HTML mail, such that they are displayed in the same HTML page." PO Resp. 21; Ex. 2004 ¶ 73. Patent Owner seems to suggest that this is insufficient because advertisements are inserted into a template and not the content information. *Id.* Based on the final record before us, however, use of a "template" in Langseth is optional. *See* Ex. 1003, 18:21–24. Further, even if the message generator system may be created from a template, Patent Owner cites nothing in Langseth suggesting that messages themselves must be created from templates. *See* Pet. Reply 20–21 (citing Ex. 1003, 18:18–24, 18:66–67, 24:54–58). We have considered Dr. Shoemake's testimony that content information and advertisements would be filled into the template used to create HTML mail, but find this testimony unpersuasive. Ex. 2004 ¶ 73. As Dr. Chatterjee testifies, "there is nothing in Langseth that requires the use of a template to create the HTML email." Ex. 1041 ¶ 37. Further, we find persuasive Dr. Chatterjee's testimony that the passage relied upon by Patent Owner "merely states that '[e]ach message generator system 68 may be created from a sub-service template,' and that statement does not state that individual messages themselves are created from a template." Id. ¶ 38 (quoting Ex. 1003, 18:21–24).

For the foregoing reasons, and based on the final record, Petitioner has shown by a preponderance of the evidence that a person of ordinary skill would have a rational basis to combine Langseth, Walther, Zeff, and Mann and that this combination teaches the limitations recited in independent

claim 1, as well as teaches claim 1 as a whole. Petitioner has demonstrated by a preponderance of the evidence that claim 1 would have been obvious over Langseth, Walther, Zeff, and Mann.

6. Analysis – Claims 9, 10, 16

Petitioner has also demonstrated by a preponderance of the evidence that Langseth, Walther, Zeff, and Mann teach all the limitations of claims 9, 10, and 16. *See* Pet. 57–65. Below, we address Petitioner's evidence and argument, as well as Patent Owner's contentions with respect to claim 10's requirement of "transmitting the advertisement to the mobile device instead of the content information that includes the meta tag." *See* PO Resp. 38.

Claim 9 is an independent claim (Ex. 1001, 14:58–15:10) reciting "a server" with limitations similar in scope to method claim 1 addressed above. Petitioner establishes on the final record how the combination of references teach each limitation of claim 9. *See* Pet. 57–63. Because claim 9 is nearly the same as claim 1, Petitioner largely relies upon its analysis of claim 1, with which we agree for the reasons set forth above.

Claim 9 first recites "a server, comprising: a database organized into a plurality of memory location channels." Petitioner relies persuasively on Langseth's disclosure of a number of memory location channels, each channel storing information of a particular category (e.g., Finance, Weather) and each channel described as a database. Pet. 58–59. We agree with Petitioner's demonstration of how Langseth teaches "each of the memory location channels storing information of a same category as a pre-defined category of each of the respective memory location channels" whereas "Langseth organizes and stores data into one or more 'channels' of data, where the data within a particular channel relates to a particular subject

matter." Claim 9; Pet. 59. Petitioner further demonstrates persuasively that it would have been obvious to the person of ordinary skill in the art "to implement the machine housing the data distribution server 62 to physically enclose the channel databases," thus meeting the requirement of claim 9 that the server comprises a database. Pet. 59–60.

Petitioner notes "[o]ne final difference between this limitation and claim 1[b] is that claim 9 recites '**a database** organized into a plurality of memory location channels,' whereas claim 1 does not recite a database." Pet. 60. Petitioner argues persuasively that "in Langseth, each memory location channel can have a separate channel database . . . [b]ut nothing in Langseth prohibits those channel databases from being part of a larger database." *Id.* (citing Ex. 1003, Fig. 2A, 4:1–5, 5:37–39, 12:11–13, 23:28–30). Petitioner relies on Langseth's disclosure of a database system that may provide a plurality of channels and concludes "Langseth therefore discloses 'a database organized into a plurality of memory location channels' as claimed, i.e., the individual channels." *Id.* (emphasis omitted); *see also* Ex. 1002 ¶ 153 (Dr. Chatterjee testifying, "Langseth's channel databases ***together*** comprise an organized collection of data—i.e., a ***database***," and "Langseth describes the plurality of channels as parts of a larger database system."). We find Petitioner's contentions persuasive.

Other than the arguments addressed above for claim 1, Patent Owner does not specifically challenge Petitioner's contentions with respect to claim 9. For the reasons set forth above, we determine Petitioner has established by a preponderance of the evidence that claim 9 would have been obvious over Langseth, Walther, Zeff, and Mann.

Claim 10 depends from claim 9 and further requires "the server is

configure[d] to, when the information relevant to the detected triggering event comprises advertisement, transmitting the advertisement to the mobile device instead of the content information that includes the meta tag." Ex. 1001, 15:11–15.

Petitioner shows how Langseth teaches each of these additional requirements. Pet. 63–64. Petitioner explains how Langseth discloses numerous services for its various exemplary channels, and certain services provide "content information" from a channel while others provide "advertising information" from a channel. Pet. 63–64 (citing Ex. 1003, 9:38–11:49). According to Petitioner and Dr. Chatterjee, "[w]hen a user subscribed to a service for a channel that provided advertisements, the information relevant to the detected triggering event would comprise advertisement rather than content information." Pet. 64; Ex. 1002 ¶ 162. Thus, "for those services, a person of ordinary skill would have understood and found it obvious that Langseth's system would transmit an HTML email comprising advertisement instead of content information to the user's mobile device." *Id.*

Patent Owner challenges whether Langseth identifies the cited examples as advertisements and argues "a POSITA would not have found it obvious that these advertisements would be transmitted 'instead of the content information that includes the meta tag,' as required by the claims." PO Resp. 39. Patent Owner further contends "the Petition does not even allege that it would have been obvious to transmit advertisement 'instead of the content information that includes the meta tag,'" but instead "that it would have been obvious 'that Langseth's system would transmit an HTML email comprising advertisement instead of content information to the user's

mobile device.'" *Id.* (quoting Pet. 64) (citing Ex. 2004 ¶¶ 134, 135). Patent Owner concludes that "[i]t is not sufficient that advertisement be transmitted instead of content information; rather, according to the plain language of the claims, the content information ***must include meta tags***." *Id.* at 40.

Petitioner responds that Patent Owner's "argument cannot be reconciled with the plain language of claim 10, which clearly recites 'transmitting the advertisement to the mobile device **instead of** the content information that includes the meta tag.'" Pet. Reply 23. As Dr. Chatterjee opines, "[t]his argument does not make sense. . . . 'content information that includes the meta tag' is **not** transmitted under the scenario contemplated in claim 10. Because there is no 'content information' transmitted under claim 10, there is no need for any transmission of any 'meta tag' inserted into the content information, either." Ex. 1041 ¶ 43.

We are persuaded by Petitioner's evidence and argument regarding claim 10. The claim language is clear that when subscribed to a service for a channel that provided advertisements, the information relevant to the detected triggering event would comprise advertisement rather than content information. Notably, claim 9, from which claim 10 depends, recites "when the information relevant to the detected triggering event comprises content information, inserting into the content information a meta tag." Ex. 1001, 15:1–3. Claim 10 relies on the scenario when the information relevant to the detected triggering event does not comprise content information (as conditioned by claim 9), and only then does claim 10's requirement that "when the information relevant to the detected triggering event comprises advertisement," control. *See* Tr. 30:6–32:20 ("But in claim 10, it doesn't comprise content; it comprises an advertisement. . . . You just transmit the

advertisements in the mobile device. You don't need to transmit the content information or meta tags, because you don't even need the meta tags, because that entire step of inserting the content of the meta tags -- the meta tags of the content, it skips."). Patent Owner's contentions are therefore not persuasive.

We determine that Petitioner has shown by a preponderance of the evidence how the combination of references teach the claimed server's capability to carry out the requirements of both claims 9 and 10, and also provided a rational basis for the combination of references.

Claim 16 depends from claim 9 and further requires "wherein the one or more advertisement comprises static advertisement, dynamic advertisement, or default advertisement." Ex. 1001, 16:15–17.

Relying on stipulated claim constructions for static and dynamic advertising information, Petitioner shows persuasively how Langseth and Zeff teach these additional limitations of claim 16. Pet. 55, 65. For example, "Langseth discloses at least static advertising information," through "an advertisement identifying 'Flo's Diner,'" which is "advertising information that relates to the identity of an advertiser." Pet. 55–56 (citing Ex. 1003, Fig. 14). Petitioner similarly identifies disclosures in Zeff of static advertising information. Pet. 56 (citing Ex. 1005, 31, Fig. 2.8). Petitioner establishes persuasively how "[i]t would thus have been obvious that the advertisements included with Langseth's HTML email could include each of these types of advertising information." Pet. 57 (citing Ex. 1002 ¶¶ 145, 146).

Patent Owner has not specifically challenged Petitioner's contentions with respect to claim 16, except for the arguments addressed above directed

to the limitations of claims 1 and 9. We determine that Petitioner has shown by a preponderance of the evidence how the combination of references teach the requirements of claim 16. Petitioner has demonstrated by a preponderance of the evidence that claims 1, 9, 10, and 16 would have been obvious over the combination of Langseth, Walther, Zeff, and Mann.

B. Obviousness Based on Langseth, Walther, Zeff, Mann, and Gilhuly

Petitioner challenges the patentability of claim 1 (claims 5 and 8 having been disclaimed) of the '929 patent under 35 U.S.C. § 103(a) as obvious based on Langseth, Walther, Zeff, Mann, and Gilhuly. Pet. 65–69. In support thereof, Petitioner identifies the disclosures in each reference alleged to describe the subject matter in the challenged claims and further relies on the testimony of Dr. Chatterjee (Ex. 1002).

We have reviewed Petitioner's contentions and supporting evidence. Based on the final evidence of record, we are persuaded that Petitioner has demonstrated by a preponderance of the evidence that claim 1 of the '929 patent would have been obvious based on this ground. Below, we provide a brief summary of Gilhuly, and address the reasons for our determination.

1. Overview of Gilhuly (Ex. 1019)

Gilhuly is directed to "[a] system and method for pushing information from a host system to a mobile data communication device upon sensing a triggering event." Ex. 1019, code (57). Gilhuly describes "[a] redirector program operating at the host system [that] enables a user to continuously redirect certain user-selected data items from the host system to the user's mobile data communication device upon detecting that one or more user-defined triggering events has occurred." *Id.* at 3:2–11.

2. Analysis

Petitioner relies on essentially the same analysis for the ground above, except now also relying on Gilhuly to "demonstrate[] that it would have been obvious to implement the transmission from server 62 to the user device 22 in Langseth using a push technique." Pet. 65. Petitioner argues that the preamble to claim 1 recites "[a] method for pushing information to a mobile device," and "it is not entirely clear what 'pushing' would require." *Id.* Thus, Petitioner combines the teaching of Langseth with Gilhuly, "a reference that clearly discloses 'pushing' information under any reasonable construction." *Id.*

Petitioner provides a persuasive rationale for combining the teachings of Gilhuly into the combination of references examined above. Pet. 67–68. As explained by Petitioner, "[i]t would have been obvious to further combine Langseth, Walther, Zeff, and Mann with Gilhuly" because doing so "would have predictably resulted in the HTML email of Langseth being pushed from the data distribution server 62 to the user mobile device 22, according to the teachings of Gilhuly." *Id.* at 67. "Langseth and Gilhuly disclose similar systems for automatically transmitting information to the user based on triggering events specified by the user," and "Gilhuly expressly describes that its ability to 'integrat[e] with other host system components such as E-mail' as one of the advantages of its push technique." *Id.* at 67–68 (citing Ex. 1019, 5:18).

We have reviewed Petitioner's contentions regarding claim 1 and determine that the information presented shows by a preponderance of the evidence that Langseth, Walther, Zeff, Mann, and Gilhuly teach all the limitations of claim 1. *See* Pet. 65–69.

Patent Owner has not specifically challenged this ground or the addition of Gillhuly to the combination. Petitioner has demonstrated that claim 1 would have been obvious over the combination of Langseth, Walther, Zeff, Mann, and Gilhuly.

C. Obviousness Based on Langseth, Walther, Zeff, Mann, and Laux

Petitioner challenges the patentability of claims 9, 10, and 16 of the '929 patent under 35 U.S.C. § 103(a) as obvious based on Langseth, Walther, Zeff, Mann, and Laux. Pet. 69–72. In support thereof, Petitioner identifies the disclosures in each reference alleged to describe the subject matter in the challenged claims and further relies on the testimony of Dr. Chatterjee.

We have reviewed the parties' contentions and supporting evidence. Based on the final record, we are persuaded that Petitioner has demonstrated by a preponderance of the evidence that claims 9, 10, and 16 of the '929 patent would have been obvious based on this ground. Below, we provide a brief summary of Laux, and address the reasons for our determination.

1. Overview of Laux (Ex. 1020)

Laux, entitled "System and Method Including a Merging Driver for Accessing Multiple Data Sources," describes a software technique for treating multiple distinct databases as a single large logical database. Ex. 1020, code (57). "A user by a single query (or any other access operation, e.g. for editing) can access data, which may be distributed over multiple sources." *Id.* at 1:51–53. Laux explains, "[b]y specifying the sources to be accessed, a user can 'merge' different sources into a 'virtual' database, which looks to the user like a single database, but which is actually

a grouping of several databases or sources selected by the user." *Id.* at 1:53–57. Laux discloses a "merging driver" that interacts with the application programming interfaces (APIs) supporting various other databases, to provide a unified interface to each of the databases. *Id.* at 1:39–59, 6:12–23.

2. Analysis

Petitioner explains that this ground "addresses independent claim 9, and claims 10, 13, and 16, which depend from claim 9." Pet. 69. Claim 9 requires "a database organized into a plurality of memory location channels." *Id.* According to Petitioner, "[i]t would have been obvious to combine Laux with Langseth and the other references cited in Ground 1, predictably resulting in the Langseth information delivery system in which the channels in Langseth – even when implemented as separate databases – were transformed in behavior into a single virtual database under the teachings of Laux." *Id.* at 71 (citing Ex. 1002 ¶ 181).

Petitioner presents a persuasive rationale for this combination because Laux "provides a straightforward and express motivation to combine in that its technique allows a search of multiple databases through a single query, 'so a single query can provide the user with results, which are retrieved from different sources.'" Pet. 71 (quoting Ex. 1020, 1:57–58).

Patent Owner has not specifically challenged this ground or the addition of Laux to the combination. Petitioner has established persuasively that Langseth, Walther, Zeff, Mann, and Laux teach all the limitations of claims 9, 10, and 16. *See* Pet. 69–72. Petitioner has demonstrated that claims 9, 10, and 16 would have been obvious over the combination of Langseth, Walther, Zeff, Mann, and Laux.

IV. CONCLUSION

For the reasons set forth above, based on the final trial record, we determine that the information presented in the Petition establishes by a preponderance of the evidence that *all* challenged claims (1, 9, 10, and 16) would have been obvious. We therefore determine that each challenged claim is unpatentable as set forth below.[7]

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1, 9, 10, 16	§ 103(a)	Langseth, Walther, Zeff, Mann	1, 9, 10, 16	
1	§ 103(a)	Langseth, Walther, Zeff, Mann, Gilhuly	1	
9, 10, 16	§ 103(a)	Langseth, Walther, Zeff, Mann, Laux	9, 10, 16	
Overall Outcome			1, 9, 10, 16	

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1, 9, 10, 16 of the '929 patent have been proven to be unpatentable;

[7] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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

For PETITIONER:

Heidi Keefe
Andrew Mace
COOLEY LLP
hkeefe@cooley.com
amace@cooley.com

For PATENT OWNER:

James Glass
Sam Stake
Ognjen Zivojnovic
QUINN EMANUEL URQUHART & SULLIVAN LLP
jimglass@quinnemanuel.com
ogizivojnovic@quinnemanuel.com
samstake@quinnemanuel.com