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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

SANDPIPER CDN, LLC,
Patent Owner.

IPR2025-01010
Patent 10,057,322 B2

Before MITCHELL G. WEATHERLY, SHEILA F. McSHANE, and MICHAEL T. CYGAN, *Administrative Patent Judges*.

CYGAN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background and Summary

Google LLC ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–15 of U.S. Patent No. 10,057,322 (Ex. 1001, "the '322 patent"). Paper 1 ("Pet."). The Petition is supported by a Declaration from Dr. Todd C. Mowry. Ex. 1003 ("Mowry Declaration"). Sandpiper CDN, LLC ("Patent Owner") filed a Preliminary Response to the Petition. Paper 6 ("Prelim. Resp."). Patent Owner's Preliminary Response is supported by a Declaration of Dr. Samuel H. Russ. Ex. 2010 ("Russ Declaration"). The proceeding was referred to this panel by the Acting Chief Administrative Judge for determination of whether to institute trial under 35 U.S.C. § 314. Paper 14. We granted additional briefing from the parties on certain claim construction matters. Ex. 3103; Papers 15, 16.

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2023). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted "unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." For the reasons given below, on this record, Petitioner has established a reasonable likelihood that it would prevail in showing the unpatentability of at least one of challenged claims 1–15 of the '322 patent. Accordingly, we institute an *inter partes* review of the '322 patent.

B. Real Parties-in-Interest

Petitioner identifies itself as a real party-in-interest. Pet. 85. Patent Owner identifies itself as a real party-in-interest. Paper 3, 1.

C. Related Matters

The parties represent that the ’322 patent is involved in *Sandpiper CDN, LLC v. Google LLC*, 2-24-cv-03951 (CDCA), filed May 10, 2024. Paper 3, 1; Pet. 85.

D. The ’322 Patent

The ’322 patent is titled “Network Address Resolution.” Ex. 1001, code (54). The ’322 patent issued on August 21, 2018 from U.S. Application No. 14/985,968, filed on December 31, 2015, which claims the benefit of U.S. Provisional Application No. 62/098,930, filed on Dec. 31, 2014. *Id.* at codes (21), (22), (60). The ’322 patent relates to a method of delivering content; i.e., any kind of data, in response to a request for a content resource including at least one embedded resource with a tag. *Id.* at code (57), 3:31–40. The embedded resource may be a link to content, stored on an origin server, that the user can obtain by selecting the link. *Id.* at 4:15–31.

The tag is identified and at least one delivery parameter such as client IP address, popularity, or content identification is passed to an Application Programming Interface (“API”) to generate a modified embedded resource. *Id.* at code (57), Fig. 2. The ’322 patent explains,

> The embedded resource may include a tag indicating that a resource address compute engine 30 should be contacted via a call to an API 26 (operation 220). For instance, the HTML document may include an embedded resource of the form:
>
> http://${CALLAPI:ADDRONLY}/path/resource.txt, or ${CALLAPI:FULLURL,path=$ENV{PATH}, pop=$POP}.
>
> In both instances, the tag is "$" which causes the origin server 18 to call the API 26 to retrieve the address (only) or the complete URL. Hence, the presence of the tagged resource 24A in the HTML document 20 at the origin servers causes the origin

> server to call the API, the result of which causes the HTML document returned to the requesting client to include a modified embedded resource 24B.

Id. at 4:32–47.

The computing engine 30 uses the information to determine one or more nodes in the content delivery network "('CDN') to serve the content upon receiving a request." *Id.* at 6:24–49.

E. Illustrative Claim

Claim 1 is illustrative, and recites as follows:[1]

> 1. [1pre] A content delivery method comprising:
>
> [1a] receiving, by an origin system, a request from a client device for a content resource, the content resource including at least one embedded resource with a tag;
>
> [1b] upon identification of the tag, using at least one delivery parameter to obtain, by the origin system, a modified embedded resource from a content delivery network that is separate from the origin system; and
>
> [1c] delivering, by the origin system, the content resource to the client device with the modified embedded resource, wherein the modified embedded resource includes a direct link to a node within the content delivery network that can deliver content associated with the embedded resource.

Ex. 1001, 10:5–18. Claim 15 is also illustrative, and recites as follows:

> 15. [15pre] A method comprising:
>
> [15a] providing, at a content delivery network, an application programming interface (API);
>
> [15b] at the API, receiving, from an origin system that is separate from the content delivery network, an embedded resource and at least one parameter associated with the embedded resource;

[1] Bracketed organization added as per the Petition. Pet. vi.

[15c] generating a modified embedded resource providing a direct link to a node within the content delivery network for obtaining content associated with the embedded resource;

[15d] delivering, by the content delivery network, the modified embedded resource to the origin system;

[15e] receiving, at the node, a request from a client device to obtain the content; and

[15f] providing the content to the client device.

Ex. 1001, 12:5–20.

F. Evidence

Petitioner relies on the following evidence.

Name	Document	Exhibit
Verma et al. "Verma"	US 2009/0132640 A1, filed May 21, 2009	1005
Raciborski et al. "Raciborski"	US 2007/0067424 A1, filed August 1, 2005	1006
Drai et al. "Drai"	US 2014/0052811 A1, filed February 20, 2014	1007
Lewin et al. "Lewin"	US 2009/0172167 A1, filed July 2, 2009	1008

G. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–15 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
15	102(a)(1), 102(a)(2)	Verma
11, 12, 14, 15	103[2]	Verma
11, 12, 14, 15	103	Verma, Raciborski
1, 8, 10, 13	103	Verma, Lewin

[2] We apply AIA 35 U.S.C. § 103 to the '322 patent because it was filed after March 16, 2013, and does not include any claim for priority on or before that date. Ex. 1001, codes (22), (60); Pet. 1.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
2, 4, 5, 7, 9, 13	103	Verma, Raciborski, Lewin
3, 6	103	Verma, Raciborski, Lewin, Drai

Pet. 10.

II. ANALYSIS

A. Legal Standards

Anticipation of a claim may be found "only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987).

A claim is unpatentable under 35 U.S.C. § 103 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 ordinary skill in the art; and (4) objective evidence of non-obviousness.[3] *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art ("POSITA") at the critical time "would have had at least a bachelor's degree in computer

[3] Neither party presents evidence or arguments regarding objective evidence of non-obviousness.

science, electrical engineering, or a related field, and at least two years of work or research experience in the field of content delivery management or networks," and that "[w]ork experience can substitute for formal education and additional formal education can substitute for work experience." Pet. 10 (citing Ex. 1003 ¶¶ 61–63). Patent Owner does not provide any such assessment in its Preliminary Response. Prelim. Resp. 11. For purposes of this Decision, we adopt Petitioner's proposed level of ordinary skill, as it appears to be consistent with the specification of the '322 patent and the prior art of record.

C. Claim Construction

In an *inter partes* review, we construe a patent claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b)." 37 C.F.R. § 42.100(b). Under this standard, the words of a claim generally are given their "ordinary and customary meaning," which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Neither party initially proposed any express claim construction. Pet. 9; Prelim. Resp. 11. However, Petitioner sought additional briefing on "Patent Owner's implicit constructions for three claim terms," which we granted following a conference with the parties. Paper 15, 1. In additional briefing, both parties argued that each term should be given its plain meaning, while differing on what that meaning should be. Paper 15, 3; Paper 16, 1. We address each term in turn.

1. "modified embedded resource"

Petitioner asserts that a "link to download content" may be an "embedded resource." Pet. 15. Petitioner cites to the '322 patent; in particular to the recitation of claim 10 that the "embedded resource is a link." *Id.* (citing Ex. 1001, claim 10). Petitioner further asserts that when such a link is modified, it is a "modified embedded resource." *Id.* at 22–23. Petitioner further points to the recitation of claim 13 that "the modified embedded resource is a link." Paper 15, 1. Petitioner argues that a modified embedded resource need not be a resource that is embedded within another resource, such an HTML document, during any or each step of the claims. *Id*.

Patent Owner argues that a modified embedded resource requires embedding in some form, or else the word "embedded" would be rendered superfluous. Paper 16, 1–2. Patent Owner provides the following analysis of the term "modified embedded resource" as discussed in the ''322 patent:

> As the '322 patent describes, "when a user enters, into the browser Web page, an address http://www.example.com," the origin server returns an "HTML document 20 with an embedded resource 24." Ex. 1001, 4:5–26. "The HTML document is what the browser uses to display the Web page [with an address] http://www.example.com" and "[t]he embedded resource is a link to some form of content that the user can obtain by selecting the link when the Web page is displayed." *Id.*, 4:26–31; Ex. 2010 ¶ 68. The '322 patent further explains that "the HTML document may include an embedded resource" with the tag "$" which, in turn, "causes the HTML document returned to the requesting client to include a modified embedded resource 24B with an address or URL to the CDN whereby the content may be retrieved." Ex. 1001, 4:32–48 (emphasis added). Thus, as the '322 patent describes and claims, the "modified embedded resource" is a resource embedded within another resource, such as an HTML document. *See, e.g.*, Ex. 1001, 10:6–8, 10:56–58

> (Claims 1 and 10: claiming a "content resource including at least one embedded resource, … wherein the content resource is a hypertext markup language (HTML) document and the embedded resource is a link"), 11:10–16 (Claims 12 and 13 ("replacing the embedded resource with the modified embedded resource in a resource … wherein the resource is an HTML document and the modified embedded resource is a link"); Ex. 2010, ¶ 68.

Prelim. Resp. 18–19 (emphasis omitted).

On the current record, we determine that the "modified embedded resource" may be a "link." Both Petitioner and Patent Owner point to claim 13, which explicitly states that a modified embedded resource is a link. Because claim 13 depends from claim 1, claim 1 must be broad enough to encompass a modified embedded resource that is a link. Patent Owner also points to a statement in the '322 patent that "[t]he embedded resource is a link." Prelim. Resp. 18 (citing Ex. 1001, 4:26–31).

Patent Owner argues that every embodiment of the '322 patent "involves embedding the 'modified embedded resource' in another resource when it is returned to the client." Paper 16, 2–3. Patent Owner cites to description in the '322 patent of a "document" or a "page" returned to the requesting client. *Id.* (citing Ex. 1001, 4:42–48, 7:48–55). However, claim 15 does not return the modified embedded resource to the client, only the origin system. Claim 1 recites only that the "modified embedded resource" is returned to the client device with the content resource. Neither claim 1 nor claim 15 recite returning a document or a page containing the modified embedded resource, only the modified embedded resource itself.

We acknowledge some tension with the adjective "embedded," which Patent Owner argues requires that the embedded resource be embedded in something. Paper 16, 1–3. However, the clear description of an embedded

resource as being a link, present in the claims and description of the '322 patent, more strongly guides our preliminary construction.

2. "API"

Petitioner argues against Patent Owner's proposed construction that an API acts as an interface that allows the client to communicate with an application executing on the server, but is not the application itself. Paper 15, 3 (citing Prelim. Resp. 22). Petitioner argues that the '322 patent states that "the API may include the functionality of the engine and not necessarily be considered a discrete mechanism from the computing engine functions," and refers to the "API/compute engine" repeatedly. Paper 15, 3–4 (citing Ex. 1001, 7:22–25, 7:51–52) (emphasis omitted).

Patent Owner argues that the API still requires an interface for communication with the client, and that the use of "API/compute engine" merely underscores the distinction between the two because they have different functions. Paper 16, 4 (citing Ex. 1001, 7:56–57). Patent Owner states that the API receives information that is then used by the compute engine to generate an address. *Id.* (citing Ex. 1001, 7:57–61).

However, because the '322 patent states that the API "may include" the functionality of the engine, Patent Owner's example does not show that the API and engine must always be entirely separate components. Thus, we are persuaded by Petitioner that the API need not be separate from the engine executing on the server.

We further address this term as it applies to the applied Verma reference, including Patent Owner's characterization of the function and scope of an API, in our discussion on the merits of Petitioner's anticipation assertion. *Infra* § II.D.2.

3. "tag"

The parties appear to agree that the claimed tag does not require a tag "indicating that a resource address compute engine 30 should be contacted [by] a call to API 26." Paper 15, 5; Paper 16, 6. Patent Owner states that its arguments apply under any reasonable interpretation of the term "tag." Paper 16, 6. We further address this term as it applies to the applied Verma and Lewin references, including Patent Owner's characterization of the function and scope of a tag, in our discussion on the merits of Petitioner's obviousness assertion. *Infra* § II.G.1.

4. Summary

Based on the record before us, we determine that no claim term except for "modified embedded resource" requires express construction for purposes of this Decision. We construe a modified embedded resource as encompassing a modified link. We interpret the other aforementioned terms under their plain meaning, in light of the foregoing discussion.

D. Anticipation by Verma ("Ground 1A")

Petitioner asserts that claim 15 is unpatentable under 35 U.S.C. § 102 as anticipated by Verma. Pet. 10. Patent Owner argues against this assertion. Prelim. Resp. 17–26.

1. Verma

Verma is titled "Content Timing Method and System." Ex. 1005, code (54). Verma was filed on June 2, 2005, with a 35 U.S.C. § 371 (c)(1), (2), (4) date of November 19, 2007, and published as US2009/0132640 A1 on May 21, 2009. *Id.* at codes (10), (22), (43), (86). Verma relates to delivering content files to a client computer in which a future period of file availability is determined, and a written uniform resource locator comprising

time period availability information is returned to the client. *Id.* at code (57).

2. [15pre] A method comprising: [15a] providing, at a content delivery network, an application programming interface (API)

Petitioner asserts that limitations [15pre]–[15a] are disclosed by Verma's "method for delivering content files" in which a "content delivery network" comprises an application programming interface in the form of "brokers." Pet. 10–11 (citing Ex. 1005 ¶¶ 1, 10, 12, 15–17, 22, 25–26, 34, 36–38). Petitioner asserts that Verma's broker is an API because it communicates with the content servers and provides an interface between the content servers and the content delivery network. *Id.* at 11–12 (citing Ex. 1005 ¶¶ 15, 22, 25–26; Ex. 1003 ¶ 87). Petitioner points to Verma's content provider 22 sending a request for information to a content delivery network broker 25, in which broker 25 provides information to content provider 22. *Id.* at 12 (citing Ex. 1005 ¶¶ 25–26; Ex. 1005 ¶¶ 25–26). Relying on testimony from Dr. Mowry, Petitioner asserts that Verma's "broker" is an API because "it performs the same logical functions as the API in the '322 patent, which provides that '[w]hen the origin server receives the request,' it 'calls an API' to 'communicate with the compute engine' in the CDN." *Id.* (citing Ex. 1001, 4:49–52, 7:16–25).

Patent Owner argues that Verma's broker is not an API. Prelim. Resp. 20–26. Patent Owner relies on Dr. Russ for a definition of an API as "a set of rules or protocols that enables software applications to communicate with each other to exchange data, features and functionality." *Id.* at 22 (citing Ex. 2010 ¶ 50 (citing Ex. 2012, 2)). Dr. Russ states that "[t]he API is the bridge establishing the connection between [a client and server]." *Id.* (citing Ex. 2010 ¶ 50). Patent Owner characterizes the API in

the '322 patent as the bridge between the origin server and the compute engine, in which the compute engine 30 is "contacted via a call to an API 26."

Patent Owner states that Verma's broker "receives information from the cache servers in a content delivery network . . . and then returns the re-written URL to the content server which received the request from the client." *Id.* at 23 (citing Ex. 1005 ¶ 12). Patent Owner characterizes Verma's broker as an intermediary between content server and cache server in which the broker determines start time, end time, and availability of a content file within the cache server, and schedules distribution of content files to cache servers. *Id.* at 24–25 (citing Ex. 1005 ¶¶ 22, 38).

We are persuaded by Petitioner's assertions for limitations [15pre]–[15a]. Dr. Mowry attests that Verna's client browser sends a URL 28 to a content provider 22, which is then forwarded to broker 25, which selects the appropriate cache server to serve the content and returns a re-written URL to the content server that received the client request. Ex. 1003 ¶ 67 (citing Ex. 1005 ¶¶ 12, 26, 27, 37). On the current record, this function of Verna's broker fulfills Dr. Russ's characterization of an API as acting as bridge establishing a connection between client and server. Ex. 2010 ¶ 50.

Verma also meets Dr. Russ's characterization of an API as "an interface that allows the client to communicate with an application executing on the server." Ex. 2010 ¶ 50. Dr. Russ describers Verma's broker as sending availability inquiries from the content provider (client) to servers 23 and 24 to "find out whether they currently store the requested movie file," and provide that information back to the content provider (client). *Id.* ¶ 53. On the current record, this function of Verna's broker fulfills Dr. Russ's characterization of an API acting as an interface that allows the client to

communicate with an application executing on the server (that which provides availability information to the broker).

Consequently, we determine that Petitioner has shown Verma to disclose limitation [15a] for purposes of institution on the current record.

3. [15b] at the API, receiving, from an origin system that is separate from the content delivery network, an embedded resource and at least one parameter associated with the embedded resource;

Petitioner asserts that Verma's content provider 22 describes an origin system that initially stores web pages and content files. Pet 13 (citing Ex. 1005 ¶ 15). Petitioner asserts that content provider 22 is separate from the content delivery network because, for example, Verma describes the content provider 22 as having a "business relationship" with the content delivery network. *Id.* Petitioner further asserts that Verma's broker receives a URL (embedded resource) and delay tolerance information (parameter associated with the embedded resource) in a request from the content provider (origin system). *Id.* at 14 (citing Ex. 1005 ¶¶ 18, 25, 26, 37). Petitioner asserts that Verma's URL 28 describes an embedded resource because it is a link to download content, such as the movie, "Matrix Reloaded," that is embedded in a "Movies-Inc.Com" webpage *Id.* at 15 (citing Ex. 1001, claim 10 ("wherein the . . embedded resource is a link"); Ex. 1005 ¶¶ 7, 13, 19, 20, 25, 29; Ex. 1003 ¶ 97). Petitioner asserts that delay tolerance information is part of a request from client browser 21 to content provider 22, which then forwards the request to a broker. *Id.* at. 17 (citing Ex. 1005, claim 9; Ex. 1003 ¶¶ 101–102).

Patent Owner argues that Verma does not describe what information is passed in the request sent from content provider to broker, and does not teach that the broker receives at least one parameter associated with the

embedded resource. Prelim. Resp. 25 (citing Ex. 1005 ¶¶ 25–26). Patent Owner argues that the delay tolerance information is sent only from the client to the content provider, and is silent as to whether the broker receives that information. *Id.* (citing Ex. 1005 ¶¶ 18, 25).

We are persuaded by Petitioner that the request received by the broker from the content provider, which originated at the client and contained delay tolerance information, still contains that information because it is the same (forwarded) "request." Ex. 1005, claim 9 ("forwarding the request for a content file is received by a content server to a content delivery network broker"). Patent Owner itself characterizes Verma in this manner. Prelim. Resp. 13 (stating "'The request from the client … can comprise delay tolerance information . . . .' *Id.* ¶ 18. This request is then 'forward[ed]' from content provider 22 to the content delivery network broker 25.'").

Consequently, we determine that Petitioner has shown Verma to disclose limitation [15b] for purposes of institution on the current record.

4. [15c] generating a modified embedded resource providing a direct link to a node within the content delivery network for obtaining content associated with the embedded resource;

Petitioner asserts that Verma discloses limitation [15c] through generating a uniform resource locator (embedded resource) that is prepended or rewritten (modified) to provide a direct link to a requested movie at a specific cache server. Pet. 22–25 (citing Ex. 1005 ¶¶ 5, 12, 13, 16, 19, 26–31, 37, claim 9; Ex. 1003 ¶ 119). Patent Owner does not contest this assertion. Upon review of Verma, we find that Petitioner has shown Verma to disclose limitation [15c] for purposes of institution on the current record.

5. [15d] delivering, by the content delivery network, the modified embedded resource to the origin system;

Petitioner asserts that Verma discloses limitation [15d] through the action of a broker returning a modified uniform resource locator to the content server that received the request from the client. Pet. 26 (citing Ex. 1005 ¶¶ 12, 22; Ex. 1003 ¶ 126). Patent Owner does not contest this assertion. Upon review of Verma, we find that Petitioner has shown Verma to disclose limitation [15d] for purposes of institution on the current record.

6. [15e] receiving, at the node, a request from a client device to obtain the content; and [15f] providing the content to the client device.

Petitioner asserts that Verma discloses limitations [15d] and [15f] through the action of a cache server (node) receiving a request for content from a client's browser, and delivering the requested content to the customers. Pet. 27–28 (citing Ex. 1005 ¶¶ 1, 2, 14, 15, 25, 31, 37; Ex. 1003 ¶¶ 127, 129–130). Patent Owner does not contest this assertion. Upon review of Verma, we find that Petitioner has shown Verma to disclose limitations [15e] and [15f] for purposes of institution on the current record.

7. Determination

For the foregoing reasons, we determine that Petitioner has shown a reasonable likelihood that it will prevail on its anticipation assertions for claim 15.

E. Obviousness over Verma ("Ground 1B")

Petitioner asserts that claims 11, 12, 14, and 15 would have been obvious over Verma. Patent Owner relies solely on its arguments presented above for Petitioner's assertions as to claim 15. Prelim. Resp. 1–2, which we have found unavailing. Upon review of the current record, Petitioner's further assertions for claims 11, 12, and 14 (Pet. 28–34) are sufficiently

supported such that Petitioner has shown a reasonable likelihood that it will prevail on its obviousness assertions for claims 11, 12, 14, and 15.

F. Obviousness over Verma and Raciborski ("Ground 2")

Petitioner asserts that claims 11, 12, 14, and 15 would have been obvious over the combined teachings of Verma and Raciborski. Pet. 34. Petitioner states that, "[t]o the extent Verma does not expressly disclose or suggest Verma's 'broker' (API) receives Verma's URL (embedded resource) or 'delay tolerance information' (associated parameter) from the 'content provider,'" it would have been obvious in view of Raciborski. *Id.*

Petitioner asserts that Raciborski's "analysis interface" is an API because it is an interface for communication between a content originator and a content delivery network. *Id.* Petitioner asserts that Raciborski sends a parameter (if delivery can be delayed) with an embedded resource (the server, path and name) to a content delivery network via analysis interface 330. *Id.* at 35–36. Petitioner asserts that it would have been obvious for Verma's broker to receive delay tolerance information with the embedded resource, in view of Raciborski, because that "would have allowed Verma's broker to analyze a time period, select a cache server that could satisfy delivery during that time period, and rewrite the original URL to redirect to that cache server." Pet. 37–38 (citing Ex. 1003 ¶ 166, Ex. 1005, ¶¶ 12, 13, 18, 22, 25–28, 37).

Patent Owner does not specifically point to reasons why Petitioner errs in its obviousness assertions. On the current record, we find Petitioner's assertions meritorious.

G. Obviousness over Verma and Lewin ("Ground 3")

Petitioner asserts that claims 1, 8, 10, and 13 would have been obvious over the combined teachings of Verma and Lewin. Pet. 43.

1. Analysis of Claim 1

We begin our analysis of Petitioner's obviousness contentions with Petitioner's assertions as to claim 1.

> *[1pre] A content delivery method comprising: [1a] receiving, by an origin system, a request from a client device for a content resource, the content resource including at least one embedded resource with a tag; [1b] upon identification of the tag, using at least one delivery parameter to obtain, by the origin system, a modified embedded resource from a content delivery network that is separate from the origin system; and [1c] delivering, by the origin system, the content resource to the client device with the modified embedded resource, wherein the modified embedded resource includes a direct link to a node within the content delivery network that can deliver content associated with the embedded resource.*

Petitioner builds upon its assertions for claim 15 for its assertions for claim 1. Pet. 43–60 (citing its assertions for [15b] and 15[e] for [1a], its assertions for 15[b], 15[c], and [15d] for [1b], and its assertions for 15[c] for [1c]). Patent Owner provides no separate arguments against the limitations common to claim 15, and we determine that Petitioner has shown them to be described or taught by Verma as detailed *supra*. Patent Owner argues against Petitioner's assertions that the combined teachings of Verma and Lewin teach a "tag" as set forth in claim 1.

Petitioner asserts that Verma in view of Lewin teaches an "embedded resource with a tag" as set forth in [1a]. Pet. 44. Petitioner asserts that Lewin teaches URLs (embedded resources) in an HTML page (a web page; i.e., a content resource) that have tags in the form of dynamic assembly instructions. *Id.* at 45–47 (citing Ex. 1007 ¶¶ 12, 13, 29, 30, 49, 50; Ex. 1003 ¶ 192). Petitioner asserts that such dynamic assembly instructions may be, for example, an "<esi:include> tag." *Id.* at 47–48 (citing Ex. 1007 ¶¶ 28, 30, 49, Fig. 6). Petitioner asserts that Verna and Lewin disclose similar

methods for browsers accessing webpages and content from a CDN, and that a person having ordinary skill in the art would have found it obvious to use tags as taught by Lewin combined with Verna's teachings to increase content delivery performance. *Id.* at 48. Petitioner points to Lewin's description of tags being used for the ability to fetch and include files that comprise a web page. *Id.* at 50. Petitioner further points to evidence that markup languages, like tags, with embedded links allow designers to describe the layout of content on a web page and attributes of that content. *Id.* (citing Ex. 1013, 7:44–51). Petitioner further points to evidence that tags provide a uniform and efficient way to identify URLs. *Id.* at 51 (citing Ex. 1007 ¶ 49; Ex. 1003 ¶¶ 213–217. Petitioner also points to suggestion in Verma of using tags in its modified embedded resource, in the form of "<a href. . . " tags. *Id.* at 51.

With respect to "upon identification of the tag" obtaining a modified embedded resource, as set forth in [1b], Petitioner asserts that Lewin's server parses the HTML page to identify existing tags, and upon identification, incorporates content into the final HTML page to obtain a modified embedded resource, "like URLs on the HTML page." *Id.* at 55 (citing Ex. 1007 ¶¶ 49–50).

Because we have determined that Petitioner has shown a reasonable likelihood of success on its unpatentability assertions for at least one claim, we need not resolve the merits of its Verna-Lewin combination. To further resolution of the issues at trial, we provide the following remarks on the issues contested by Patent Owner.

Patent Owner argues that Petitioner does not explain how Lewin's tags teach "the recited 'tag' . . . used to initiate the operation of obtaining

'the modified embedded resource [that] includes a direct link to a node within the content delivery network that can deliver content associated with the embedded resource.'" Prelim. Resp. 28–29. Patent Owner argues that Lewin's tags "instruct the server to *add* 'content to an existing HTML page,' not a new *link to the content*, as the claims require." *Id.* at 30 (citing Pet. 47).

Although Petitioner describes Lewin as obtaining a link to content (*see* Ex. 1003 ¶ 243), Petitioner explains how Lewin's tags would be used to add a modified embedded resource to an HTML page; i.e., the links to the content. Petitioner compares Lewin's links in its tags (such as "src=us_ad.html/") to those in the '322 patent ("a tagged embedded resource 24A[,] that would identify the resource"). Pet. 47–48 (citing Ex. 1007, Figs. 6, 7; Ex. 1001, 4:56–60; Ex. 1003 ¶ 198). Petitioner asserts that incorporating Lewin's teachings of parsing an HTML page, a Lewin-modified Verma would perform an identification of a tag that initiates dynamic assembly, "like incorporation of content 'into the final HTML page' and obtaining a modified embedded resource, like URLs on the HTML page." Pet. 55. Consequently, Patent Owner's arguments appear to be unavailing.

Patent Owner further argues that claim 1 requires that the presence of the tagged resource "causes the origin server to call the API, which causes the HTML document returned to the requesting client to include a modified embedded resource." Prelim. Resp. 28 (citing Ex. 1001, 4:40–48; Ex. 2010 ¶ 60). However, claim 1 does not recite an API, merely requiring that the origin system obtain a modified embedded resource upon identification of the tag. *See*, e.g., Ex. 1001, claim 2 (reciting passing information to an API).

Patent Owner further argues that Petitioner does not explain how or why Lewin's tags would improve or alter the tags that Petitioner states to be in Verma. *Id.* at 30–31. However, Petitioner explains that use of a tag in Verma would allow designers to describe the layout of content on a webpage and the attributes of that content, because tags define HTML layout and display information, and can specify dynamic assembly instructions. Pet. 50 (citing Ex. 1007 ¶¶ 28, 49; Ex. 1003 ¶¶ 213–217; Ex. 1013 ¶ 213). Petitioner asserts that this provides a "uniform and efficient way to identify URLs." *Id.* We determine this appears to provide adequate reason to combine the teachings in the asserted manner.

2. Claims 8, 10, 13

Petitioner asserts that claims 8, 10, and 13 would have been obvious over Verma. Pet. 58–62. Patent Owner relies solely on its arguments presented above for Petitioner's assertions as to claim 1, which we have discussed *supra*. Prelim. Resp. 2.

H. Remaining Obviousness Grounds

Petitioner's obviousness assertions against claims 2, 4, 5, 7, 9, and 13, based on Verma, Raciborski, and Lewin, and against claims 3 and 6 that are based further on Drai, are contested only on the arguments presented against claim 1, which we have discussed *supra*. Prelim. Resp. 2.

III. CONCLUSION

For the reasons discussed above, we conclude Petitioner has shown a reasonable likelihood of prevailing with respect to at least one of the challenged claims. Accordingly, we institute an *inter partes* review of asserted claims 1–15 on all asserted grounds. 37 C.F.R. § 42.108(a) ("When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability

asserted for each claim."); *see SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018) (noting that the language of 35 U.S.C. § 314(b) "indicates a binary choice—either institute review or don't"); *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute as requiring "a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition").

Our determination at this stage of the proceeding is based on the evidentiary record currently before us. This decision to institute trial is not a final decision as to patentability of any claim for which an *inter partes* review has been instituted. Our final decision will be based on the full record developed during trial.

IV. ORDER

For the foregoing reasons, it is:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted for all asserted grounds on all asserted claims, i.e.:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
15	102(a)(1), 102(a)(2)	Verma
11, 12, 14, 15	103	Verma
11, 12, 14, 15	103	Verma, Raciborski
1, 8, 10, 13	103	Verma, Lewin
2, 4, 5, 7, 9, 13	103	Verma, Raciborski, Lewin
3, 6	103	Verma, Raciborski, Lewin, Drai

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this Decision.

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