

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BRIGHT DATA LTD.,
Petitioner,

v.

OXYLABS, UAB,
Patent Owner.¹

IPR2023-00187
Patent 8,924,457 B2

Before THOMAS L. GIANNETTI, STACEY G. WHITE, and
IFTIKHAR AHMED, *Administrative Patent Judges*.

GIANNETTI, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

¹ The caption of this proceeding has been revised to reflect the current ownership of the challenged patent. *See infra*, n.2.

I. INTRODUCTION

Bright Data Ltd. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–5 (“the challenged claims”) of U.S. Patent No. 8,924,457 B2 (Ex. 1005, “the ’457 patent”). Paper 1 (“Pet.”), 1. oxylabs, UAB (“Patent Owner”)² filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

We determined that the Petition established a reasonable likelihood that it would prevail with respect to at least one claim, and we instituted *inter partes* review as to all challenged claims of the ’457 patent and all grounds of unpatentability asserted in the Petition. Paper 8 (“Institution Dec.”). We denied Patent Owner’s Request for Rehearing. Paper 11 (“Rehearing Req.”); Paper 12 (“Rehearing Dec.”).

Following institution of trial, Patent Owner filed a Response (Paper 16, “PO Resp.”), Petitioner filed a Reply (Paper 18, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 19, “PO Sur-reply”).

A consolidated oral hearing with IPR2023-00185 and IPR2023-00186 was held on April 5, 2024. A transcript of that hearing is part of the record. Paper 26 (“Hearing Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision issued pursuant to 35 U.S.C. § 318(a). For the reasons we discuss below, we determine that Petitioner has not proven by a

² As set forth below, we have been advised that metacluster It, UAB, now operates as oxylabs, UAB, and the ’457 patent has been assigned to oxylabs, UAB. Paper 4, 1. Accordingly, the caption of this proceeding has been revised to reflect this change.

preponderance of the evidence that claims 1–5 of the ’457 patent are unpatentable.

II. PRELIMINARY MATTERS

A. Related Matters

Patent Owner indicates that U.S. Patent No. 9,503,498 (“the ’498 patent”) and U.S. Patent No. 9,516,091 (“the ’091 patent”), which are related to the ’457 patent, are involved in a district court infringement proceeding in the Eastern District of Texas styled as *Metacluster LT, UAB v. Bright Data Ltd.*, Case No. 2:22-cv-00011 (E.D. Tex.). Paper 4, 1.

Petitioner has challenged the ’498 patent and the ’091 patent in IPR2023-00185 and IPR2023-00186, respectively. Pet. 2. Petitioner previously challenged related U.S. Patent No. 10,601,948 in IPR2021-00983, where institution was denied. *Id.*

Petitioner states that Patent Owner and/or other real parties-in-interest have filed petitions for *inter partes* review, post-grant review, and requests for *ex parte* reexamination with respect to a number of patents assigned to Petitioner. Pet. 2–4.

Petitioner further states that there are a number of other district court cases between Patent Owner and/or other real parties-in-interest that involve, or have involved, patents assigned to Petitioner. Pet. at 4–5.

B. Real Parties-in-Interest

Petitioner identifies itself, Bright Data Ltd., as the real party-in-interest. Pet. 1.

Patent Owner identifies oxylabs, UAB as the real party-in-interest, where oxylabs, UAB is the “successor in interest to metacluster lt, UAB.”

Paper 4, 1. Patent Owner explains that “oxysales, UAB and metacluster lt, UAB have been merged into Teso LT, UAB,” and that “[a]s of November 30, 2022, Teso LT, UAB will operate as oxylabs, UAB.” *Id.* Additionally, Petitioner asserts the following entities are real parties-in-interest “[b]ased on the history of litigation between Petitioner and Patent Owner”: “Code200, UAB”; “Teso LT, UAB”; “Oxysales, UAB”; and “Coretech lt, UAB.” Pet. 1–2.

C. The '457 Patent

The '457 patent is titled “Client Browser Acceleration by Having Server Removed and Executed Script Embedded in Web Page.” Ex. 1005, (54). The patent “relates to the management of network traffic by controlling the execution of embedded scripts in web pages.” *Id.* at 1:17–19.

According to the '457 patent, performing web analytics for tracking consumer interaction with websites may employ embedded scripts in web pages. Ex. 1005, 1:20–42. Some drawbacks to this approach, however, are that embedded scripts may be large and may cause delay in web page retrieval, and that “retrieval and execution of embedded scripts may be inconvenient or costly to visitors accessing the web page through networks with bandwidth-restrictive networks.” *Id.* at 1:43–50.

Figure 1 of the '457 patent is reproduced below:

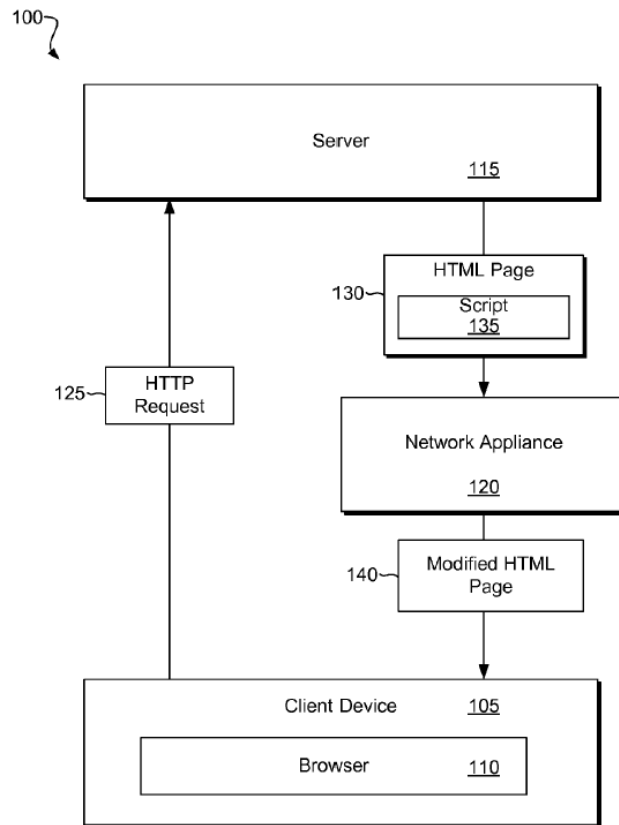


Fig. 1

Figure 1 depicts “a block diagram of an illustrative system for web page script management.” Ex. 1005, 2:47–48. System 100 “may be used to manage the execution of embedded scripts in web pages,” and includes client device 105 that implements browser 110. *Id.* at 5:5–9. The system also includes server 115, as well as network appliance 120, which is disposed in a communication path between server 115 and client device 105. *Id.* at 5:9–12.

Server 115 is a web server and has access to stored web pages. Ex. 1005, 5:20–21. Server 115 responds to HTTP requests from client device 105, for example, by sending requested web page 130 with embedded script 135, which may be “JavaScript with instructions for providing statistical information to an external web analytics service.” *Id.* at 5:21–33.

Network appliance 120 may intercept web page 130 to analyze its contents and determine whether any embedded scripts meet a predefined criterion, and if so, remove or replace such scripts. Ex. 1005, 5:34–47. If an embedded script is removed or replaced, network appliance 120 sends modified web page 140 that retains the original content of the web page, but without the removed embedded script. *Id.* at 5:52–60.

Where a first embedded script in a web page is replaced with a second embedded script, “the second embedded script may be smaller in size than the first embedded script.” Ex. 1005, 7:15–18. Further, upon execution of the second embedded script by a browser on, for example, a mobile device, the mobile device may send a message to the network appliance that triggers execution of the first embedded script by the network appliance. *Id.* at 7:18–22.

According to the ’457 patent, executing an embedded script at network appliance 120, rather than client device 105, “poses significant advantages over prior solutions,” such as providing a reduced size modified web page and conserving processing resources of client device 105. Ex. 1005, 5:61–6:7. Network appliance 120 may also “have access to additional information about the user of the client device,” making its execution of an embedded script more useful to the source of the embedded script than execution by browser 110 on client device 105. *Id.* at 6:10–30.

D. Illustrative Claim

Independent claim 1 is illustrative:³

1. A machine-implemented method of web page script management, said method comprising:

[1a] in a network appliance implemented by at least one processor, intercepting a number of packets sent from a server and addressed to a client browser;

[1b] determining with the network appliance that a number of packets received in the network appliance comprise a web page comprising a first embedded script;

[1c] modifying at least one said packet in the number of packets with the network appliance by replacing the embedded script from the web page with a second embedded script;

[1d] forwarding the number of packets as modified by the network appliance to the client browser; and

[1e] executing the first embedded script with the network appliance in response to receiving an indication that the client browser has executed the second embedded script.

Ex. 1005, 12:2–18. Claims 2–5 depend from claim 1. *Id.* at 12:19–30.

E. Prior Art and Other Evidence

Petitioner relies upon the references listed below (Pet. 7):

Name	Reference	Publication/Issue Date	Exhibit No.
Athas	U.S. Patent App. Pub. No. 2013/0212462 A1	Aug. 15, 2013	1018

³ Reference numbers provided by Petitioner appear in brackets.

Name	Reference	Publication/Issue Date	Exhibit No.
Hallak	U.S. Patent No. 8,464,318 B1	June 11, 2013	1011
Matthys	U.S. Patent App. Pub. No. 2008/0306816 A1	Dec. 11, 2008	1013
Scoda	U.S. Patent App. Pub. No. 2011/0307238 A1	Dec. 15, 2011	1016

Petitioner also relies on a Declaration of Dr. Tim Arthur Williams. Ex. 1007 (“Williams Decl.”). Patent Owner has submitted a Declaration of Kevin C. Almeroth, Ph.D. Ex. 2009 (“Almeroth Decl.”). Petitioner has submitted a transcript of Dr. Almeroth’s deposition. Ex. 1034. Patent Owner has submitted a transcript of Dr. Williams’s deposition. Ex. 2011.

F. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 7):

Claims Challenged	35 U.S.C. § ⁴	References
1–5	102(e) ⁵	Athas
1–5	103(a)	Hallak, Matthys

⁴ We assume the claims at issue have an effective filing date prior to March 16, 2013, the effective date of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), and we, therefore, apply the pre-AIA versions of 35 U.S.C. §§ 102 and 103.

⁵ Petitioner asserts that “Athas properly qualifies as prior art under pre-AIA 35 U.S.C. § 102(e), as pertaining to its provisional filing date of September 14, 2011.” Pet. 15–16. Patent Owner does not challenge this assertion.

Claims Challenged	35 U.S.C. § ⁴	References
1–5	103(a)	Scoda, Matthys

III. 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) (2020). 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).

Petitioner proposed that all terms should be given their plain and ordinary meaning. Pet. 14. Patent Owner, in addition to pointing out several claim term definitions found in the specification of the ’457 patent, proposed construing the term “a number of packets” in limitation 1b as “*the* number of packets.” Prelim. Resp. 5–8. We found that for our Institution Decision, it was unnecessary expressly to construe any claim terms. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

Post-institution, Patent Owner maintains that the term “a number of packets” received in limitation 1b should be construed as “*the* number of packets” intercepted in limitation 1a. PO Resp. 6–7. As further discussed

below, we need not determine whether limitation 1b should be so construed. *See infra* § IV.E. Accordingly, we do not find it necessary to provide an express construction for any terms for this Decision.

IV. ANALYSIS

A. Principles of Law

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). When evaluating a single prior art reference in the context of anticipation, the reference must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

A patent claim is unpatentable for obviousness under 35 U.S.C. § 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 ordinary skill in the art; and (4) objective evidence

of non-obviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).⁶

B. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quotation marks omitted).

Petitioner asserts that a person of ordinary skill in the art of the ’457 patent would have had “a Master’s Degree or higher in the field of electrical engineering, computer engineering, or computer science, or as of that time had a Bachelor’s Degree in the same fields and two or more years of experience in Internet Communications.” Pet. 14 (citing Williams Decl. ¶¶ 30–31). For our Institution Decision, we adopted Petitioner’s formulation. Institution Dec. 11.

Patent Owner has not provided a description of the ordinarily skilled artisan. However, Dr. Almeroth testifies that although he “do[es] not necessarily agree with every aspect of Dr. Williams’s explanation,” he bases his opinions on Dr. Williams’s description of the person of ordinary skill in the art. Almeroth Decl. ¶ 36. For this Final Written Decision, therefore, we adopt the description of the person of ordinary skill articulated by Petitioner

⁶ Neither party has presented evidence or arguments regarding objective evidence of non-obviousness.

and used previously in our Institution Decision. We find that this formulation is consistent with the '457 patent, the prior art of record, and is supported by the testimony of Dr. Williams. Williams Decl. ¶¶ 30–31.

C. Overview of the Prior Art

1. Athas (Exhibit 1018)

Athas relates to using a proxy platform to send a requested webpage to a mobile device in a format that allows the mobile device to browse the webpage in a low-power mode. *See* Ex. 1018, (57). Athas observes that “implementing mobile web services within a wireless environment can potentially tax the relatively limited resources” available within a mobile device environment, and notes that one traditional solution to this problem is to use a proxy web browser. *Id.* ¶¶ 32–33. Athas describes improvements to proxy web browsing where, instead of having to send new representations of a web page to a client in response to script-driven user interaction with web content, distributed script processing may reduce or eliminate “the need to transmit an entire fresh copy of the web page each time a scripting event occurs during display of web content.” *Id.* ¶¶ 33–34.

Figure 2 of Athas is reproduced below:

FIG. 2

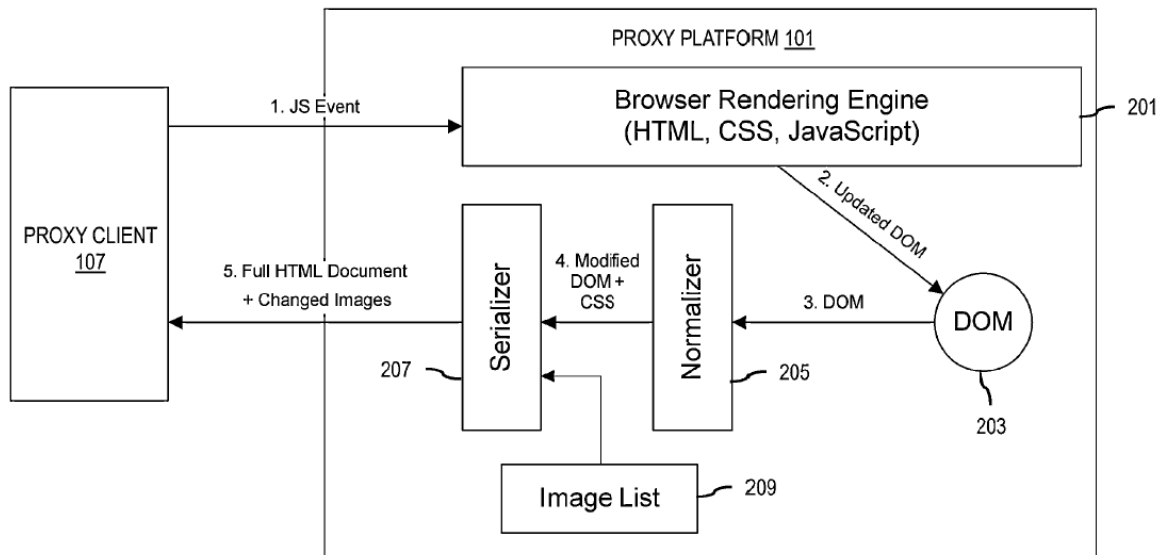


Figure 2 illustrates “components of a proxy server for providing distributed script processing for media reuse.” Ex. 1018 ¶ 17. As shown in Figure 2, “proxy platform 101 includes a browser rendering engine 201 for rendering web content based [on] one or more scripting events.” *Id.* ¶ 47. “[S]pecifically, the browser rendering engine 201 interprets web code and scripts (e.g., HTML, CSS, JavaScript) to generate or otherwise update a document object model (DOM) 203 to represent the rendering of the web content.” *Id.* Normalizer 205 processes or modifies DOM 203 based on the capabilities of proxy client 107, and serializer 207 generates or renders the web document sent to proxy client 107. *Id.* Serializer 207 is connected to image list module 209, which provides functions related to media reuse or smart image update. *Id.*

For performing the media reuse or smart image update features, proxy platform 101 maintains two image lists, a “current request list which maintains a list of media items in the DOM 203,” and a “current page list which maintains a list of images that were already sent down to the proxy client for the address or URL currently being handled.” Ex. 1018 ¶49. In operation, for each request, “proxy platform 101 checks the media items (e.g., images) in the current request list against the current page list,” and “[i]f an image or media item in the current request list exists in the current page list, the image or media item is not sent down to the proxy client 107, thereby reducing network traffic and bandwidth usage.” *Id.*

Athas discloses another configuration of proxy platform 101 in Figure 4A, which is reproduced below:

FIG. 4A

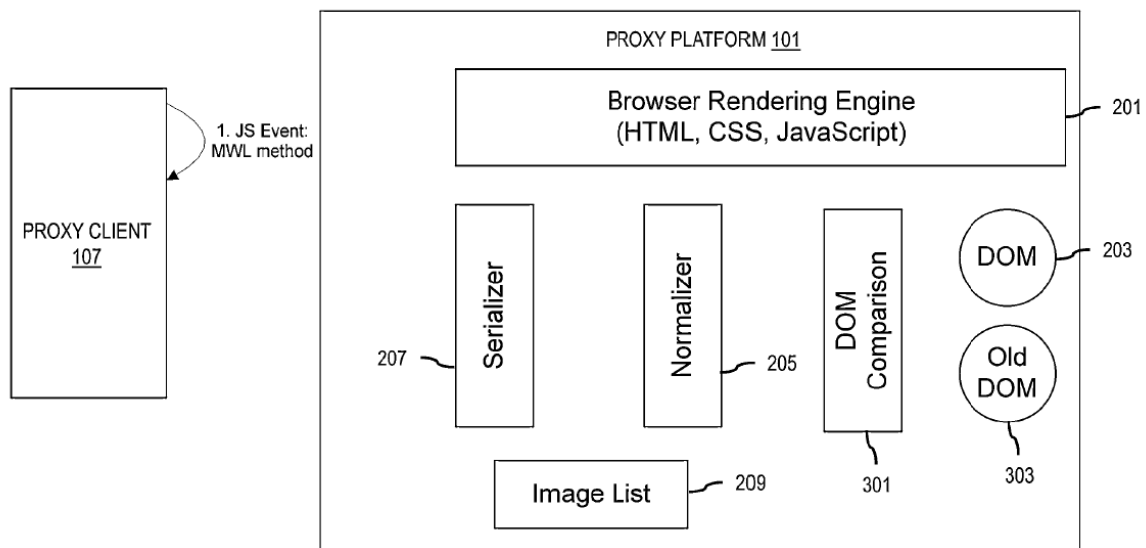


Figure 4A illustrates “components of a proxy server for providing distributed script processing for using local device resources.” Ex. 1018,

¶ 20. Figure 4A relates to the use of local device resources by way of the Mobile Web Library (MWL), which “is a script (e.g., JavaScript) library to handle basic on device operations.” *See id.* ¶ 84. “[S]upport for MWL and non-MWL scripts is enabled on events such as onload, onunload, onclick, onchange, and the like.” *Id.* ¶ 85. Proxy platform 101 may “strip non-MWL scripts before sending to the proxy client 107,” and, in an example, “MWL statements are left alone and remain in the order specified on the event.” *Id.* In addition, MWL statements may “be left as-is while any script (e.g., JavaScript) statements will be replaced by a MWL.callback() statement which will make a request to the proxy platform 101 to execute the script statements and return any updates made to the DOM.” *Id.* ¶ 87.

2. Hallak (Exhibit 1011)

Hallak relates to “securing a web client against malicious web attacks.” Ex. 1011, (57). Hallak describes implementing a secure gateway in a web application environment that performs all client-side execution on behalf of a web client, such that “client code is typically executed in a ‘sandbox’ to secure the gateway.” *Id.* at 3:14–27.

Figure 2A from Hallak is reproduced below:

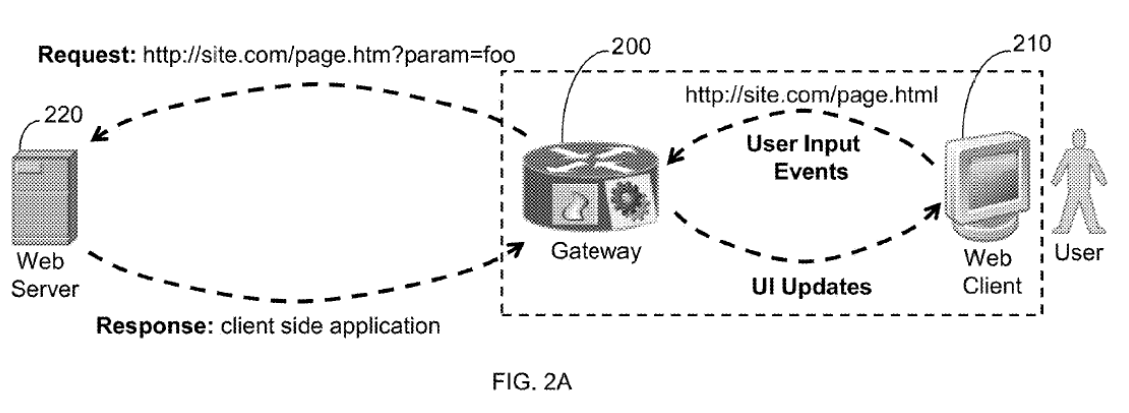


Figure 2A illustrates a deployment option for a secure gateway. Ex. 1011, 2:57–59. In this example, execution of “client side application code of a web application by the secure gateway 200 (instead of by the client itself) provides protection against harmful attacks, thereby protecting the client 210.” *Id.* at 3:28–31. In this way, “the inherently insecure protocols of the Internet are now limited to run in a secure environment between the server 220 and the gateway 200.” *Id.* at 3:45–48. “In an ‘un-trusted zone’ between the gateway 200 and client 210, a secure gateway-client protocol is utilized,” which “uses harmless HTML constructs and accepts a limited set of user events.” *Id.* at 3:48–51.

The operation of the secure gateway in Hallak is illustrated in Figure 3 reproduced below.

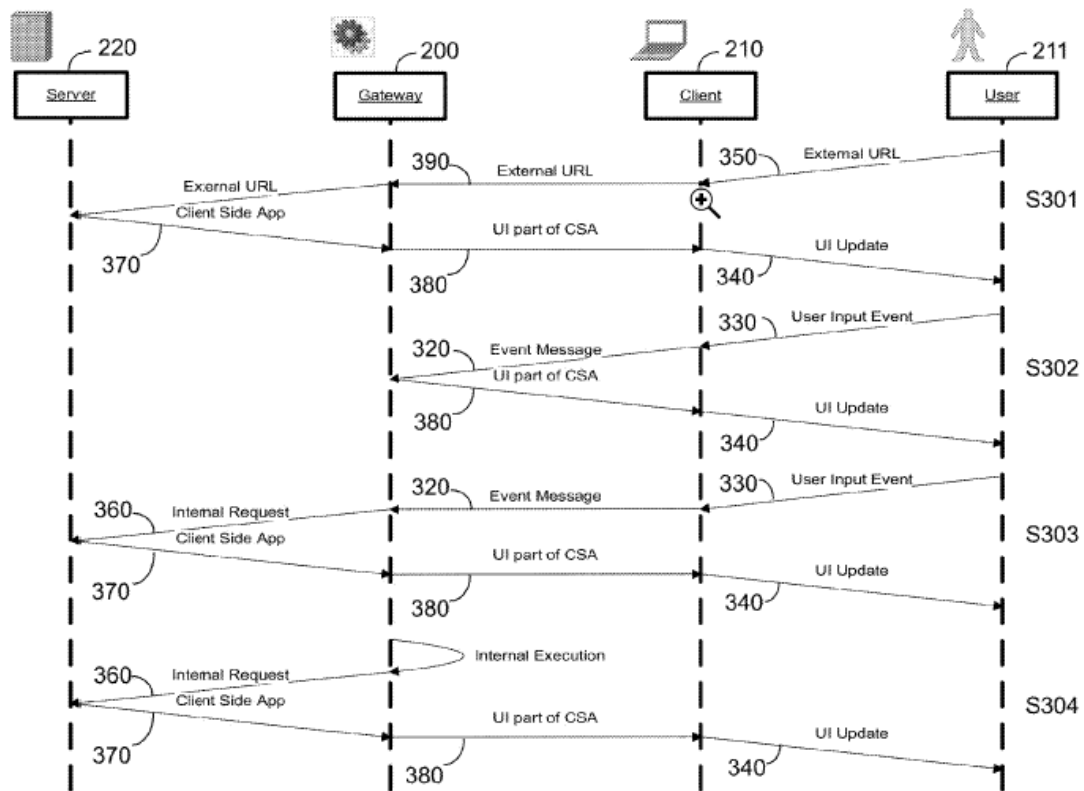


FIG. 3

As shown above, Hallak discloses that “client 210 is physically split into two distributed entities: an execution entity which is the gateway 200, and a UI [user interface] entity which may be a web browser of the client 210.” Ex. 1011, 4:46–49. “Updated UIs 380 are generated by the execution component in the gateway 200 and sent to the client 210, possibly in the form of static HTML (i.e., HTML code which does not include original scripts), and displayed to the user as UI updates 340.” *Id.* at 4:53–57. But “[e]ven when the code is executed by the gateway 200 there is no change in the user’s experience.” *Id.* at 4:65–67.

3. Matthys (Exhibit 1013)

Matthys relates to “replacing an advertisement in a webpage from a website with another advertisement.” Ex. 1013, (57). Matthys discloses that when a client machine requests to visit a website, a network device may intercept the request and the response for analysis. *Id.* ¶ 51. If it is determined that there are “one or more appropriate advertisements that may be of high interest to the user,” such “advertisement is then placed in the response.” *Id.*

Matthys describes detecting whether a webpage sent in response to a request includes any advertisements based on “the presence of such an advertisement or a script thereof,” and determining “whether the advertisement is replaceable.” Ex. 1013 ¶ 93. If so, “the original advertisement in the webpage is replaced by the preferable advertisement” such that “the original advertisement is either modified or replaced so that the webpage now carries a script including a link to the preferable

advertisement,” and the webpage is then displayed on a client machine. *Id.* ¶ 96.

4. Scoda (Exhibit 1016)

Scoda relates to using “a JavaScript emulator in a web content proxy server.” Ex. 1016 ¶ 1. In particular, Scoda discloses that a proxy server may optimize web page interactions for a client device by performing transformations, including, for example, JavaScript removal, on extracted content based on the specifications of the client device. *Id.* ¶ 2.

Figure 1 from Scoda is reproduced below:

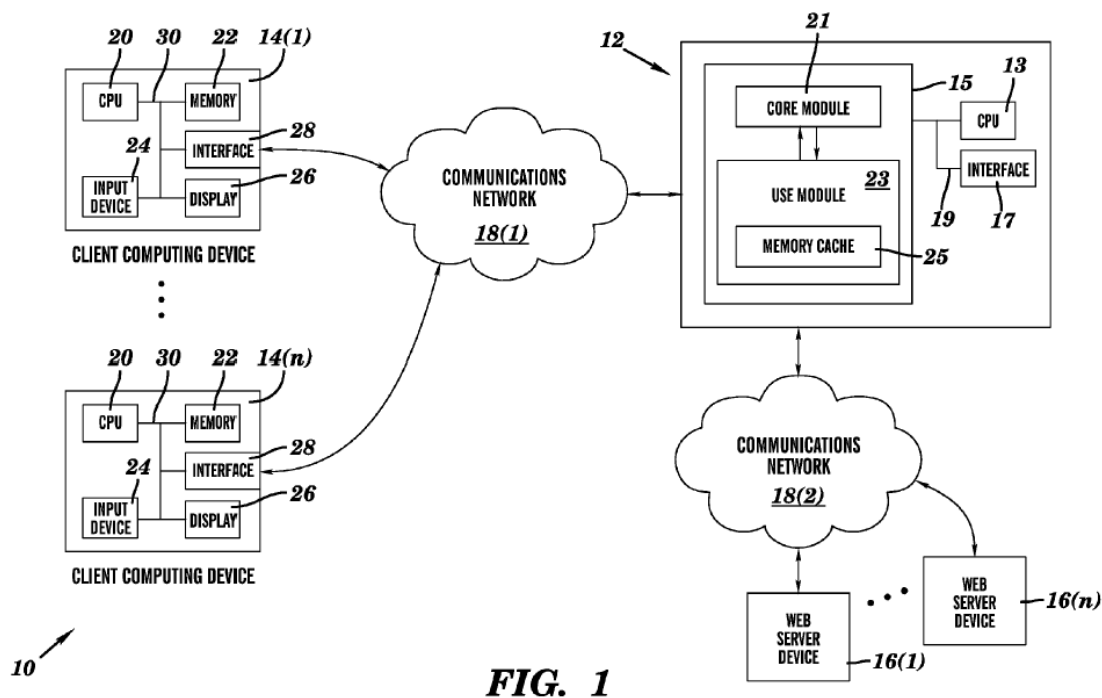


Figure 1 illustrates “a block diagram of an exemplary system environment with an optimized web content proxy server with a JavaScript emulator.” Ex. 1016 ¶ 17. As shown in Figure 1, web content proxy server 12 includes memory 15 having core module 21 and JavaScript emulator module 23. *Id.*

¶ 27. Proxy server 12 also includes interface 17 for communication with client devices 14(1)–14(n) and web server devices 16(1)–16(n) via communication networks 18(1) and 18 (2). *Id.* ¶ 28.

Scoda discloses that when a web page with JavaScript code is received at the proxy server, the proxy server creates a document object model of the web page, adds the JavaScript code from the web page to the document object model, executes the JavaScript instruction set, and appends any obtained content in an “optimized version” of the received web page. Ex. 1016 ¶¶ 60–64. The web page is then provided by the proxy server for use in a web browser on one of the client devices. *Id.* ¶ 65.

D. Anticipation by Athas

Petitioner asserts that claims 1–5 are unpatentable under 35 U.S.C. § 102 as anticipated by Athas. Pet. 30–41; Williams Decl. ¶¶ 111–143. Upon consideration of Petitioner’s arguments, Patent Owner’s responses, and the supporting evidence in this record, we are persuaded that Petitioner has not demonstrated by a preponderance of the evidence that claims 1–5 are anticipated by Athas. We focus our analysis on independent claim 1, as follows.

1. Claim 1

Petitioner asserts that each limitation of claim 1 is met by Athas and provides an element-by-element analysis, with supporting testimony from Dr. Williams. Pet. 30–37; Williams Decl. ¶¶ 122–139. For example, Petitioner contends that claim limitation 1a (“A machine-implemented method of web page script management . . . in a network appliance implemented by at least one processor, intercepting a number of packets sent

from a server and addressed to a client browser . . .”) is met by Athas’s disclosure of “web page script management ‘for providing a browsing experience to enable access to advanced function that rely on script-based interactions and related web technologies.’” Pet. 30–31 (quoting Ex. 1018 ¶ 3). Petitioner explains that “Athas further discusses computer implemented methods including ‘the use of computer system 1000 for implementing some or all of the techniques described herein’ for utilizing a JavaScript emulator in a proxy server.” *Id.* at 31 (quoting Ex. 1018 ¶ 121). In similar fashion, Petitioner asserts that the remaining limitations 1b–1e are met by Athas. *See id.* at 33–37.

a. The “Number of Packets” Received, Modified, and Forwarded

Limitations 1b–1d, respectively, call for “determining with the network appliance that a number of packets received in the network appliance comprise a web page comprising a first embedded script,” “modifying at least one said packet in the number of packets with the network appliance by replacing the embedded script from the web page with a second embedded script,” and “forwarding the number of packets as modified by the network appliance to the client browser.”

Petitioner contends that Athas discloses this sequence of steps. Pet. 33–36. Petitioner asserts that the “determining” step 1b is met. *Id.* at 33–34. Petitioner explains that “Athas discloses the use of a network appliance, the proxy platform 101, to provide routing and processing of when a web page contains scripts.” *Id.* at 33. In particular, Petitioner asserts that “Athas discloses the determination and processing of both MWL [Mobile Web Library] and non-MWL scripts in a web page.” *Id.* Petitioner observes that

“web pages comprise packets.” *Id.* Petitioner concludes, “[t]hus, Athas discloses determining with the network appliance that a number of packets received in the network appliance comprise a web page comprising a first embedded script.” *Id.* at 34.

Petitioner further asserts that Athas discloses “modifying at least one said packet” in step 1c. Pet. 34–35. Petitioner contends that in Athas, “proxy platform 101 will strip non-MWL scripts before sending to the proxy client 107.” *Id.* at 34 (quoting Ex. 1018 ¶ 85). Petitioner further contends that “Athas discloses replacing non-MWL scripts with a callback script and forward[ing] the replacement script to the client.” *Id.* Petitioner concludes, “[t]hus, Athas discloses modifying at least one said packet in the number of packets with the network appliance by replacing the embedded script from the web page with a second embedded script.” *Id.* at 35.

Finally, Petitioner asserts that Athas discloses “forwarding” step 1d by “sending the modified page to the client for display by a browser rendering engine.” Pet. 36. In particular, Petitioner asserts that “the proxy platform 101 includes a browser rendering engine 201 for rendering web content based one or more scripting events’ where the ‘normalizer module 205 then interacts with the serializer module 207 to generate or render the web document that is to be sent to the proxy client 107 for display.” *Id.* (quoting Ex. 1018 ¶ 47). Petitioner concludes, “[t]hus, Athas discloses forwarding the number of packets as modified by the network appliance to the client browser.” *Id.*

Patent Owner disputes this analysis. PO Resp. 14–26. Specifically referring to “intercepting” step 1a, Patent Owner responds that “Claim 1 requires intercepting a number of packets *sent from a server and addressed*

to a client browser.” Id. at 14. Patent Owner explains that “[t]hese same packets are then manipulated in Limitations [1b] (determining *the* packets comprise a web page); [1c] (modifying *the* packets); [1d] (forwarding *the* number of packet[s]).” *Id.*

Referring to Petitioner’s reliance on Figure 1 of Athas to meet the “intercepting” step, Patent Owner argues that “[t]o the extent FIG. 1 discloses proxy platform 101 intercepting a number of packets sent from a web server and addressed to a client browser, these same number of packets are never again discussed by Petitioner.” *Id.* at 16. Patent Owner continues, “Petitioner’s [Athas ground] relies on packets sent between proxy client and proxy platform that a [person of ordinary skill] would have known to be *different packets.*” *Id.* (emphasis added).

Patent Owner further develops its “different packets” argument. *Id.* at 17–20. Referring to paragraph 47 of Athas, describing Figure 2, Patent Owner asserts that “[t]he cited portion of Athas discloses browser rendering engine 201 interpreting and rendering web code *from a proxy client* and does not determine that the number of packets *sent from a server* and addressed to a client browser comprise a web page comprising a first embedded script.” *Id.* at 18. Referring to paragraph 95 of Athas, which describes the operation of proxy platform 101 rendering web page content, Patent Owner argues that “the rendering of the web page described in paragraph [0095] of Athas occurs after receiving requests from the proxy client 107 and, thus, this rendering would not occur at the same packets that are sent from a server and addressed to a client browser.” *Id.* at 19 (citing Almeroth Decl. ¶ 76).

As noted *supra*, in Section III, Patent Owner argues that the “number of packets received in the network appliance” in limitation 1b are the same

as “the number of packets” intercepted in limitation 1a (*see* PO Resp. 6–7). Petitioner responds that resolving this argument is not necessary. Pet. Reply 1. We find that whether claim 1 requires the packets intercepted by the network appliance in limitation 1a to be the same packets involved in limitations 1b–1d, Petitioner has not persuasively shown that any same number of packets in Athas that are received at proxy platform 101 are then modified and forwarded as required by limitations 1b–1d, for the reasons discussed below.

We agree with Patent Owner that the number of packets in limitations 1b–1d are the same, and, therefore, we find that Petitioner’s citations to Athas do not disclose the sequence of operations recited in claim limitations 1b–1d. Petitioner, therefore, does not demonstrate that Athas anticipates the claim. Specifically, we are not persuaded either by Petitioner’s assertions or Dr. Williams’s testimony that in Athas, the same “number of packets” that are received and modified by Athas’s proxy platform 101 are then forwarded to Athas’s proxy client 107, as required by limitations 1b–1d. PO Resp. 6–7; 15–20; Almeroth Decl. ¶¶ 76–77. Petitioner does not persuasively address this issue the Petition or in its Reply (*see* Pet. Reply 2–11, asserting, in a footnote, only that “Patent Owner mischaracterizes Dr. Williams’s testimony regarding same versus different packets,” and that “Dr. Williams’s testimony does not support Patent Owner’s arguments.”). *Id.* at 11 n.4 (citing Ex. 2011, 115:22–117:20, 118:5–12).

The citations to Dr. Williams’s testimony do not help Petitioner meet its burden of showing that the “same packets” feature is met by a preponderance of the evidence. Pet. Reply 11. The testimony of Dr. Williams cited by Petitioner relates to whether a hypothetical request for

a web page forwarded from a conventional proxy to a server would use the same packets as the original request from a client to the proxy. *See* Ex. 2011, 115:7–21. The testimony does not address the issue raised by limitations 1b–1d, which is whether Athas discloses using the same packets for the receiving, modifying, and forwarding operations performed by the network appliance. In any event, we find Dr. Williams’s testimony on this issue to be equivocal and unconvincing. Several times he avoids answering questions by stating “it depends on how the software is written” or “it depends on the details of the code.” *See id.* at 117:8–17; 118:10–12.

There is, therefore, no persuasive evidence of record demonstrating that Athas discloses that the same “number of packets” received at proxy platform 101 are, in a modified form, forwarded to proxy client 107. For example, there is no support in the record for a finding that once the content of packets sent from service platform 109 to proxy platform 101 in Athas is extracted and manipulated to replace non-MWL scripts with MWL scripts and the DOM is generated, modified versions of the same received packets are forwarded to provide the web page to proxy client 107, as opposed to completely new packets. We find no sufficient support for this contention in Dr. Williams’s testimony:

Q. [Counsel for Petitioner] If a packet with a JavaScript – or if a packet with solely JavaScript is received and the JavaScript is executed to generate an image, and a new packet with the generated image is sent, is that new packet a modified version of the original packet that only had JavaScript?

A. [Dr. Williams] I think that’s highly contextual and in the eye of the beholder, sort of philosophical discussion.

...

Q. No objective boundaries as to whether that's a new packet or a modified version of the original packet?

A. There's no technical standard for this, no scientific process for this.

Ex. 2011, 108:3–25. We find this testimony is, at best, inconclusive.

At the oral hearing, Patent Owner asserted that in Athas “[w]hat we see is wholesale unpacking, wholesale processing and rendering of everything, the HTML, the CSS, the script, and repackaging it, creating a new document, repackaging it in a new set of packets that is then sent to the proxy client.” Hearing Tr. 86:3–6. We agree with this assessment of Athas as failing to meet this limitation. *See* discussion of Athas, *supra*, in Section IV.C.1.

Patent Owner further asserted that in the Petition, “aside from sort of mentioning the discussion of packets generally in Athas, there's absolutely no citation to evidence that it would be the same packets. There's nothing cited in Athas that it's the same packets. There's nothing cited in Dr. Williams's testimony that it's the same packets. . . . And so evidentiary wise there's a shortcoming.” *Id.* at 86:8–12. Petitioner did not offer a rebuttal to this argument at the oral hearing. *See id.* 87:5–11. We agree with Patent Owner that Petitioner has not presented a persuasive rebuttal to Patent Owner's “different packets” argument.

For the reasons given, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claim 1 is anticipated by Athas.

2. Claims 2–5

Claims 2–5 depend from claim 1. For the reasons given for claim 1, we determine that Petitioner has not demonstrated by a preponderance of the evidence that these claims are anticipated by Athas.

3. Summary and Conclusion

For the reasons given, we find that Petitioner has failed to demonstrate by a preponderance of the evidence that claims 1–5 are anticipated by Athas.

E. Obviousness over Hallak and Matthys

Petitioner asserts that claims 1–5 would have been obvious over the combination of Hallak and Matthys. Pet. 7. Petitioner presents an element-by-element analysis for each challenged claim in this ground. *Id.* at 45–58; Williams Decl. ¶¶ 155–190. Petitioner also provides a rationale for combining the references. *See* Pet. 41–45; Williams Decl. ¶¶ 145–154.

1. Limitation 1e

Limitation 1e calls for “executing the first embedded script with the network appliance in response to receiving an indication that the client browser has executed the second embedded script.” The Petition relies on Hallak’s execution of the execution component of the client-side application (CSA) received from a server in the sandbox at the gateway to meet this limitation. Pet. 52 (citing Ex. 1011, 4:24–28).

Initially, Patent Owner argued that the Petition did not identify which element in Hallak was the “first embedded script” that is executed by the gateway in response to the client executing the “second embedded script.” *See* Prelim. Resp. 6, 30; Rehearing Req. 2–3. In instituting trial, we

disagreed with Patent Owner. *See* Institution Dec. 25–26. Patent Owner requested rehearing of our Institution Decision. Rehearing Req. 11. On rehearing, we again concluded that the record before us at that stage did not support Patent Owner’s argument that Petitioner failed to show that Hallak teaches or suggests claim limitation 1e. Rehearing Dec. 4–6.

During the trial, Patent Owner continued to pursue its argument that Petitioner has failed to prove by a preponderance of evidence that Hallak meets limitation 1e. *See* PO Resp. 33–46; PO Sur-reply 12–22. Patent Owner explained that in Hallak, “the identified execution component of CSA 370 is initially executed in the sandbox upon being received by gateway 200 and is not executed ‘in response to’ the client browser executing another embedded script, as is required by limitation 1e.” PO Resp. 36 (citing Ex. Almeroth Decl. ¶ 105).

Patent Owner faults our Institution Decision and Decision on Rehearing for failing to recognize that in Hallak, “the scripts embedded in the web page (first embedded scripts) are executed before anything is sent to the client and not ‘in response to receiving an indication that the client browser has executed the second embedded script,’ as claimed.” PO Resp. 38 (citing Almeroth Decl. ¶ 108). Patent Owner explains, “[t]he scripts within CSA code 370 are not executed in response to event messages 320 as these scripts were already executed by gateway to generate the ‘new’ CSA 370.” *Id.* (citing Almeroth Decl. ¶ 109). Patent Owner further asserts, “Thus, to the extent Hallak executes scripts at gateway 200, those scripts are generated by the gateway 200 and not from a web page.” *Id.* (citing Almeroth Decl. ¶ 109).

On the complete record before us, we agree with Patent Owner that Petitioner’s analysis does not establish that limitation 1e is taught or suggested by Hallak. The Petition relies on the execution component of the CSA 370 as the “first embedded script.” *See* Pet. 52. The Petition relies on the minimal callback scripts (replacing the first embedded script) as the “second embedded script.” *Id.* As the Petition acknowledges, Hallak discloses executing the first embedded script in a sandbox. *Id.* (citing Ex. 1011, 4:24–28). Hallak describes this step of executing the first script as taking place *before* the UI part of the original CSA and the “minimal callback scripts” (second embedded scripts) are sent to the client. Ex. 1011, 4:27–34; Fig. 3. Therefore, we find for the reasons given that execution of the first embedded script occurs before execution of the second embedded script at the client, and, therefore, the requirement of the claim limitation that execution of the first script be “in response to receiving an indication that the client browser has executed the second embedded script” is not met by Hallak.

In its Reply and at the oral argument, Petitioner altered course. *See* Pet. Reply 18–19; Hearing Tr. 25:1–26:13. Referring to Hallak’s Figure 3, reproduced *supra* in Section IV.C.2, Petitioner contended that Hallak discloses “two separate executions, one in association with step 301 and another one in association with the continuing step 302.” Hearing Tr. 25:5–7. In Petitioner’s “two separate executions” scenario, the first execution is that described *supra*, and occurs at the gateway when the execution component is removed from CSA 370 and executed in the sandbox. Hearing Tr. 25:7–11. According to Petitioner, a second execution occurs after the user of a client device executes one of the “minimal callback” scripts

received from the secure gateway and sends an event message back to the gateway. *Id.* at 26:8–13.

Patent Owner asserts that this is a new theory is not disclosed in the Petition. We agree.⁷ Nor does the new theory support Petitioner’s contention that Hallak meets limitation 1e. PO Sur-reply 15–20. According to Hallak, execution of the first embedded script in the sandbox creates a “new CSA.” Ex. 1011, 4:27–30. Thus, Hallak does not disclose that the CSA executed in the second execution of scripts is the same CSA 370 taken from the intercepted web page. As Patent Owner points out, to the extent that there is a “second execution” of scripts in Hallak, those scripts are generated at the gateway, not from the intercepted web page. Hearing Tr. 80:17–21.

For the reasons given, we find that Petitioner has not demonstrated by a preponderance of the evidence that independent claim 1, or its dependent claims 2–5, would have been obvious in light of Hallak and Matthys.

F. Obviousness over Scoda and Matthys

Petitioner asserts that claims 1–5 would have been obvious over Scoda and Matthys and presents an element-by-element analysis for each challenged claim in this ground. Pet. 62–75; Williams Decl. ¶¶ 201–234.

⁷ When pressed at the hearing to identify support for this second execution step in the record, Petitioner’s counsel pointed to pages 56–59 of “the petition.” Hearing Tr. 26:25–26. We find no support for this new theory at those pages or elsewhere in the Petition.

Petitioner also provides a rationale for combining the references. *See* Pet. 58–62; Williams Decl. ¶¶ 191–200.

1. Limitation 1e

For this limitation, the Petition relies on *Matthys*. Pet. 70. In the Institution Decision, in determining that Petitioner did not show a reasonable likelihood of prevailing on this ground, we relied on the failure of *Matthys* to disclose sufficiently “executing the first embedded script with the network appliance *in response to* receiving an indication that the client browser has executed the second embedded script,” as is recited in limitation 1e. Institution Dec. 30–31. We explained that “[t]he paragraphs in *Matthys* that Petitioner relies upon describe operations at a network device, without any discussion of executing a script in response to ‘an indication that the client browser has executed the second embedded script,’ as recited in claim limitation 1e.” *Id.* at 31.

Post-institution, Patent Owner responds by arguing that the cited portions of *Matthys* relied on in the Petition for limitation 1e fail to teach “(1) the client browser executes the second embedded script; (2) the network appliance receives an indication that the second script has been executed; and (3) the network appliance executes the first embedded script in response to execution of the second embedded script.” PO Resp. 52–53.

In reply, Petitioner points to no new support for its position that *Matthys* teaches limitation 1e. Pet. Reply 26. Instead, Petitioner refers back to its original contention in the Petition, “that *Matthys* discloses, for example, detection of a script, triggering an analysis of whether that script is replaceable, and determining an appropriate replacement script.” *Id.* (citing

Pet. 70). We find that this is insufficient to carry Petitioner's burden for the reasons given here and in the Institution Decision.

Petitioner's reliance on *Matthys* centers on the operation of a network device; in one cited embodiment, the network device determines if a web page has available space to include an advertisement, and, in another cited embodiment, it detects whether a web page includes an advertisement, or a script that links to an advertisement, and, if so, determines whether the advertisement is replaceable. Pet. 70; Ex. 1013 ¶¶ 70, 93. Petitioner does not demonstrate sufficiently how these various advertisement functionalities described in the cited portions of *Matthys* teach or suggest limitation 1e. As noted in the Institution Decision, the cited portions of *Matthys* are limited to operations that occur at the network device. *See* Institution Dec. 31.

Petitioner has not shown sufficiently that *Matthys* teaches or suggests executing a "first embedded script" at the network device in response to an indication of executing a "second embedded script" at, for example, *Matthys*'s client machine.

Petitioner further asserts that "[u]pon reading *Scoda* and *Matthys*, a [person of ordinary skill] would have understood that when the client executes, for example, the script field identifier, then the proxy executes the corresponding script." Pet. Reply 26 (citing Ex. 1016 ¶ 54). Patent Owner responds that "Petitioner's reliance on the execution of *Scoda*'s script field identifier . . . is a new theory that is absent from the Petition." PO Sur-reply 24. Patent Owner also argues that "Petitioner's assertion of a [person of ordinary skill's] understanding is attorney argument lacking support from Dr. Williams or any other cited reference." *Id.* at 25.

We agree with Patent Owner that this is a new argument, and further, that it is insufficiently supported by any testimonial or other evidence. We, therefore, find this new argument unavailing to meet Petitioner's burden of demonstrating, by a preponderance of the evidence, that the combination of Scoda and Matthys teaches limitation 1e.

Petitioner's reliance on Scoda for claimed features missing from Matthys (*see* Pet. Reply 26) is unavailing. Petitioner's assertion that one of ordinary skill in the art "would have understood that when the client executes, for example, the script field identifier, then the proxy executes the corresponding script" (*id.*), is not further developed, and is not supported by any testimony or other evidence showing that the script field *identifier* is a script that is executed at Scoda's client device, thus triggering the execution of the identified script at Scoda's proxy server. The cited paragraph of Scoda relates to the proxy server executing "each of the JavaScript instruction sets in the document object model," but does not disclose or suggest executing a script at the client device. *See* Ex. 1016 ¶ 54. Accordingly, in addition to being untimely presented, this argument does not demonstrate by a preponderance of the evidence that the combination of Scoda and Matthys teaches or suggests limitation 1e.

For the reasons given, we find that Petitioner has not demonstrated by a preponderance of the evidence that independent claim 1, or its dependent claims 2–5, would have been obvious in light of Scoda and Matthys.

V. CONCLUSION

For the foregoing reasons, we determine that Petitioner has not demonstrated by a preponderance of the evidence that any challenged claims of the '457 patent are unpatentable.

In summary,

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1–5	102(e)	Athas		1–5
1–5	103(a)	Hallak, Matthys		1–5
1–5	103(a)	Scoda, Matthys		1–5
Overall Outcome				1–5

VI. ORDER

For the foregoing reasons, it is

ORDERED that claims 1–5 of the '457 patent have not been proven unpatentable by a preponderance of the evidence.

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

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