

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

METACLUSTER LT, UAB,
Petitioner,

v.

BRIGHT DATA LTD.,
Patent Owner.

IPR2022-00936
Patent 11,206,317 B2

Before KRISTEN L. DROESCH, SHEILA F. McSHANE, and
RUSSELL E. CASS, *Administrative Patent Judges*.

McSHANE, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

Metacluster LT, UAB (“Petitioner”)¹ filed a Petition requesting *inter partes* review of claims 1–27, 29, and 30 of U.S. Patent No. 11,206,317 B2 (Ex. 1001, “the ’317 patent”), along with the supporting Declaration of James Olivier, Ph.D. Paper 1 (“Pet.”); Ex. 1003. Bright Data Ltd. (“Patent Owner”) filed a Preliminary Response to the Petition, along with the supporting Declaration of Tim A. Williams, Ph.D. Paper 7 (“Prelim. Resp.”); Ex. 2001.

We have authority under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that 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 that follow, we determine that Petitioner has not demonstrated that there is a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. For the reasons set forth below, and pursuant to 35 U.S.C. § 314, we deny *inter partes* review of claims 1–27, 29, and 30 of the ’317 patent.

B. *Related Matters*

The parties identify several litigations involving patents that are related to the ’317 patent, but there is no ongoing litigation involving the ’317 patent. Pet. 2–3; Paper 4, 2–3. The parties also identify *inter partes* reviews and Requests for Reexamination involving patents that are

¹ Petitioner also identifies Code200, UAB; Teso LT, UAB; Oxysales, UAB; and coretech lt, UAB as other real parties-in-interest. Pet. 2.

related to the '317 patent, but none of these involve the '317 patent. Pet. 3–5; Paper 4, 1–3.

C. The '317 Patent

The '317 patent is titled “System Providing Faster And More Efficient Data Communication” and issued on December 21, 2021, from an application filed on May 27, 2021. Ex. 1001, codes (22), (45), (54). The application for the '317 patent is a continuation of Application No. 16/600,505, which is continuation of Application No. 16/278,109, now U.S. Patent No. 10,484,511, which is a continuation of Application No. 15/957,950, now U.S. Patent No. 10,225,374, which is a continuation of Application No. 14/025,109, now U.S. Patent No. 10,069,936, which is a division of Application No. 12/836,059, now U.S. Patent No. 8,560,604, and which claims priority to Provisional Application No. 61/249,624. *Id.* at code (60).

The '317 patent is directed to addressing the “need for a new method of data transfer that is fast for the consumer, cheap for the content distributor and does not require infrastructure investment for ISPs.” Ex. 1001, 1:54–56. The '317 patent states that other “attempts at making the Internet faster for the consumer and cheaper for the broadcaster,” such as proxy servers and peer-to-peer file sharing, have various shortcomings. *Id.* at 1:58–3:3. The '317 patent provides a system and method “for faster and more efficient data communication within a communication network,” such as in the network illustrated in Figure 3, reproduced below. *Id.* at 3:13–16, 4:3–5.

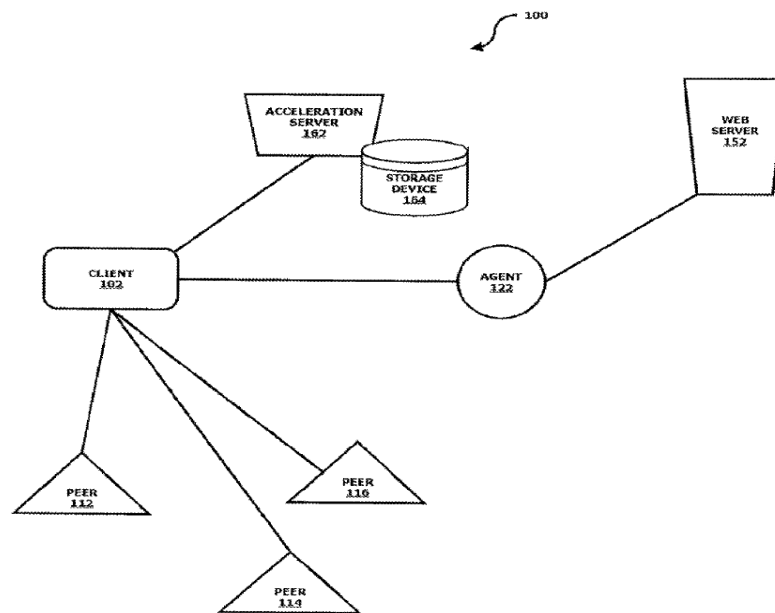


FIG. 3

Figure 3, above, is a schematic diagram depicting communication network 100 including a number of communication devices. Ex. 1001, 4:54–61. Client 102 is capable of communicating with peers 112, 114, and 116, as well as with one or more agents 122. *Id.* at 4:56–58. Web server 152 may be “a typical HTTP server, such as those being used to deliver content on any of the many such servers on the Internet.” *Id.* at 4:63–67. Acceleration server 162 includes acceleration server storage device 164 with an acceleration server database, which “stores Internet Protocol (IP) addresses of communication devices within the communication network 100 having acceleration software stored therein.” *Id.* at 5:11–16.

In operation, a client may request a resource on the network, for example, through the use of an Internet browser. Ex. 1001, 12:62–13:3. If server 152 is the target of the request, the client sends the IP address of server 152 to acceleration server 162. *Id.* at 13:8–13. Acceleration server 162 then prepares a list of agents that can handle the request, which

includes communication devices “that are currently online, and whose IP address is numerically close to the IP [address] of the destination Web server 152.” *Id.* at 13:19–29. The client then sends the original request to the agents in the list to find out which “is best suited to be the one agent that will assist with this request.” *Id.* at 13:31–36. The connection established between the agent and client may be a Transmission Control Protocol [TCP] connection. *Id.* at 17:61–64.

Each agent responds to the client with information as to “whether the agent has seen a previous request for this resource that has been fulfilled,” and “which can help the client to download the request information from peers in the network.” Ex. 1001, 13:51–58. The client selects an agent based on a number of factors, and the selected agent determines whether data stored in its memory or the memory of the peers “still mirrors the information that would have been received from the server itself for this request.” *Id.* at 13:64–14:1, 14:35–38. If the selected agent does not have the necessary information to service a request, it may “load the information directly from the server in order to be able to provide an answer to the requesting client.” *Id.* at 14:62–67.

Claim 1 of the ’317 patent, the only independent claim, is reproduced below.

1. A method for fetching, by a first device, a first web-page that is identified by a first Uniform Resource Locator (URL) and is stored in a first web server and a second web-page that is identified by a second URL and is stored in a second web server, for use with a second device that stores a group of Internet Protocol (IP) addresses, each of the IP addresses is associated with a respective geographical location, the method comprising:

identifying, at the first device, the first URL and a first geographical location that is associated with at least one of the IP addresses in the group;

sending, by the first device to the second device, the first URL and the first geographical location;

receiving, by the first device from the second device, the first web-page, in response to the sending of the first URL and the first geographical location;

identifying, at the first device, the second URL and a second geographical location that is associated with at least one of the IP addresses in the group;

sending, by the first device to the second device, the second URL and the second geographical location; and

receiving, by the first device from the second device, the second web-page, in response to the sending of the second URL and the second geographical location.

Ex. 1001, 19:18–41.

D. Asserted Grounds of Unpatentability

Petitioner challenges the patentability of claims 1–27, 29, and 30 of the '317 patent on the following grounds:

Claim(s) Challenged	35 U.S.C. § ²	References
1–9, 14–22, 24–27, 29, 30	103(a)	Goldstein ³ , Ling ⁴
10–13, 23	103(a)	Goldstein, Ling, RFC 1122 ⁵

Pet. 10.

II. ANALYSIS

A. *Level of Ordinary Skill in the Art*

Petitioner asserts that a person of ordinary skill in the art at the time of the invention would have had “at least a Bachelor’s degree in Computer Science or related field (or equivalent experience), and at least two years’ experience working with and programming networked computer systems.” Pet. 12 (citing Ex. 1003 ¶¶ 32–33). Patent Owner asserts that a person of ordinary skill in the art 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.” Prelim. Resp. 7–8 (citing Ex. 2001 ¶ 24). Patent Owner asserts that Petitioner’s proposed qualifications “are not materially different” in terms of an affect on the decision in this case. *Id.* at 8.

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art;

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the ’317 patent claims priority to a provisional application that was filed before this date, with Petitioner not contesting that priority, the pre-AIA versions of § 103 apply. *See* Ex. 1001, code (60).

³ US 2003/0149720 A1, published Aug. 7, 2003 (Ex. 1005).

⁴ US 2006/0206586 A1, published Sept. 14, 2006 (Ex. 1006).

⁵ Requirements for Internet Hosts – Communication Layers, Network Working Group, RFC 1122, October, 1989 (Ex. 1007).

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) (citation omitted). The level of ordinary skill in the art is also reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

Considering the subject matter of the ’317 patent, the background technical field, and the prior art, we agree with Petitioner’s proposed qualifications, absent the qualifier “at least” because it introduces vagueness, and adopt it for the purposes of this Decision.

B. Claim Construction

In this *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (2021). Under the principles set forth by our reviewing court, the “words of a claim ‘are generally given their ordinary and customary meaning,’” as would be 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 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “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).

The parties present their respective views on the interpretation of some claim terms. Pet. 20–23; Prelim. Resp. 18–21. Patent Owner asserts that disputes on the interpretation of most of the claim terms do not affect the determinations for the purposes of institution. Prelim. Resp. 18–21.

In view of the issues we address below, we determine that it is not necessary to provide an express interpretation of any claim terms. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

C. Alleged Obviousness of Claims 1–9, 14–22, 24–27, 29, and 30 Over Goldstein and Ling and Obviousness of Claims 10–13 and 23 Over Goldstein, Ling, and RFC 1122

Petitioner contends that claims 1–9, 14–22, 24–27, 29, and 30 would have been obvious over Goldstein and Ling and claims 10–13 and 23 would have been obvious over Goldstein, Ling, and RFC 1122. Pet. 24–84. To support its contentions, Petitioner provides explanations as to how the combinations of references teach each claim limitation along with rationale to combine the references. *Id.* Petitioner also relies upon the Olivier Declaration (Ex. 1003) to support its positions. Patent Owner argues that Petitioner provides insufficient motivation to combine the references and the references do not teach some of the limitations of the claims. Prelim. Resp. 24–38. Patent Owner also relies upon the Williams Declaration (Ex. 2001) to support its positions.

We begin our discussion with brief summaries of Goldstein and Ling, and then address the evidence and arguments presented.

1. *Goldstein (Ex. 1005)*

Goldstein is directed to increasing access speed by a client computer to server data over a wide area network (WAN). Ex. 1005 ¶ 13. The invention includes a proxy server system in the configuration shown in Figure 3, reproduced below.

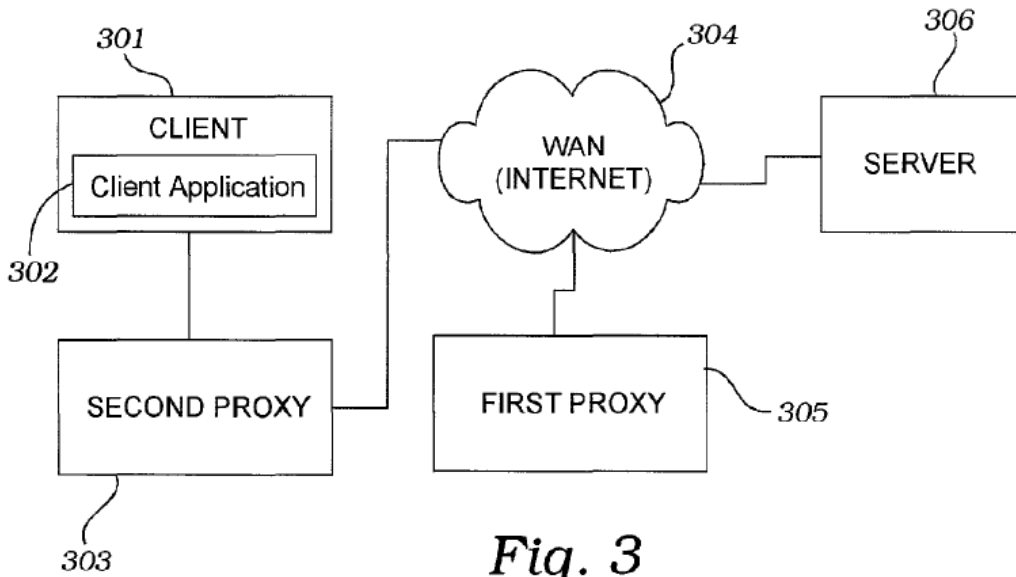


Fig. 3

Figure 3, above, is a block diagram of the configuration of the communication system. Ex. 1005 ¶ 18. As depicted in Figure 3, the system communicates over a wide area network, such as the Internet, and includes client computer 301, first proxy computer 305, second proxy computer 303, and server computer 306. *Id.* ¶ 24.

A user employs client application 302 on client 301 to request content stored on a web server 306. Ex. 1005 ¶¶ 24–25. As shown in Figure 5, reproduced below, “[t]he browser sends a data request to the second proxy.” *Id.* ¶ 42.

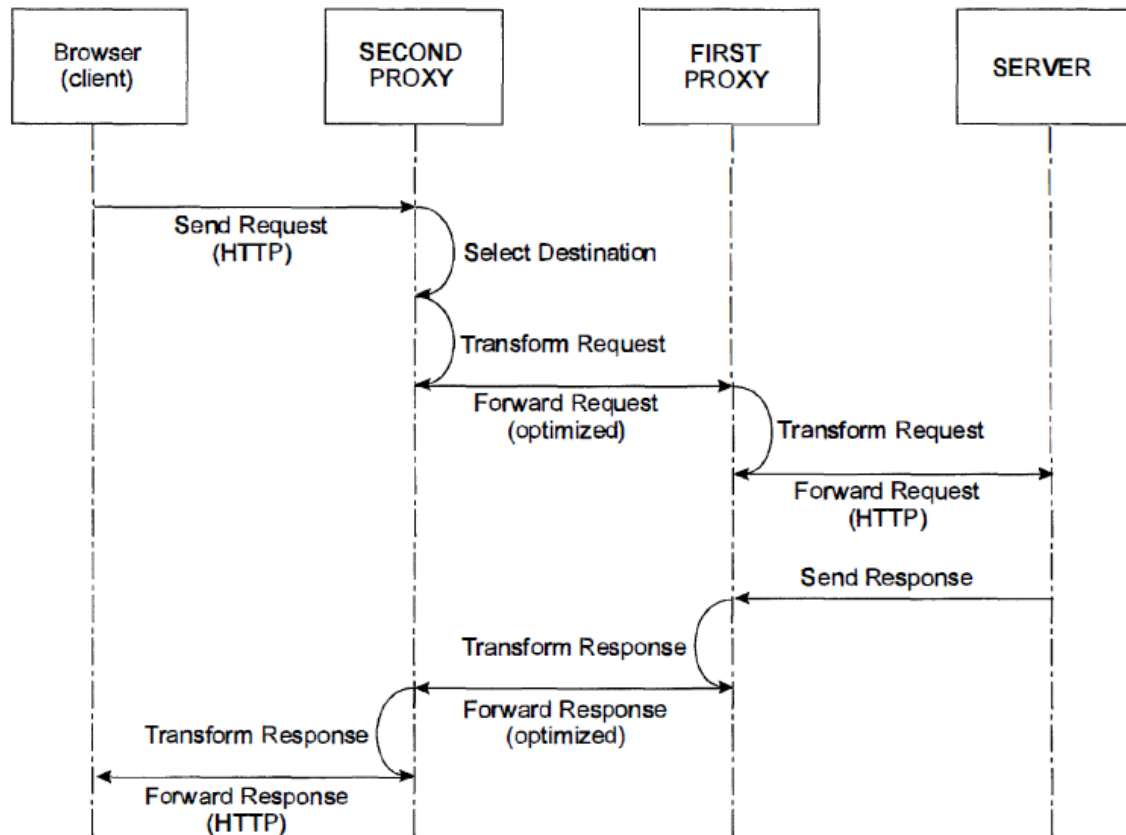


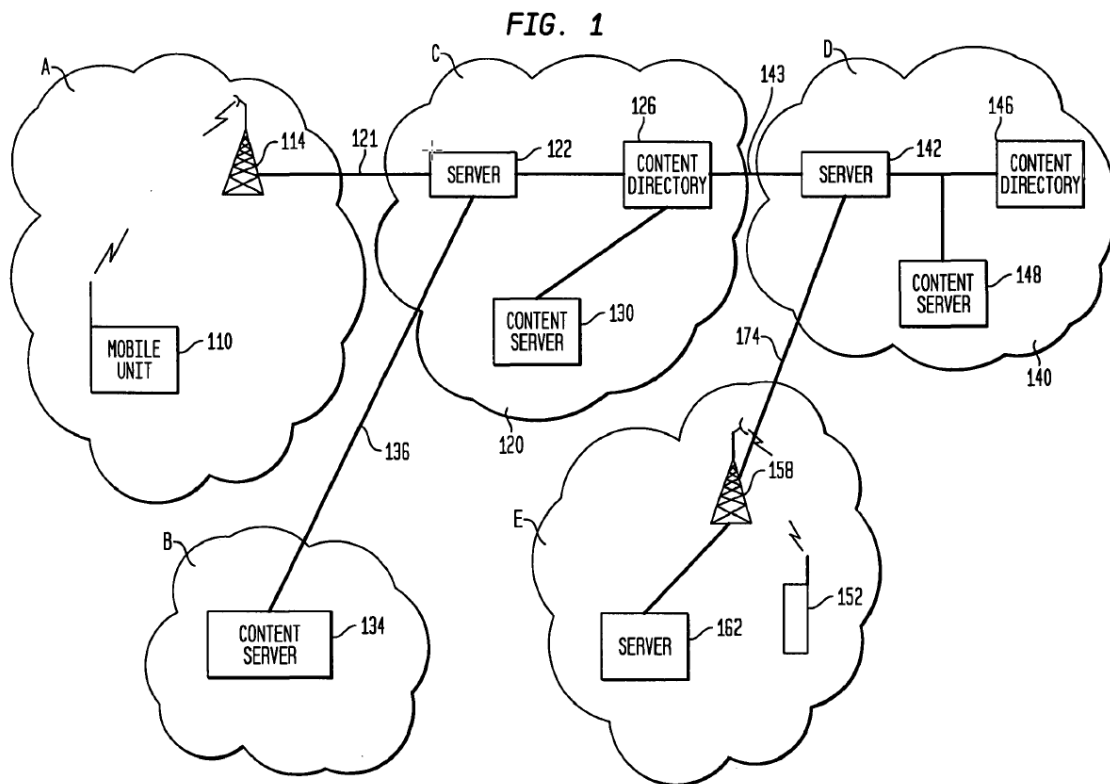
Fig. 5

Figure 5, above, is an operational diagram of the system, showing the communications between the client, second proxy, first proxy, and server. Ex. 1005 ¶¶ 20, 42. After the browser sends a data request to the second proxy, “[t]he second proxy decides whether to send the request directly to the destination server, or to a first proxy.” *Id.* ¶ 42. For communication of a request to first proxy 305, second proxy 303 “applies transformations to the request, transforming it to the optimized protocol,” which can include “[c]ombining a number of requests in HTTP to one request.” *Id.* “The second proxy now sends the transformed request to the first proxy.” *Id.* “The first proxy transforms the request back to HTTP and sends it to the destination server.” *Id.* “The server sends the reply to the first proxy.” *Id.*

“The first proxy transforms a reply to the optimized protocol and sends it back to the second proxy.” *Id.* “The second proxy transforms the reply to HTTP and sends it back to the browser.” *Id.*

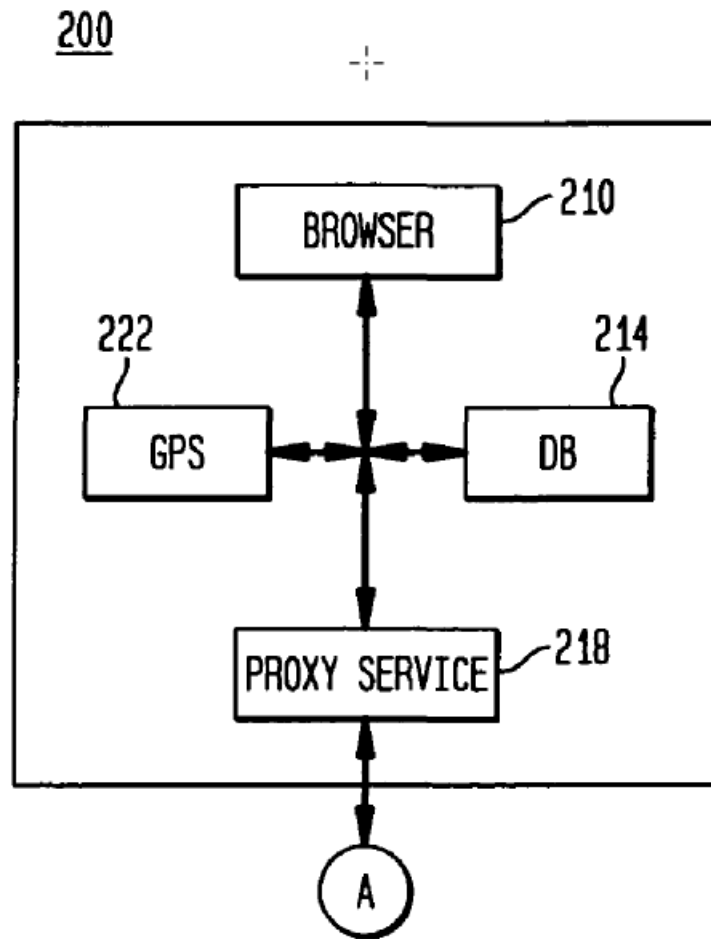
2. *Ling (Ex. 1006)*

Ling is directed to a method for “improving the way in which a mobile user accesses and is provided with content information residing on the Internet.” Ex. 1006 ¶ 7. Figure 1, reproduced below, is a depiction of Ling’s system. *Id.* ¶ 31.



As shown in Figure 1, above, Ling’s system includes mobile unit 110 in a geographic area A that communicates through radio frequency tower 114 to network 120. Ex. 1006 ¶ 39. Network 120 includes server 122, content directory server 126, and content server 130. *Id.* Figure 2, reproduced below, depicts a diagram of mobile unit 110/200. *Id.* ¶ 54.

FIG. 2



As shown in Figure 2, above, mobile unit 200 includes browser 210, GPS 222, proxy service 218, and database 214. Ex. 1006 ¶ 54. Browser 210 provides an interface to the user to request content located on the Internet. *Id.* “[P]roxy service 218 acts as a browser interface that intercepts requests from the web browser and transparently re-directs those requests to a gateway server.” *Id.* ¶ 55. Ling further states:

GPS block 222 obtains real-time geographic location or position information associated with the mobile device and provides that information to the proxy service 218. The proxy service 218 uses the geographic location or position information in accessing the

local database 214 to determine the approximate gateway server to which the information should be directed.

Ex. 1006 ¶ 55. Table 1, reproduced below, is used to identify gateway server 122 that is geographically closest to mobile unit 110/200 using information in database 214. *Id.* ¶ 61.

TABLE 1

Longitude1	Latitude1	Longitude2	Latitude2	IP
-74.47	40.47	-78.57	40.57	205.132.610
-78.57	40.57	-79.99	50.67	199.23.23.123

Table 1, above, represents a portion of database 215, where the longitude/latitude 1 columns represent the uppermost left point of a rectangular area, the values in the longitude/latitude 2 columns represent the lower-right most point, and the IP address column provides a network address of a gateway server residing in the corresponding rectangular area.

Ex. 1006 ¶ 61. A gateway server is selected, and proxy server 218 modifies the URL included in the request from the browser to create a location-specific URL. *Id.* ¶ 62.

3. Analysis

A patent 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) when in evidence, objective evidence of nonobviousness.⁶ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

The Petition asserts that the combination of Goldstein and Ling teach all the limitations of independent claim 1 and one of ordinary skill in the art would have been motivated to combine the prior art references. *See* Pet. 29–48.

Petitioner asserts that it would have been obvious to a person of ordinary skill in the art to:

(a) modify Goldstein’s client computer 301 to be a mobile device with GPS functionality, as is disclosed by Ling for routing content requests based at least partially on GPS data; (b) modify Goldstein to incorporate Ling’s overlay network for efficient delivery of information (e.g., location-based or location-aware information) to mobile devices based at least partially on the GPS data; and (c) modify Goldstein’s second proxy 303 to include the functionality of Ling’s proxy service 218 and database 214 to determine a server from which to provide such information based at least partially on the location of the mobile client computer 301.

Pet. 29–30 (citing Ex. 1003 ¶ 108).

Petitioner asserts that modification (a) would be sought by one of ordinary skill in the art because Goldstein is silent on what type of computer client 301 is used. Pet. 30 (citing Ex. 1005 ¶ 24). Petitioner contends that Ling discloses “the expanding use of mobile devices to access content via the internet, such as location-based or location-aware information,” and mobile phones became ubiquitous by the mid 2000’s, so a person of ordinary

⁶ No objective evidence of nonobviousness has been presented by the Patent Owner in the Preliminary Response. *See generally* Prelim. Resp.

skill in the art “would have understood that mobile clients and wireless networks had become important components of the Internet.” *Id.* at 30–31 (citing Ex. 1006 ¶¶ 2–3; Ex. 1003 ¶¶ 109–111; Ex. 1014, 324, 392; Ex. 1022 ¶ 3). Petitioner contends that most mobile phones included GPS capabilities, and a person of ordinary skill would have been motivated to implement Goldstein with mobile client devices including GPS capabilities. *Id.* at 31–32 (citing Ex. 1003 ¶ 112; Ex. 1021 ¶ 6). Dr. Olivier provides supporting testimony that the availability of low cost GPS data would have motivated a person of ordinary skill in the art to implement a mobile device with GPS. Ex. 1003 ¶ 112.

As to modification (b), Petitioner argues that Ling discloses leveraging mobile device location data to route content requests to different servers, and location-based routing functionality would be done by implementing Ling’s overlay network with Goldstein’s system. Pet. 32 (citing Ex. 1003 ¶ 113; Ex. 1006 ¶¶ 24, 48, 52, 55). Petitioner asserts that a person of ordinary skill in the art “would have been motivated to further Goldstein’s goal of improved speed and efficiency of content delivery to mobile devices by routing content requests to the server that can most-efficiently provide the requested content.” *Id.* (citing Ex. 1003 ¶ 114). Petitioner contends that Ling explains “[i]n contrast to a fixed-location request for content information, when a mobile user requests information . . . the location of the user and the location of the content information may play a role in determining how quickly the information gets routed to the user, the type of information the user may need and the costs associated with providing the requested content information to the user.” *Id.* (citing Ex. 1006 ¶ 6). Petitioner refers to Ling’s disclosure that content can

be provided more quickly and cost effectively by retrieving from a server located closer to the mobile unit. *Id.* at 32–33 (citing Ex. 1006 ¶ 6). Petitioner asserts that a person of ordinary skill in the art would have been familiar with an overlay network for moving content closer to the client. *Id.* at 33 (citing Ex. 1014, 325, 392).

Additionally, for modification (b), Petitioner asserts that a person of ordinary skill in the art would have been motivated to enable Goldstein’s system to provide location-based and location-aware information to mobile devices. Pet. 33 (citing Ex. 1003 ¶ 116; Ex. 1006 ¶ 3). Petitioner refers to Ling’s disclosure that its overlay network allows for location-aware notifications, advertising insertions, emergency event notification, and real-time traffic reporting. *Id.* at 33–34 (citing Ex. 1006 ¶¶ 6, 73).

For modification (c), Petitioner argues that Ling’s proxy service 218 and database 214 “function[] as a location resolver, i.e., translating the present geographic location to an IP address of a nearby gateway server.” Pet. 34 (citing Ex. 1006 ¶ 55). Petitioner asserts that a person of ordinary skill in the art would have been motivated to implement this functionality to enable the benefits of Ling’s location-based content routing. *Id.* (citing Ex. 1003 ¶¶ 117–118). Petitioner further contends that, rather than implementing proxy service 218 in the mobile client device 301 as Ling discloses, a person of ordinary skill in the art would have been motivated to incorporate the functionality of proxy server 218 into Goldstein’s second proxy 303. *Id.* Petitioner asserts that this modification was one of two known approaches that Goldstein discloses.⁷ *Id.* at 34–35 (citing Ex. 1003

⁷ Petitioner asserts “Goldstein discloses that the second proxy can be a device separate from the client (Figure 3) or integrated into the client

¶ 118). Petitioner also argues that this modification “would have been dramatically more efficient and effective because Goldstein’s system already includes second proxy 303, whereas not all client mobile devices included a proxy service.” *Id.* (citing Ex. 1003 ¶ 118). Petitioner contends that with this modification, Goldstein’s second proxy 303 could process requests from multiple mobile devices so that updates could be made more centrally at the second proxy rather than on each mobile device. *Id.* at 35 (citing Ex. 1006 ¶ 55; Ex. 1003 ¶ 118). The resulting configuration of the Goldstein-Ling combination as depicted in Petitioner’s modified Figure 3 of Goldstein is reproduced below. *Id.* at 37.

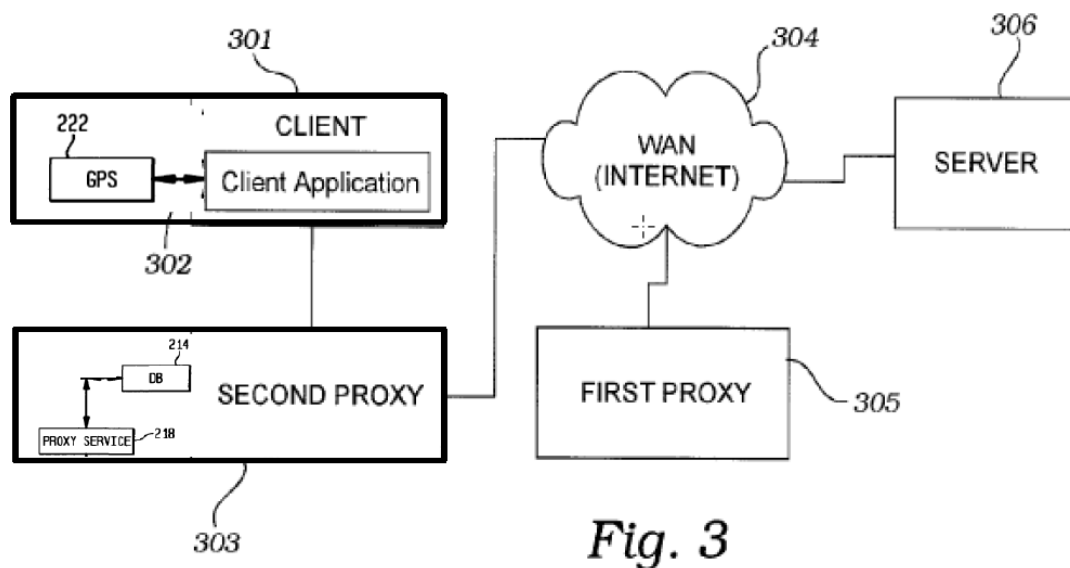


Fig. 3

Modified Figure 3 of Goldstein represents the modifications of Goldstein in view of Ling consistent with Petitioner’s assertions. Pet. 37. Petitioner contends that the modifications to Goldstein utilize known components in known ways. *Id.* at 35 (citing Ex. 1003 ¶ 119). Petitioner argues that both

(Figure 4), but that the system operates the same in either embodiment.” Pet. 36 (citing Ex. 1005 ¶¶ 32, 33, 42; Ex. 1003 ¶ 119).

Ling and Goldstein improve Internet access in a similar way, that is, via proxy devices. *Id.* Petitioner argues that both Goldstein and Ling disclose proxy device routing based on the location of the destination server. *Id.* (citing Ex. 1005 ¶ 36; Ex. 1006 ¶ 61). Petitioner also contends that both Ling and Goldstein use the same communication protocols, such as HTTP. *Id.* at 36–37 (citing Ex. 1005 ¶¶ 25, 27, 42; Ex. 1006 ¶¶ 63–65, 72).

Patent Owner argues that Petitioner relies on hindsight bias to modify and map the references to the challenged claims. Prelim. Resp. 5, 33. In particular, Patent Owner asserts that Petitioner employs hindsight and fails to provide motivation why a person of ordinary skill in the art would have been motivated to split the functionality of Ling’s mobile unit. *Id.* at 33 (citing Ex. 2001 ¶ 91). We agree with Patent Owner that the Petition fails to provide adequate support for the rationale to combine Goldstein and Ling.

The Supreme Court directs the application of “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. However, “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *Id.* at 418. “This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *Id.* at 418–419. Accordingly, in an obviousness analysis, one must “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 418. Moreover, “[i]t is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious.”

In re Fritch, 972 F.2d 1260, 1266 (Fed. Cir. 1992) (citing *In re Gorman*, 933 F.2d 982, 987 (Fed. Cir. 1991)). Establishing that an invention would have been obvious requires “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements *in the way* the claimed new invention does.” *KSR*, 550 U.S. at 418 (emphasis added).

Here, Petitioner’s rationale to combine Goldstein and Ling is weak in several regards. In modification (a), Petitioner proposes modifying Goldstein’s client computer to be a mobile device with GPS functionality, and for modification (b), Petitioner proposes modifying Goldstein (now modified to use a mobile device with GPS) to incorporate Ling’s overlay network for delivery of information (e.g., location-based or location-aware information) to mobile devices. Pet. 29–30. Dr. Olivier testifies that in the mid 2000s, there was “expanding use of mobile devices to access content via the internet, such as location-based or location-aware information.” Ex. 1003 ¶ 110. Dr. Olivier refers to a textbook⁸, which states that “the mobile network has become a key component of today’s Internet vision.” *Id.* ¶ 111 (citing Ex. 1014, 324). Dr. Olivier testifies that “by 2009, most mobile clients such as cellular phones included such GPS capabilities,” and “the availability of low cost GPS data” would have motivated a person of ordinary skill in the art “to implement Goldstein with mobile client devices including GPS capabilities.” *Id.* ¶ 112 (citing Ex. 1021 ¶ 6, Fig. 1).

Although Petitioner contends that Goldstein is silent on what type of computer its client 301 is, we do not agree. Goldstein discloses that in its preferred embodiment the client computer is a personal computer (PC),

⁸ Rajkumar Buyya, Content Delivery Networks, Lecture Notes In Electrical Engineering, 2008 (Ex. 1014).

running a windows operating system and with a browser such as Internet Explorer 5.5. Ex. 1005 ¶ 33. There is no disclosure or suggestion in Goldstein that the client computer is a mobile device. Dr. Olivier testifies that at the time Goldstein's filing, "most Internet content was provided to desktop and laptop computers over a wired connection, such as a modem," and Goldstein itself discloses the use of a modem connection. Ex. 1003 ¶ 109; Ex. 1005 ¶ 33. Ling additionally discloses that "[t]ypically, the Internet is accessed from a web client application running on a personal computer, laptop, personal digital assistant or home appliance at a fixed location," "where devices typically communicate via a wired connection." Ex. 1006 ¶¶ 2–3.

Although mobile devices with GPS may have been in use for Internet browsing, Patent Owner fails to explain why a person of skill would have sought to modify *Goldstein's* system. Petitioner proposes that instead of using Goldstein's personal computer in fixed locations for user Internet searching, a mobile device would be substituted and instead used. Petitioner advocates this change to Goldstein because Internet searching by mobile phone with GPS had become commonly done and low cost GPS data was available. But Petitioner does not contend that Internet searching with fixed location personal computers was not also a common method of Internet searching. This begs the question of why one of ordinary skill in the art would have sought to specifically modify Goldstein to use mobile devices instead of its fixed personal computers. As we explain further below, this proposed change does not represent a minor modification to Goldstein's system; instead, the use of mobile devices would precipitate a wholesale change to Goldstein's operation under Petitioner's asserted modifications.

And Petitioner provides no reason for the change-out of personal computers to mobile devices for searching, short of the assertion that mobile devices were commonly being used for searching. Additionally, Petitioner fails to identify any advantage of the use of a device with GPS for a fixed location personal computer, such as that used in Goldstein, except for the general assertion that most mobile devices would have had GPS and that low cost GPS data was available.

Petitioner also asserts that “Ling accomplished its goals of improving Internet access for mobile users in a similar way to how Goldstein accomplished its goal of faster Internet access—via proxy devices,” and a person of skill would have been motivated to further Goldstein’s goal of improved speed and efficiency of content delivery. Pet. 35. But Goldstein already provided for more efficient operation in a specific way by using two proxies to allow it to implement a protocol optimized for the connection between them. Ex. 1005 ¶ 36. And Petitioner itself distinguishes how improved efficiencies may be achieved in a fixed location system like Goldstein, which may enhance network performance by using additional bandwidth, with a mobile device system like Ling, with Ling stating “[i]n contrast to a *fixed-location request* for content information . . . the location of the user and the location of the content information may play a role in determining how quickly the information gets routed to the user, the type of information the user may need and the costs associated with providing the requested content information to the user.” Pet. 32 (citing Ex. 1014, 324; quoting Ex. 1006 ¶ 6 (emphasis added)). Accordingly, it is the modification to use mobile devices instead of using fixed personal computers in Goldstein (modification a), which then leads to Petitioner’s modification to use an

alternative delivery method to achieve more efficient operation, that is, the use of Ling's overlay network for location-based content delivery (modification b). *Id.* at 32–33 (Petitioner asserting that one of ordinary skill “would have been motivated to further Goldstein’s goal of improved speed and efficiency of content delivery *to mobile devices* by routing content requests to the server that can most-efficiently provide the requested content” by the use of Ling’s overlay network). Similarly, Petitioner’s assertion that a person of ordinary skill in the art “would have enabled Goldstein’s system to provide location-based and location-aware information to such mobile devices,” is also premised on substitution of mobile devices in place of Goldstein’s fixed personal computers. *Id.* at 33.

In Ling’s unmodified Figure 2, mobile unit includes the browser, GPS, proxy service, and database. Ex. 1006 ¶ 54. In modification (c), Petitioner proposes combining Ling into Goldstein’s system by a specific implementation: Goldstein’s second proxy 303 would include the functionality of Ling’s proxy service 218 and database 214, and Ling’s GPS would be a part of Goldstein’s client device. Pet. 34, 37. Dr. Olivier testifies that this implementation would “enable the benefits of Ling’s location-based content routing.” Ex. 1003 ¶ 118. Dr. Olivier testifies that a person of ordinary skill in the art would have started with Goldstein’s Figure 3, and then would implement the logic of Ling’s proxy service 218 in Goldstein’s second proxy 303. *Id.* Petitioner asserts that a person of ordinary skill in the art would have been motivated to split Ling’s mobile device in this specific manner because: 1) Goldstein discloses two known approaches and Goldstein already includes a second proxy; and 2) Goldstein’s second proxy could advantageously process requests from

multiple mobile devices, and updates could be made more centrally at the mobile device. Pet. 34–35 (citing Ex. 1003 ¶ 118).

With proposed modification (c), Petitioner further builds on the series of predecessor modifications: *modifying Goldstein* from its use of a fixed location personal computer to the use of a mobile device, and further *modifying Goldstein* to use Ling’s overlay network for location-based content delivery. With the next step of modification (c), Petitioner proposes *modifying Ling* to split its mobile device functionality. In view of the number and extent of modifications necessary to achieve the proposed combination of Goldstein and Ling, this suggests that the series of proposed modifications are the result of hindsight. *See Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) (“[W]e cannot allow hindsight bias to be the thread that stitches together prior art patches into something that is the claimed invention.”); *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) (criticizing use of the challenged patent as a “roadmap” for putting what the expert referred to as “pieces of a ‘jigsaw puzzle’” together).

In the context of the steps of proposed modifications to Goldstein and Ling, we agree with Patent Owner that Petitioner appears to be employing hindsight bias to split Ling’s mobile device functionality by using the patent claim limitations as a guide because the limitations require that first device (client 301) send the first geographic location to the second device (second proxy 303). Prelim. Resp. 31–33; Ex. 2001 ¶ 91. Additionally, we are not persuaded by the Petitioner’s motivation to split Ling’s mobile device functionality. Ex. 2002 ¶ 92. Although, as Dr. Olivier testifies, Goldstein in its original form discloses that different configurations may be employed,

Dr. Oliver does not address why a disclosure from an *unmodified* version of Goldstein should apply, in view of the series of proposed modifications to Goldstein (which include the use of mobile devices and Ling's location-based content delivery), in order to support a further modification of Ling. *See* Ex. 1003 ¶ 113. Petitioner's additional rationale to split Ling to allow Goldstein's second proxy to process requests from multiple mobile devices with central updates represents yet another potential modification to Goldstein's operation, which further indicates that impermissible hindsight has been employed.

As such, we find that that the Petition provides insufficient evidence of a rationale to modify Goldstein with Ling. Accordingly, we determine the evidence and argument presented do not show a reasonable likelihood that Petitioner would prevail in establishing that challenged independent claim 1 would have been obvious over Goldstein and Ling.

Remaining challenged claims 2–27, 29, and 30 depend, directly or indirectly, from claim 1. Petitioner provides no additional evidence in the assertions for the challenged dependent claims that would cure the deficiencies as to claim 1. *See* Pet. 48–84. Accordingly, we determine the evidence and arguments presented do not show a reasonable likelihood that Petitioner would prevail in establishing that challenged dependent claims 2–9, 14–22, 24–27, 29, and 30 would have been obvious over Goldstein and Ling and challenged dependent claims 10–13 and 23 would have been obvious over Goldstein, Ling, and RFC1122.

III. CONCLUSION

For the foregoing reasons, we determine that the information presented does not establish a reasonable likelihood that Petitioner would

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prevail in showing at least one of claims 1–27, 29, and 30 of the '317 patent is unpatentable under 35 U.S.C. § 103.

IV. ORDER

Accordingly, it is:

ORDERED that the Petition is *denied* as to all challenged claims and grounds and no trial is instituted.

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