UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTUIT INC.
Petitioner

v.

SAMESURF, INC.
Patent Owner

Case IPR2023-00339 (U.S. Patent No. 9,185,145)
Case IPR2023-00341 (U.S. Patent No. 9,483,448)
Case IPR2023-00342 (U.S. Patent No. 8,527,591)

DECLARATION OF DAVID S. HOWELL
IN SUPPORT OF
PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

I. ASSIGNMENT 1

II. BACKGROUND 1

III. COMPENSATION AND PRIOR TESTIMONY 4

IV. INFORMATION CONSIDERED 5

V. LEVEL OF ORDINARY SKILL IN THE ART 6

A. Definition of a POSITA 6

B. Dr. Lieberman does not qualify as a POSITA under Patent Owner's definition. 9

C. Dr. Lieberman does not qualify as a POSITA under Petitioner's own definition. 10

VI. THE '145, '448, AND '591 PATENTS 12

VII. THE REFERENCES CITED IN THE IPR PETITIONS 17

A. Lebrun 17

B. Wang 19

C. Prajapat 22

I, David S. Howell, hereby declare under penalty of perjury of law that the following is true and correct to the best of my knowledge, recollection, and belief.

I. ASSIGNMENT

1. I have been engaged as an expert by Samesurf, Inc. in connection with the above-captioned proceedings to provide my analyses and opinions on certain technical aspects of this dispute. In this report, I will refer to Samesurf, Inc. as "Samesurf" or "Patent Owner" and to Intuit Inc. as "Intuit" or "Petitioner."

2. The statements made herein are based on my own knowledge and opinion. I can and will testify to these matters if called at trial.

II. BACKGROUND

3. I am educated in and have professional experience in the fields of software engineering, mobile application design and development, software architecture and systems, user experience design, and user interface design and implementation. In formulating my opinions, I have relied upon my training, knowledge, and experience in the relevant art. A copy of my curriculum vitae, a true and correct copy of which is attached as Exhibit "A" hereto, provides a description of my professional experience, including my academic and employment history and patents.

4. I am currently working as an engineer and entrepreneur running a company that develops and sells software for mobile devices and desktop computers.

5. I received a Bachelor of Science degree in Computer Science and Engineering, with Honors, from Case Western Reserve University in 1986. I received a Bachelor of Arts degree in Music, Cum Laude, from Case Western Reserve University in 1987. I received dual Master of Business Administration degrees from Cornell University's Johnson School of Business and from Queens University's Smith School of Business in 2008. I received a Master of Science in Computer Science from Portland State University's Maseeh College of Engineering and Computer Science in 2020. I am currently enrolled at Portland State University in a Ph.D. program in Computer Science, working under Dr. Suresh Singh on research focusing on Deep Learning and Visual Computation.

6. I began writing desktop and mobile computer software in 1978. Since then, I have worked in a wide range of roles in the software development field: as a software engineering consultant developing software as work for hire for dozens of clients; as an engineer and engineering manager for Apple Inc.; as an entrepreneur and founder building products for sale to consumers while pitching my startup both to potential investors and to potential acquirers; and as a technology executive at a healthcare software startup and at a company making software for controlling digitally connected kitchens. In each of these roles I have been involved directly in the design and implementation of software products, and in some cases of hardware peripherals.

7. From 1988 to 1994, after graduating from Case Western Reserve University, I was a lead software engineer at a few startups developing a variety of software: MIDI music composition software at Passport Designs; Smalltalk development tools at Digitalk; early desktop video software at New Video Corporation; and graphic tools at HSC Software.

8. In 1994, I founded Pablo Media, a software development agency whose intellectual property was acquired by Apple Inc. in 2002. As CEO of Pablo Media, I negotiated and, with the help of a network of specialist subcontractors, fulfilled over thirty software development contracts for over twenty clients.

9. From 2002 to 2008, after Apple Inc.'s purchase of Pablo Media's assets, I worked at Apple Inc. in the Pro Apps division, in the capacities of engineer and engineering manager.

10. I left Apple in 2008 to incorporate Avatron Software, where as CEO I led a team of senior software engineers to build some of the seminal mobile apps in the then-nascent mobile software market. Among these apps were Air Sharing, designated the first "App of the Week" by Apple, and Air Display, which was consistently the #1 or #2 top-grossing iPad Utility app for about five years. At Avatron I both directed and contributed to software development of over 60 apps for iOS, Android, macOS, Windows, Samsung Bada, and the world-wide web.

11. Most of the apps we built at Avatron leveraged networking or web-

browsing technologies in one way or another. For example, Air Connect employed "UDP Tunneling" to establish a peer-to-peer connection from a mobile device to a remote computer, which could lie behind a stringent firewall or be assigned a dynamic IP address. Air Login embedded a web-browser view in an invisible window to superimpose web-based animations on another custom view and Air Display sends mobile-device touch events to a desktop computer, and synthesizes mouse, stylus, and keyboard events based on those touch events.

12. In 2020, I became Chief Technology Officer of GoDoc, a medical software company focused on telehealth. I worked with GoDoc for a year until I helped them migrate their telehealth platform development from an overseas contractor to an in-house team.

13. In short, I have been involved in developing software for over thirty years, have produced numerous software products that employ networking and web browsing, and am well prepared to express an opinion in this case.

III. COMPENSATION AND PRIOR TESTIMONY

14. I am being compensated at a rate of $350 per hour for my study in this matter. I am also being reimbursed for reasonable and customary expenses associated with my work and testimony in this investigation. My compensation is not contingent on the outcome of this matter nor on the specifics of my testimony.

15. As a software engineering expert, I have written 14 declarations, been

deposed four times, and testified in Federal Court twice. I have provided details in my attached CV.

IV. INFORMATION CONSIDERED

16. My opinions are based on my years of education, research, and experience, as well as my investigation and study of relevant materials. In forming my opinions, I have considered the materials I identify in this report and those listed below, including:

- U.S. Patent No. 9,185,145 ("the '145 Patent")
- U.S. Patent No. 9,483,448 ("the '448 Patent")
- U.S. Patent No. 8,527,591 ("the '591 Patent")
- Petition for *Inter Partes* Review of the '145 Patent ("the '145 IPR")
- Petition for *Inter Partes* Review of the '448 Patent ("the '448 IPR")
- Petition for *Inter Partes* Review of the '591 Patent ("the '591 IPR")
- Declaration of Henry A. Lieberman in support of the '145 IPR
- Declaration of Henry A. Lieberman in support of the '448 IPR
- Declaration of Henry A. Lieberman in support of the '591 IPR
- International Patent Pub. No. WO 00/48110 ("Lebrun")
- U.S. Patent Appl. Pub. No. 2005/0021626 ("Prajapat")
- U.S. Patent Appl. Pub. No. 2005/0033656 ("Wang")

17. I may rely upon these materials and/or additional materials to respond to arguments raised in this proceeding. I may also consider additional documents and information in forming any necessary opinions—including documents that may not yet have been provided to me, should they become available.

18. My analysis of the materials produced in this investigation is ongoing and I will continue to review any new material as it is provided. This report represents only those opinions I have formed to date. I reserve the right to revise, supplement, and/or amend my opinions stated herein based on new information and on my continuing analysis of the materials already provided.

V. LEVEL OF ORDINARY SKILL IN THE ART

A. Definition of a POSITA

19. In my opinion, and based on my review of the patent-in-suit and related documents, and further based on my experience, a person of ordinary skill in the art ("POSITA") as of May 20, 2010 would have had at least a bachelor's degree in computer science, computer engineering, electrical engineering, or a similar field, and at least two years of professional experience or significant work experience in internet web browsing software development, web connectivity software development, or networking software development. The '145, '448, and '591 Patents (collectively referenced as the "Samesurf Patents") and the prior art evidence this level of ordinary skill. Under this definition, I would have at least been a POSITA

at the time of the filing of the first application to which the Samesurf Patents claim priority.

20. This definition of a POSITA is similar to Petitioner's definition of a POSITA in that both definitions require at least a bachelor's degree in computer science, computer engineering, electrical engineering, or a similar field, though my definition requires at least two years of professional experience in in internet web browsing software development, web connectivity software development, or networking software development. Petition, 11. The definitions differ in that Petitioner suggests that additional education could have substituted for professional experience or significant work experience. Petition, 11. Having both earned five academic degrees and worked in the software industry for over 35 years, I can state with confidence that the gulf separating academic and professional experience is vast. Due to the ever-changing nature of the internet and internet-based technologies, modalities that are in vogue today may be completely outdated tomorrow. Developers working in industry *must* keep up with these trends to ensure that they are up to speed with new versions of enabling technologies (*e.g.* new browser requirements, new web browsing security protocols, etc.), so that the products they develop work as intended and conform to the industry standards. Academics, especially tenured academics, do not face the same pressures and are not expected to rigorously keep up with these changes.

21. As defined by Petitioner, a POSITA could be quite inexperienced, with only an undergraduate degree and "two years of work experience in software development and/or web-based software." The undergraduate degree held by Petitioner's POSITA could be an electrical engineering degree, which typically requires few, if any, software engineering courses beyond an introductory programming course. Furthermore, POSITA's "web-based software" work experience may have been spent designing WordPress web pages. Such experience, which may have imparted no knowledge of web standards or networking protocols or software engineering, would be inadequate preparation for a POSITA to sufficiently grasp the domain of the Samesurf Patents.

22. The subject matter of the Samesurf Patents, including the claims challenged by the Petition, relate to the implementation of a real-time, sharable web browsing experience, aka "synchronized web browsing." *See, e.g.*, '145 Patent, Abstract. Likewise, the primary prior art references and most of the secondary references cited in the Grounds of the Petition, including Lebrun, Wang, and Prajapat (i.e., all of the references relied upon by the Petition), relate to internet web browsing software and/or internet-based web browsing. *See, e.g.,* Ex. 1005, Abstract, Fig. 3; Ex. 1006, ¶ 39, Figs. 1–2; Ex. 1007, ¶ [0012], Fig. 1. Thus, in both the Samesurf Patents and these prior art references, any discussion of internet web browsing that is present is never divorced from internet web browsing software.

23. Further, the opinions provided by Petitioner's expert, Dr. Henry A. Lieberman, predominantly relate to internet web browsing software, as Dr. Lieberman discusses the Samesurf Patents and the Lebrun, Wang, and Prajapat references, which all relate to internet web browsing software. *See, e.g.*, Petition Ex. 1003 ("Lieberman Declaration"), ¶¶ 31–46, 131–153[1].

B. Dr. Lieberman does not qualify as a POSITA under Patent Owner's definition.

24. In my opinion, Dr. Lieberman does not have the requisite level of skill to testify from the perspective of a POSITA under Patent Owner's definition. While Dr. Lieberman has a degree in "*Informatique*" from the University of Paris VI (Sorbonne), his Curriculum Vitae ("CV") does not describe at least two years of professional experience or significant work experience in internet web browsing software development, web connectivity software development, or networking

[1] I understand that Dr. Lieberman submitted three declarations, one for each IPR Petition. For clarity, I cite to paragraphs from Dr. Lieberman's declaration from the '145 IPR, which is Ex. 1003 of the '145 IPR, or from Dr. Lieberman's CV, which is Ex. 1004 of the '145 IPR. The materials that I cite to from Dr. Lieberman's declaration and CV from the '145 IPR are not materially different from his submissions in the '448 IPR and '591 IPR.

software development as required under Patent Owner's definition. Petition Ex. 1004 ("Curriculum Vitae of Henry A. Lieberman"), 1.

25. Should the Board adopt my definition of a POSITA, I believe that Dr. Lieberman's opinions should be given little or no weight because Dr. Lieberman does not have the level of skill of a POSITA under this definition. This is especially the case where his opinions concern web-based software development.

C. Dr. Lieberman does not qualify as a POSITA under Petitioner's own definition.

26. Even under Petitioner's definition, I do not believe Dr. Lieberman has the level of skill of a POSITA. As discussed above, Petitioner's definition of POSITA requires "a bachelor's degree in computer science, computer engineering, or electrical engineering, or the equivalent, and at least two years of work experience in software development and/or web-based software," and Petitioner allows that "[a]dditional education could have substituted for professional experience, and significant work experience could have substituted for formal education." Petition, 11.

27. Dr. Lieberman's Declaration includes statements that he "[is] known in the field as an expert in Artificial Intelligence and Human-Computer Interaction," and that the level of ordinary skill requires "at least two years of work experience in software development and/or web-based software [development]." He states that

"[w]ith more education, such as additional graduate degrees or study, less professional experience is needed to attain the ordinary level of skill." Ex. 1003 (Lieberman Declaration), ¶¶ 7, 17–19. In my opinion, these statements do not establish that Dr. Lieberman has "at least two years of work experience in software development and/or web-based software [development]" as required by Petitioner's own definition. If Dr. Lieberman has any industry work experience at all outside of academia, it is not in evidence in his CV. Further, Dr. Lieberman's CV does not suggest that his education relates to the area of web-based software development.

28. With regard to Dr. Lieberman's declaration accompanying the Petition to the '145 Patent, Dr. Lieberman chooses an incorrect date of familiarity with the technology at issue in stating, "I am familiar with the technology at issue and the state of the art at the effective filing date of the challenged patent, July 26, 2013." Lieberman, ¶ 18. The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention, which in this instance is at least as early as May 20, 2010, the date on which the priority patent application on which the '145 Patent relies was filed. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 75 USPQ2d 1321, 1326 (Fed. Cir. 2005); Petition Ex. 1001 ("U.S. Patent No. 9,185,145"), 1. Thus, for this additional reason alone with regard to the '145 Patent, Dr. Lieberman also does not possess the requisite knowledge of a POSITA. *Id*.

29. Therefore, even if the Board adopts Petitioner's definition of a POSITA, I believe that Dr. Lieberman's opinions should still be given little or no weight because Dr. Lieberman does not have the level of skill of a POSITA under this definition as well.

VI. THE '145, '448, AND '591 PATENTS

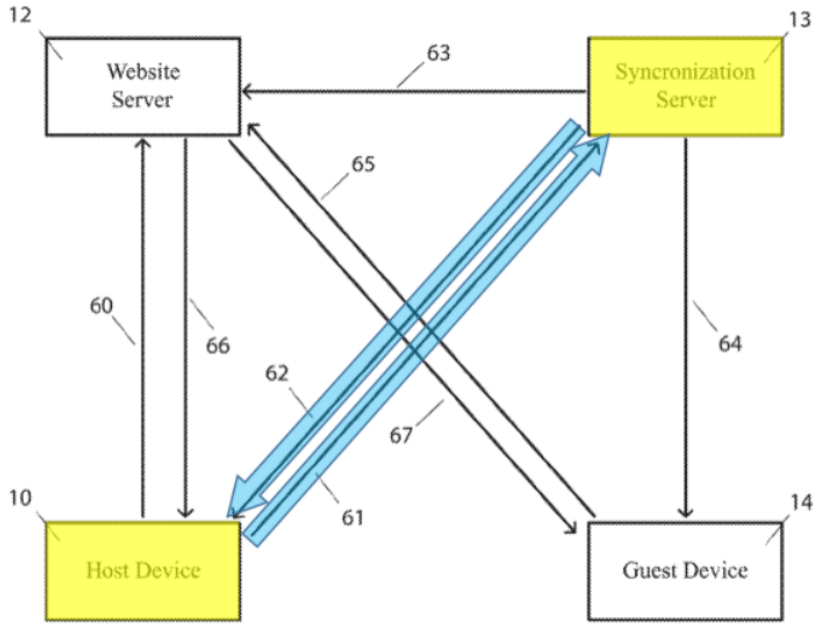
30. While the claims of the '145, '448, and '591 differ, I understand that the patent specifications and figures are substantially similar. For ease of reference, my citations that follow are to the specification of the '145 Patent, but they are applicable to all three Samesurf Patents.

31. The '145 Patent discloses a system architecture that utilizes a synchronization server to facilitate synchronized browsing sessions. An overview of this architecture is shown and described below.

32. A synchronized browsing session between host and guest devices according to the '145 Patent is managed by a synchronization server, which continuously detects and transfers web browsing interaction data. The interaction data is data related to an interaction that occurs on the host device and is meant for independent replication by the guest device(s). When a synchronized browsing session has been established between the host and guest devices, the host device sends data relating to its interaction with a website server to the synchronization server. The synchronization server then relays that web browsing interaction data to

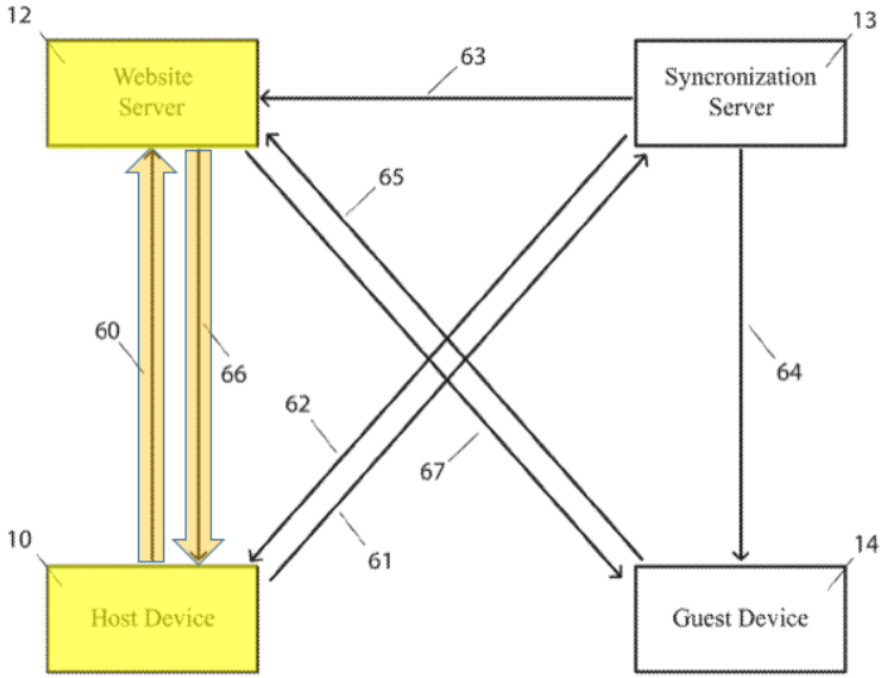
each guest device for each individual web browsing interaction. The guest device uses the web browsing interaction data to directly interact with the website server, independent of the synchronization server and in the same manner as the host device, resulting in a highly resource-efficient, secure, and high-performance real-time synchronized browsing session between the host and guest devices.

33. First, the host device 10 initializes a synchronized browsing session through communication with synchronization server 13, as shown with the blue arrows below. ’145 Patent, 15:59–61.

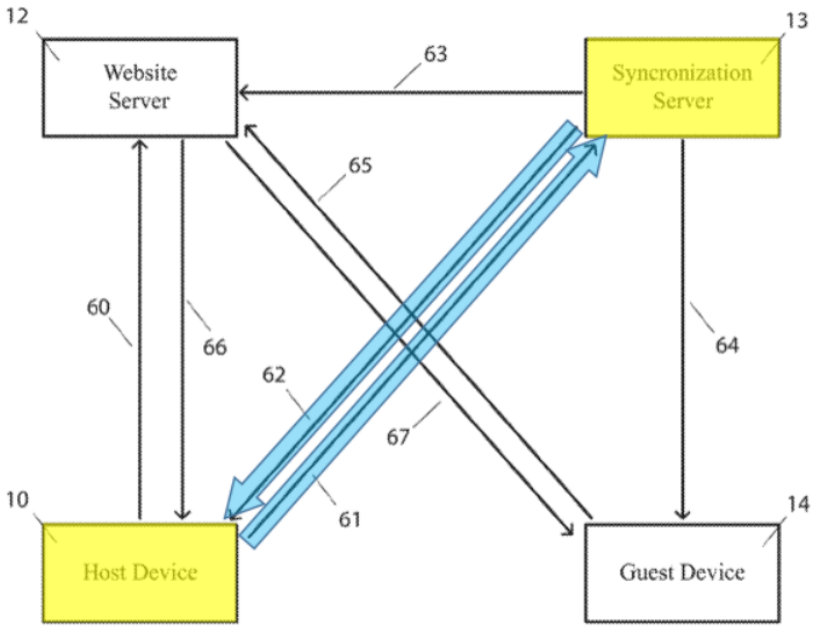


34. During a synchronized browsing session, the host device 10 may transmit a website request 60 to website server 12, as shown below with yellow arrows. *Id.* at 15:61–63. In response to website request 60, website server 12 sends

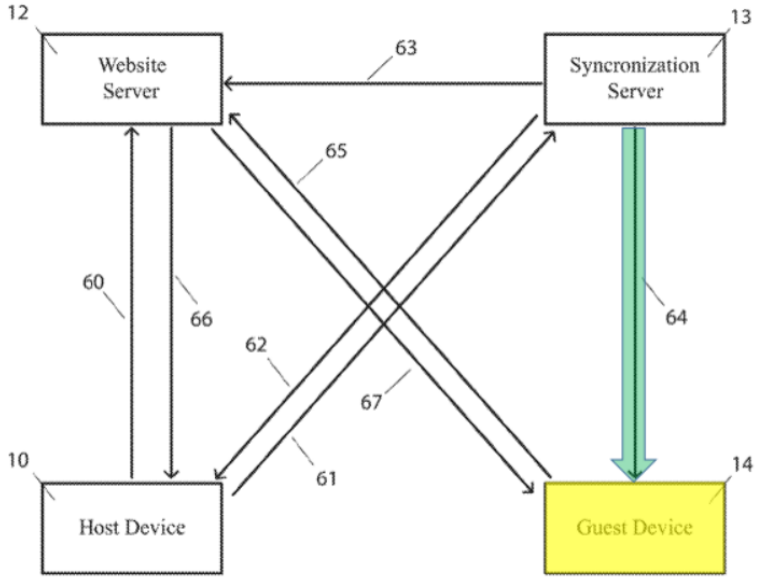
website content reply 66, which includes data necessary to view the website, to host device 10. *Id.* at 16:4–11.



35. After the host device 10 transmits website request 60 to website server 12, the host device 10 transmits communication message 61, shown in blue below, which includes webpage interaction information (*id.* at 18:34–38) to the synchronization server 13. *Id.* at 16:12–15. The webpage interaction information relates to an interaction performed by a host device that can be independently replicated by a guest device.

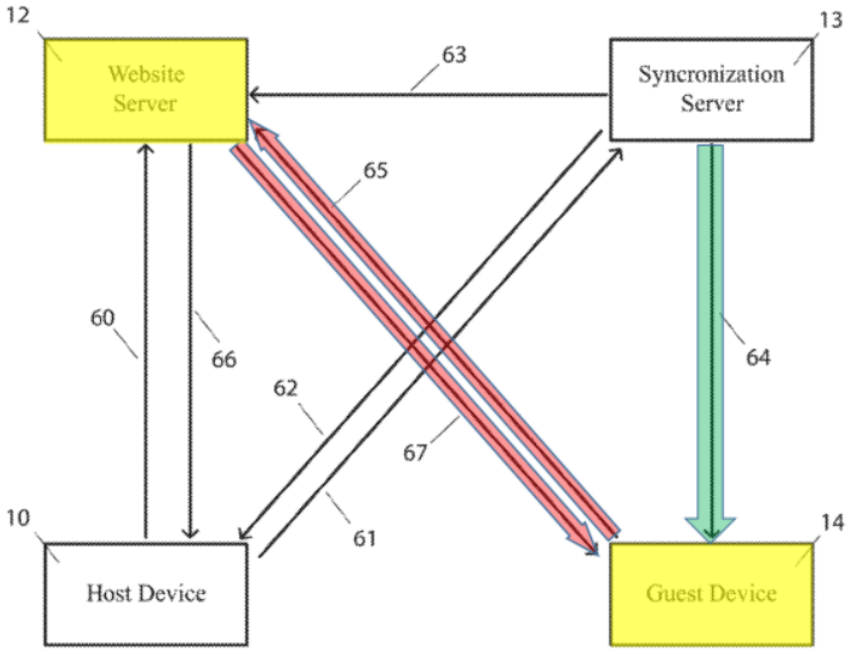


36. The synchronization server 13 forwards communication message 64, which includes web interaction information to guest device 14, as shown below in green. *Id.* at 16:62–64.



37. This web interaction information may be used by guest device 14 to

formulate website request 65, shown below in red, to be sent from guest device 14 to website server 12. *Id.* at 16:6–17:2. Website request 65 may be identical to website request 60 such that website content reply 67, the data content sent by website server 12 in response to website request 65, is similar or identical to website content reply 66. *Id.* at 17:38–41.



38. In this way, the Samesurf Patents describe how synchronized browsing occurs between host and guest devices. The synchronization server transmits web interaction data from the host to the guest devices so that the guest devices can access the website server in the same manner as the host. The synchronization server does not manage either the host or guest's ability to communicate with the website server. Critically, the synchronization server does not

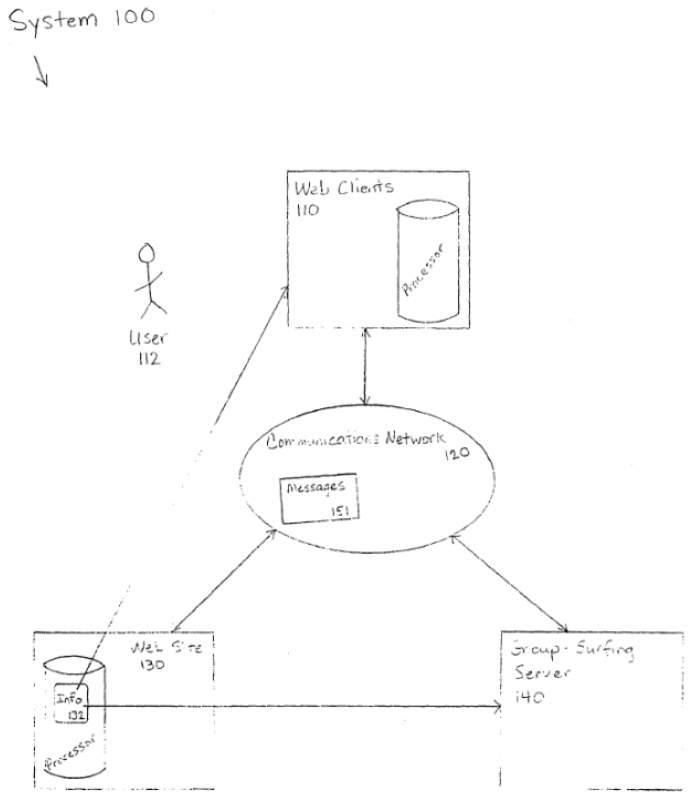
act as an intermediary between the guest device and the website server; the communication between the guest device and the website server is explicitly independent of the synchronization server.

VII. THE REFERENCES CITED IN THE IPR PETITIONS

A. Lebrun

39. Lebrun (Ex. 1005) describes "an improved technique for group access to web sites" where "[m]ultiple related users can simultaneously access a sequence of web sites, such that each of the related users has substantially the same content presented at the same times." Lebrun (Ex.1005), Abstract.

40. Lebrun teaches a system that enables multiple users to view rebuilt versions of webpages at their respective initial load states. Lebrun is focused on group access to a progression of webpages using a group surfing server. Figure 3 of Lebrun depicts "a block diagram of a system for group access to web sites." Lebrun (Ex. 1005), 10:20.



41. In Lebrun's architecture, one or more controlling web clients 110 select a progression of pages 153 for viewing during the group-surfing session. Lebrun (Ex. 1005), 34:15–17. If there are multiple controlling web clients 110, then the group-surfing server determines the progression of pages 153. *Id*. at 34:19–22. Once the progression of webpages is determined, the group-surfing server 140 itself receives each webpage 153 and then resends the HTML markup of the subject webpage to the web clients 110 participating in the session. *Id*. at 35:10–15. The group-surfing server—as opposed to the host and/or guest devices—makes the requests to the website for the webpages in place of the web clients. *Id*. at 36:11–17.

42. Unlike the Samesurf Patents, Lebrun's group surfing server does not

transmit web interaction data between the host and guest web clients, such that the guest web client is able to independently access the website server. Instead, Lebrun's group surfing server operates to manage communication between the web clients and the website server. In one example, the group surfing server contacts the website server and directs the website server to deliver the next webpage to the web clients. Lebrun (Ex. 1005), 32:28–30, 35:5–9. In another example, the group surfing server contacts the website server and requests the webpage itself, and the group surfing server itself forwards the webpage to the guest web clients. Lebrun (Ex. 1005), 35:10–15.

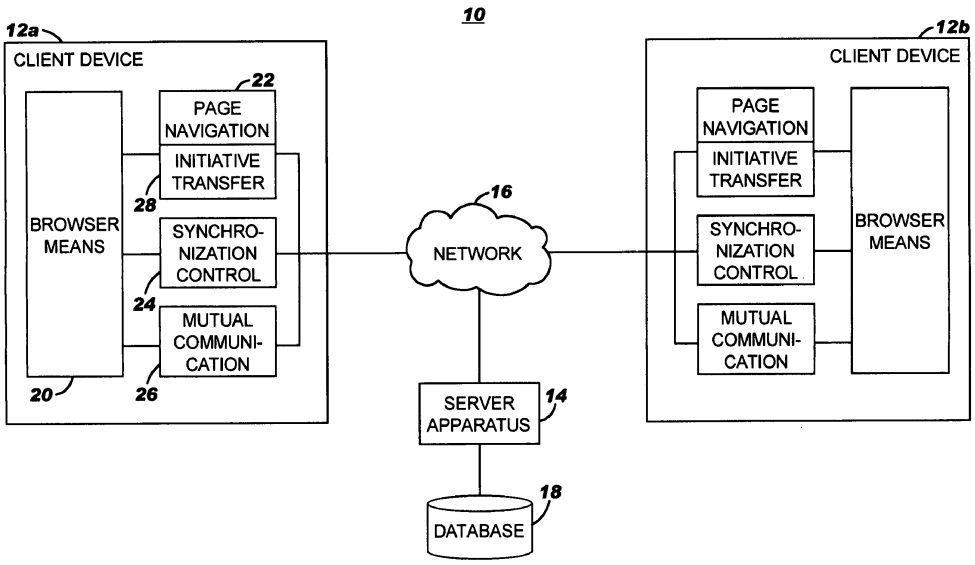
43. Neither of these examples is similar to the architecture described in the Samesurf Patents. In the first example, the group surfing server does not send any data, let alone web interaction data, to the guest web clients. In the second example, the group surfing server sends the entire webpage, not web interaction data, to the guest web clients. The guest web clients do not independently access the website server.

B. Wang

Wang (Ex.1006) describes a system directed towards collaborative virtual shopping which comprises a system with "a plurality of client devices 12a and 12b, a server apparatus 14, and a network 16 such as the Internet, which interconnects the

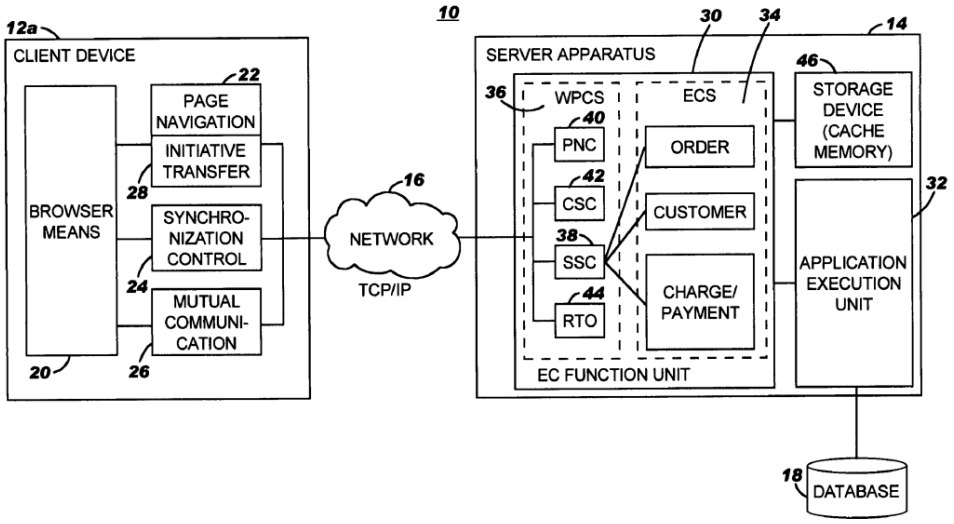
server apparatus 14 and the client devices 12a and 12b."[2] Ex. 1006, ¶ 39. Figures 1 and 2 below show the relationship between the system components.

FIG. 1



[2] For readability, extra spacing in reference numbering in Wang has been removed. For example, "client devices 12 a and 12 b" was changed to "client devices 12a and 12b."

FIG. 2



44. Wang describes a collaborative end goal that is strictly mediated through the server apparatus 14. As such, every point of access and decision that client devices 12a and 12b make must go through server apparatus 14, including access to webpages and invitations to other client devices for joining the collaborative online shopping session. For example, in order to access a webpage, the client devices 12a and 12b send HTTP requests to the server apparatus; the server apparatus 14 then "retrieves applicable web pages based on commands included in the HTTP requests"; and "sends, as HTTP responses, data for displaying the web pages as, for example, HTML documents, to the predetermined client devices, thus servicing the HTTP requests." Ex. 1006, ¶ 39. Thus, in Wang's system, the client devices never interact directly with the website server from which they are requesting a webpage. Instead, each client device "acquires a web page stored by the

server apparatus 14 in a database 18." *Id*.

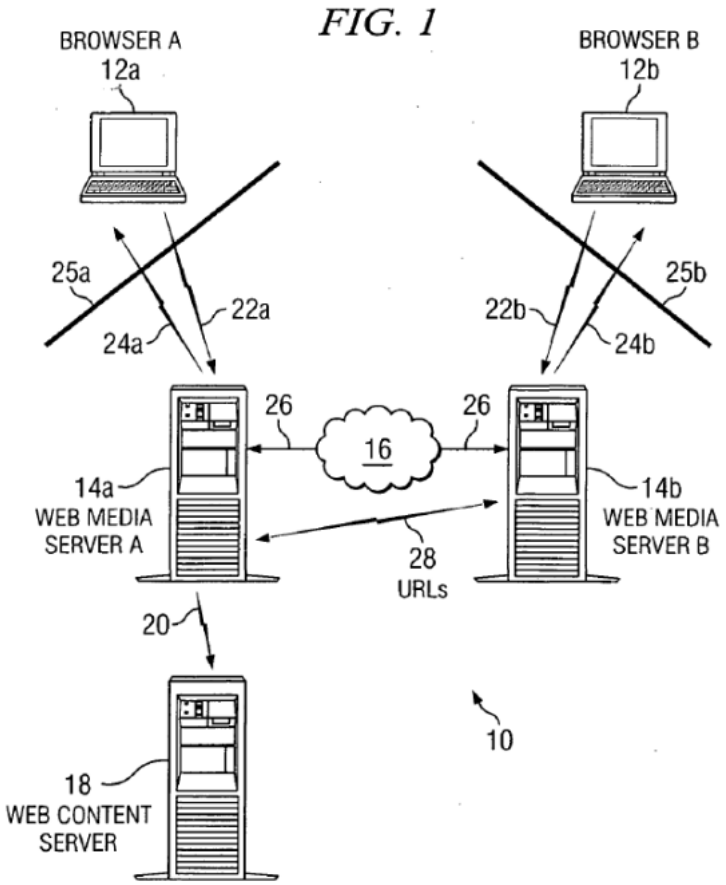
45. Moreover, while the synchronization server described in the '145 Patent mediates the delivery of "web browsing interaction data" to the guest device to enable the guest device to "operat[e] an application based on said web browsing interaction data…to access a website server independent of the synchronization server subsequent to the activation of the session invitation" (element [1d]), Wang's server apparatus 14 only "passes snapshot data of a web page then browsed by the client device 12a to the client device 12b" after it receives "a notice from the client device 12a to invite the client device 12b." Ex. 1006, ¶ 40.

46. Unlike the web interaction data from the Samesurf Patents, Wang's snapshot data only describes the webpage content and structure at the moment in time that the snapshot data is taken. Ex. 1006, ¶ 61 ("Note that the snapshot data may be an HTML file, an XML file, or an SGML file"). The snapshot does not provide information about interactions occurring between the client device 12a and the webpage.

C. Prajapat

47. Prajapat (Ex. 1007) teaches a system that enables multiple users to view the same webpages based on a recompiled webpage that is sent from a middleman server. Petitioner relies on Figure 1, which illustrates that Prajapat's

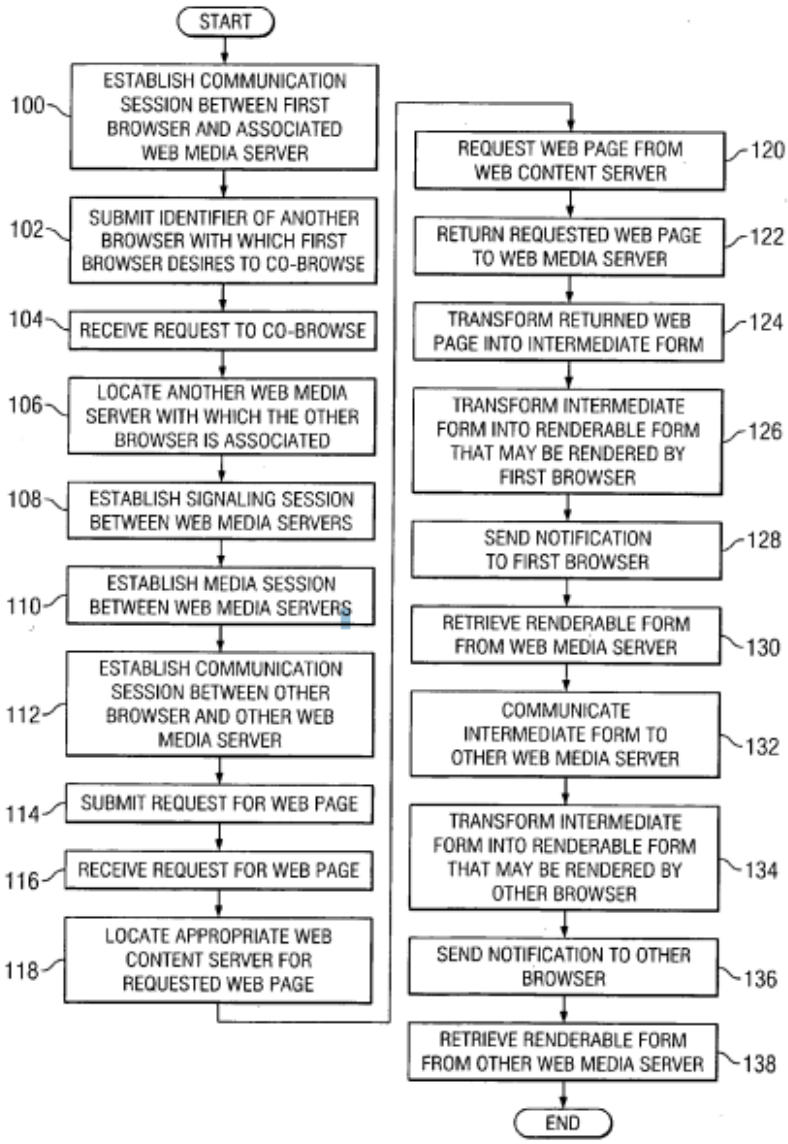
system is fundamentally different from that claimed in the ’145 Patent.



48. Figure 1 depicts a “communication system 10” that “includes browsers 12, web media servers 14*a* and 14*b* coupled via network 16, and web content server 18 coupled to web media server 14*a* via link 20.” Ex. 1007, ¶ [0012]. As depicted in Figure 1, there is no direct communication between the host and guest browsers 12a and 12b and the web content server 18. Instead, the web media server 14 mediates all interaction between the two. Unlike the ’145 Patent’s claims where the guest device uses web browsing interaction data to operate an application (such as a browser) to access the website server independent of the synchronization server

('145 Patent, 23:7–15), Prajapat describes a system where browser 12a cannot access a webpage from the web content server 18 in a manner that is independent of the web media server 14a. Figure 2 further describes the steps illustrated by Figure 1 in more detail.

FIG. 2



49. Beginning with step 114, "browser 12a may submit a request…for a

web page…to web media server 14a." Ex. 1007, ¶ 36. Next, the web media server 14a receives the request (step 116) and locates the web content server 18 that includes the requested webpage (step 118). *Id.* at ¶¶ 36–37. The web media server 14a then requests, from the web content server 18, the webpage requested by the browser 12a (step 120) and the web content server 18 returns the requested webpage to the web media server 14a (step 122). *Id.* at ¶ 37. At step 124, "web media server 14a may transform the returned webpage into some intermediate form." *Id.* The web media server 14a then transforms the intermediate form of the webpage into a form that is renderable by browser 12a (step 126) and sends a notification to browser 12a that the webpage has been retrieved (step 128). *Id.* at ¶ 38. "At step 130, browser 12a retrieves the renderable form of the webpage from web media server 14a." *Id.*

50. The web media server 14a also communicates the intermediate form of the webpage to web media server 14b (step 132), which transforms the intermediate form into a format that is renderable by web browser 12 b (step 134). *Id.* at ¶ 39. The web media server 14b then notifies browser 12b that the requested page has been retrieved (step 136) and browser 12b retrieves the renderable form of the webpage from web media server 14b (step 138). *Id.*

51. Like both Lebrun and Wang, Prajapat's system is fundamentally different than the one disclosed in the Samesurf Patents. In the Samesurf Patents, the

host and guest devices access the website server independently of the synchronization server, so the synchronization server does not act as a middleman between the devices and the website. In contrast, Figure 1 of Prajapat demonstrates that Prajapat's web media servers receive requests from the host and guest browsers, and then retrieve a webpage from the web content server. Prajapat's web media servers then format that webpage into an intermediate form that is then sent back to the host and guest browsers.

I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: April 19, 2023

Respectfully submitted,

David S. Howell