

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DROPBOX, INC.,

Petitioner

v.

MOTION OFFENSE, LLC,

Patent Owner

IPR2024-00286
U.S. Patent No. 11,611,520

DECLARATION OF DR. MICHAEL SMITH

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Case IPR2024-00286
Patent No. 11,611,520
Declaration of Dr. Michael Smith

TABLE OF EXHIBITS

Exhibit	Description
2001	

I. INTRODUCTION

1. I am currently an independent consultant.

2. This declaration is based on my own personal knowledge. I make this declaration in support of Patent Owner Motion Offense, LLC's in ("Patent Owner" or "Motion Offense") Patent Owner Response to the Petition in IPR2024-00286 regarding U.S. Patent No. 11,611,520 ("the '520 patent") before the Patent Trial and Appeal Board.

II. QUALIFICATIONS AND EXPERIENCE

3. I hold two degrees from Cambridge University: (1) a Bachelor of Arts degree in Electrical Sciences earned in 1978; and (2) a Master of Arts degree in Electrical Sciences earned in 1978. I also hold two degrees from Stanford University: (1) a Master of Sciences in Electrical Engineering earned in 1981 and (2) a Doctor of Philosophy (Ph.D.) in Electrical Engineering earned in 1985.

4. From 2000–2004, I acted as CTO of a fabless networking semiconductor start-up, iReady. I was responsible for: the basic technology ideas; recruiting the engineering team; all aspects of design: architecture and IP, design methodology, emulation, verification; system debug, testing, bringup; and standards work. I developed the iReady patent portfolio. I helped sell iReady and its IP to Nvidia in 2004.

5. From 2004–2007, I was employed with Nvidia, acting as a Chief Architect. I was involved in all aspects of systems design: chipset, graphics, memory, peripherals, networking, software (drivers, firmware) from product conception through to high-volume production. I worked with marketing to specify products, with software and hardware engineers on design, and with sales in the field.

6. From 2007–2009, I was Chief Architect and CTO of MetaRAM, a KPCB fabless semiconductor start-up. I hired the initial MetaRAM team and then managed all of engineering except silicon design. I wrote and filed 30 patents in 6 months and helped sell the MetaRAM IP to Google in 2010.

7. From 2009–2010, I consulted with Google on IP strategy, IP portfolio development, patent prosecution, and high-value litigation.

8. At present, I am involved with two entities. Since 2011, I have acted as Founder and owner of P4TENTS1. This entity consults on all aspects of IP prosecution and litigation, analyzes and values IP and patent portfolios. P4TENTS1 also develops IP including complete patent portfolios. Therefore, I have a deep understanding of patents from a technical perspective.

9. Since 2014, and in addition to my work with P4TENTS1, I have worked with Weaved, renamed remote.it as part-time CTO. This team is made up

of ex-iReady team members. Through my work, I help this start-up provide networking for the Internet of Things using custom network protocols.

10. In addition, prior to 2000, I served in the following capacities:

- a. ***IBM (United Kingdom) Ltd., Hursley, England and IBM T.J. Watson Research Center, New York:*** Worked on DRAM and analog CMOS ASICs.
- b. ***University of Hawaii:*** Professor. I created and developed the first undergraduate ASIC program in the US. I also received a National Science Foundation Presidential Young Investigator award from President Ronald Reagan. My principle area of research was hardware for networking and internet protocols. I also advised 45 graduate students. As part of my research I worked with the following companies, either part-time, while on sabbatical, or as unpaid collaboration:
 - c. ***Eastman Kodak, New York:*** I worked to create some of the first CMOS digital camera IC designs.
 - d. ***University of California, Berkeley:*** I worked to create the first undergraduate course on IC design.

- e. *Xilinx, San Jose*: I helped develop the Xilinx University Program and, with NSF, introduced the FPGA into IC design courses worldwide; I helped develop the first FPGA development platform with Stanford and Actel.
- f. *VLSI Technology and Compass Design Automation, San Jose*: As Chief Scientist; I designed one of the first ASICs using logic synthesis, a Viterbi decoder; architect for the first ASIC cell library for synthesis.
- g. *Apple Computer*: I worked on education and with research projects in the Advanced Technology Group on ASIC design; created some of the first university telelectures ever given in collaboration with Stanford and Apple. Developed a website with one of the first online textbooks, "ASICs on the Web."

III. MATERIALS CONSIDERED

11. I have considered the materials listed in this declaration as well as the '520 patent and its file history. I have also reviewed the Petition in this proceeding as well as the references cited by Petitioner and Petitioner's expert declaration. I have also reviewed the Board's institution decision.

12. I am being compensated at my regular and established rate of \$500 per hour. My compensation is not dependent on the outcome of this proceeding.

IV. LEGAL STANDARDS

13. I am not an attorney. I have been informed regarding certain legal principles. I am not opining on the law, however. I set forth my understanding of the legal principles as they have been explained to me below.

14. I have been informed that claim construction and patentability is generally analyzed from the perspective of a person or ordinary skill in the art at the time of the invention (“POSITA”).

15. I have been asked to assume for purposes of my analyses that a POSITA is defined as the Board has defined it in the Institution Decision. I understand that Petitioner proposed the a formulation for a POSITA in its Petition. (Pet. at 3–4.) The Board adopted this formulation in its Institution Decision (Paper 12 at 11–12.) For purposes of my analyses and opinions, I have applied this formulation and have been asked to do so assuming the time of invention was in the September 2012 timeframe, up to and including September 25, 2012.

16. Based on my education and professional experience in the field of the claimed inventions, I am familiar with the level and abilities of a POSITA as defined by the Board. I had at least the qualification of a POSITA under this

definition in September 2012. I meet these qualifications today, as well. My opinions and analysis herein are from the perspective of the POSITA as defined by the Board.

17. I have been informed that claim terms are to be given their plain and ordinary meaning as a POSITA would have understood them at the time of the invention when read in light of the claims and in view of the specification and prosecution history.

18. I have been informed that a petitioner must clearly set forth the basis for its challenges in the petition. A petitioner may not rely on the Board to substitute its own reasoning to remedy deficiencies in a petition.

19. I have also been informed that to make a prima facie showing of obviousness, a petition must, among other requirements, demonstrate that the cited references, either alone or together, disclose each element of a challenged claim.

20. I have been informed that Petitioner also has the burden to show there would have been some motivation to combine the asserted references, and that a POSITA would have had a reasonable expectation of success in making such a combination. In other words, obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. Further, even if individual modifications or choices

were obvious, a petition must explain why making all of the changes at once would have been obvious. I understand that such secondary considerations include: a long-felt need, commercial success, unexpected results, praise of the invention, licensing, copying, failure of others, and skepticism by experts.

21. It is also my understanding that hindsight analysis is also inappropriate; obviousness must be measured at the time the invention was made. Consequently, a petitioner may not use the patent as a roadmap. In other words, a petition must demonstrate a rationale to combine prior art references without relying on the patent disclosure itself.

22. I have been informed that a combination of elements in a patent claim may be obvious when all of those elements were known in the prior art and there was a reason for a POSITA to combine or modify the prior art to obtain the elements as claimed, with no change in their respective functions. Furthermore, I understand that a patent claim would not be obvious if a proposed modification would render the prior art unsuitable for its intended purpose or if the proposed modification would change the principle of operation of the prior art. I have also been told that a reference may “teach away” from a proposed combination where it expressly rules out or discourages such a combination.

V. BACKGROUND

A. The '520 Patent

23. The '520 patent generally relates to methods and systems for sharing folders via a network without attaching the files and folders to a message. It is a continuation of U.S. Patent Application No. 16/803,980 (now U.S. Pat. No. 11,044,215), which is a continuation of U.S. Patent Application No. 15/984,406, filed May 20, 2018, which is a continuation of U.S. Patent Application No. 15/724,223, filed Oct. 3, 2017, which is a continuation-in-part ("CIP") of U.S. Patent Application No. 14/274,623 filed May 9, 2014, which in turn claims priority to U.S. Patent Application Nos. 13/624,906 and 13/626,635 (the "'906 application" and "'635 application" respectively, EX2003 and EX2004). Both the '906 and '635 applications are incorporated by reference into the '520 patent. (EX1001 at 1:52-62; *see also* EX2004 ¶¶ 3, 34.)

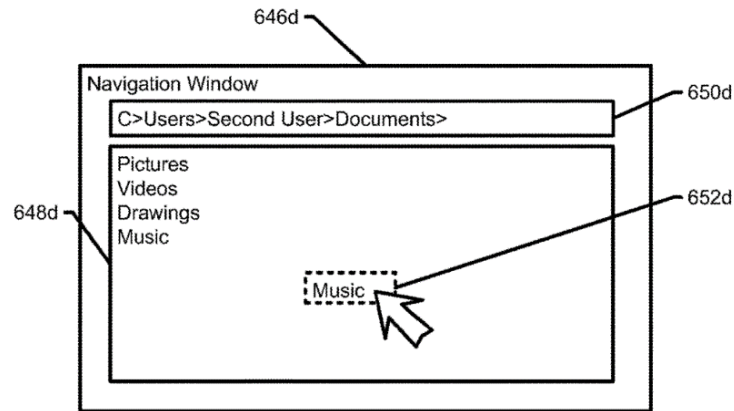
1. Technical overview of the '520 patent

24. At a high level, the '520 patent's methods create a "representation" of at least one folder shared with a recipient within a file explorer interface on the recipient's computer, such that, among other things, no file within the shared folder is stored on the recipient's local drive at the outset. Instead, the file is stored on a server and downloaded to the recipient's local drive only when the user opens or accesses the file.

25. To accomplish this, the '635 application—which is incorporated by reference into the '520 patent—discloses an apparatus that allows for the sharing of folders and files between a first and second node over a network. (EX2004 at Fig. 5.)¹ This apparatus comprises at least one non-transitory memory storing instructions and at least one processor that can execute these instructions. (EX2004 ¶¶ [0037], [0040], [0042], [0053], [0192], [0193].) When the apparatus executes these instructions, it causes, at a first node, the display of a first interface with a first user interface element. (EX2004 ¶¶ [0082], [00122].)

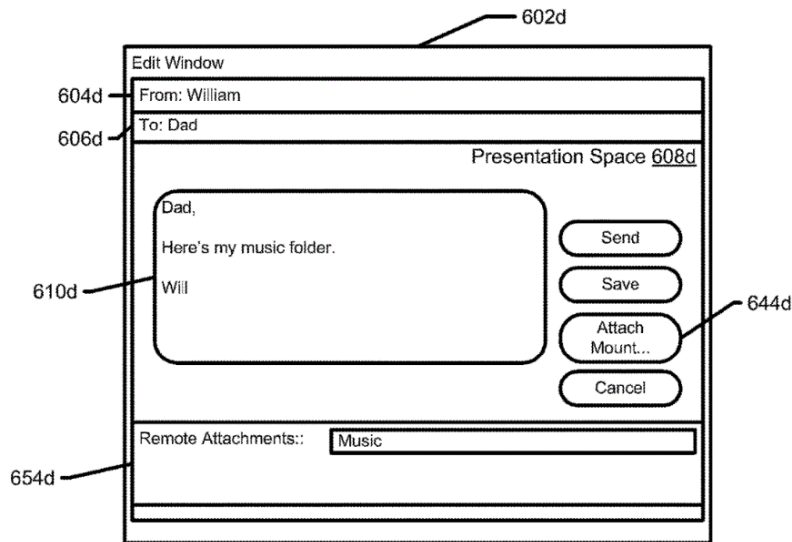
26. An example of this first user interface is seen in Figure 6D of the '635 application, which shows a first user interface (*e.g.*, navigation window 646d) with at least one first user interface element (*e.g.*, folder selection element 652d):

¹ Note that the '635 application incorporates the '906 application by reference and uses the same general terminology for referencing the first and second node. In the '906 application the “first node” is involved in requesting a file and the “second node” is involved in responding to the file request. The '635 application uses the same framework where the “second node” is involved in sharing the folder with the first node and discusses how the folder share may be in response to an earlier request. (*See e.g.*, EX2004 at [0133], FIG. 7 (dotted line referring to “previous message”); Original claim 3). Thus, the written description may refer to second node while the claim refers to first node.



(EX2004 at Fig. 6D.)

27. Then, from the first node, an indication of a folder may be received by the apparatus. The instructions also cause a display of a second interface with a second user element. Both an indicia associated with at least one email address and an indication to share the folder are received from the first node, along with an indication to share the folder. (EX2004 ¶¶ [0082], [00122].) An example of this second user interface is shown in Figure 6D of the '635 application, which shows a second user interface (*e.g.*, an edit window 602d) and at least one second user interface element (*e.g.*, a recipient information user interface element 606d):



(EX2004 at Fig. 6D.)

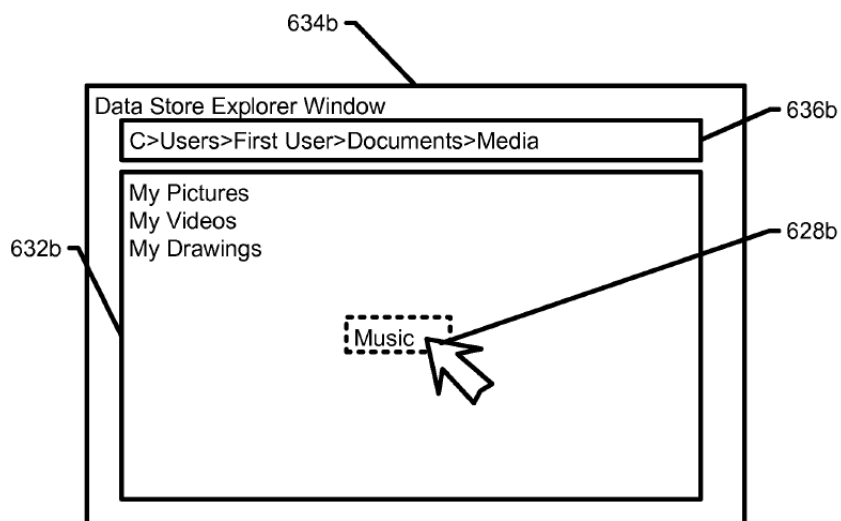
28. Based on the indicia and the indications received, an email message identifying the folder and including a reference to the folder is generated. This generated message does not include the contents of the identified and referenced folder as attachments. (EX2004 at Fig. 6D (see reference to “Remote Attachments”).) The message generated is then sent to a second node via a network, still without the files of the folder as an attachment. (EX2004 ¶¶ [0096], [0112], [0130], [0151], [0180].) The message instead includes information about the shared folder, such as the name of the folder and a link that the recipient may select to accept the invite and gain access to the shared folder. Selecting the link in the message may generate a signal or an indication to the apparatus to generate one or more representations of the shared folder at the second node, including via a

web page or via a file explorer interface at the client node. (EX2004 ¶¶ [0112]–[0115], [0130]; EX2003 ¶ [0151].)

29. A “representation” of a shared folder is a folder that can be displayed at the user’s node, but whose contents are stored on a server and are not communicated to the user till the user initiates the communication. While the contents of the shared folder (i.e., the files within the folder) also appear to the user to be present locally at the second node, (EX2003 ¶ [0201]), the contents of such files within the folder exist only on the cloud and are not downloaded until the user wishes to interact with them, for example, by viewing or editing them. In other words, these additional “representations” of the files within the folder therefore act as placeholders for the files and are created at the second node in response to the creation of the representation of the shared folder they belong to. The contents of any of the files are not shared with the second node until the user attempts to open the file or access it.

30. The challenged claims of the ’520 patent recite that a representation of the shared folder is caused to be created using code that is configured to be stored at the second node and cooperate with the separate client-based file explorer interface. (*See, e.g.*, EX1001 at cl. 17.) Specifically, while the claims require that a representation of the shared folder is created at the second node, the second node

does not itself store the files within the folder, which were not sent as attachments within the generated email message. (EX2004 ¶¶ [0109]–[0119].) An example of a client-based file explorer interface is shown in Figure 6B of the '635 application, which shows a listing pane 632b and a navigation window UI element 634b, which shows data entities in the data store of the execution environment of the node. (EX2004 ¶ [107].)



(EX2004 at Fig. 6B.)

31. The '635 application further describes interoperation with file systems or file system clients such as the XtreamFS client, which can be distributed worldwide, along with the creation of a representation of a data object (such as a folder). (EX2004 ¶¶ [116], [118].) A representation of the shared folder may be displayed at the second node in the client-based file explorer interface among other folders.

2. Benefits Over the Prior Art

32. In the past, a large variety of systems existed for sharing files, folders, and other data via network (“[a] variety of means exist for sharing files, folders, and other data via network” (EX2004 ¶ [0005]).) Each of these sharing systems required users to know how to configure and set them up. (*Id.*)

33. The ’520 patent discloses inventions to eliminate complexity for users and make sharing as easy as sending an attachment by email while allowing for sharing of folders and directory data in addition to files. (*Id.*) It addresses the above problems by, among other things, providing a web page to the recipient with a representation of the shared folder and providing code to cause a second representation of the shared folder to be created among the folders stored on the recipient’s computer and displayed via their local file explorer application (e.g., Windows Explorer). (*E.g.*, EX2004 at Fig. 3A.)

34. The representation of the shared folder permits a user to access the contents of the folder without storing the folder’s files on the recipient’s computer until the recipient elects to open a given file. In other words, the files in the folder are not downloaded when the representation is caused to be created. The contents of the folder are only downloaded (and stored on the recipient’s local drive) in response to a detection of an indication to open them.

35. Further, to facilitate access to any file, the user of the second desktop computer may employ the claimed “additional representation” of the file to select and retrieve it. Importantly, the user of the second desktop computer determines which and how many of the files of the folder(s) are subsequently retrieved to protect storage and processing resources at the second desktop computer.

36. These inventions represented significant improvements over existing systems at the time of invention, such as Dropbox, which was expressly mentioned in the ’635 application. (EX2004 ¶ 5.) Indeed, as *Houston* teaches, Dropbox and similar prior art systems would automatically download the folder and its contents at the second desktop computer when a folder was shared with it. In other words, when the folder was created at the second desktop computer, it would include all of the folder’s files locally.

3. Challenged Claims

37. Because Patent Owner disclaimed claims 1–7 of the ’520 patent, only claims 17–21 remain challenged in this proceeding.

38. Claim 17 recites:

17. A method, comprising:

[a] causing, at a first node, display of: a first user interface element, for collecting information associated with at least one folder,

[b] a second user interface element, for collecting at least one object associated with at least one email address, the at least one object associated with at least one email address being the at least one email address or an alias associated with the at least one email address, and

[c] a third user interface element, for detecting an indication of a selection thereof to cause an initiation of a sharing of the at least one folder;

[d] causing generation of at least one email, based on the information associated with the at least one folder, the at least one object associated with the at least one email address, and the detection of the indication of the selection of the third user interface element to cause the initiation of the sharing of the at least one folder, where the at least one email: identifies the information associated with the at least one folder, includes an Hypertext Transfer Protocol (HTTP) link, does not include a file attachment, for permitting avoidance of at least one file from being communicated to and stored at the second node until an initiation of the communication of the at least one file by a user of the second node is detected and the communication commences via at least one server that stores the at least one file, is at least partially pre-written, and is automatically caused to be received without requiring user involvement after the detection of the indication of the selection of the third user interface element to cause the initiation of the sharing of the at least one folder;

[e] receiving, from the second node and [] at least one server, a signal for causing creation of a first representation of the at least one folder, in a location among one or more folders, that is stored at the at least one server and that is displayable via at least one web page;

[f] causing, at the second node, receipt of the at least one web page, that results in display, at the second node and via the at least one web page, the first representation of the at least one folder that is stored at the at least one server; and

[g] causing, at the second node, receipt of code for storage at the second node and cooperation with a file explorer interface of a client-based file explorer application, for being utilized to: cause creation of a second representation of the at least one folder, in a location among one or more folders, that is stored at the second node and that is displayable via the file explorer interface of the client-based file explorer application.

39. Claims 18–21 depend on claim 17. They recite:

18. The method of claim 17, wherein the email and the file explorer interface are displayed via separate interfaces for permitting access to the at least one folder via multiple different interfaces based on a detection of an indication that the HTTP link has been selected.

19. The method of claim 17, wherein the file explorer interface of the client-based file explorer application is displayed via an interface that does not include a web page displayed via a web browser.

20. The method of claim 17, wherein the file explorer interface is part of an operating system of the second node.

21. The method of claim 17, wherein at least one of: the first user interface element, the second user interface element, and the third user interface element are caused by sending a first communication; the receipt of the at least one web page is caused by sending a second

communication; or the receipt of the code is caused by sending a third communication.

B. Dropbox

40. Dropbox provides cloud-based file and folder sharing, synchronization, collaboration software that enables teams to store, share, organize, and edit their work. The Dropbox platform is available as a software-as-a-service (SaaS) application via a web client, at www.dropbox.com (i.e., the Dropbox “web application”), the Dropbox desktop application (for Windows/Linux/Mac), and mobile applications (for iOS/Android).

41. In relevant part, Dropbox stores the actual contents of users’ files in encrypted blocks on open source relational database MySQL across thousands of servers. (EX2050 at 20-22.) When a file is modified, either by its owner or by others whom the file has been shared with, only the blocks that have been modified are synchronized between the server and users. (*Id.*)

1. Folder Sharing

42. Dropbox allows users to share folders with others by inviting them to view the folder and files within it. A Dropbox user may share folders via the Dropbox website (dropbox.com), the Dropbox folder on the user’s computer, or the tray or menu bar that forms part of the Dropbox desktop application in the

user's system. When a user shares a Dropbox folder using any of these methods, the recipient receives an email with a link to the shared folder.

43. The people invited will then receive an email from Dropbox inviting them to view and join the shared folder. The recipient may view the shared folder by accepting the folder share invite, for example, by selecting an HTTP link to the shared folder within the received email. Doing so displays the shared folder to the recipient in his/her own Dropbox account within a web browser. The recipient is then able to review and edit files in the shared folder with colleagues, partners, or customers.

44. Alternatively, when using Dropbox's desktop application, the newly shared folder is created as a representation on the recipient's local computer. The recipient may then use the desktop application to view the contents of their Dropbox account in a Windows Explorer or Mac OS Finder window, as if they were viewing other folders on the local computer. The recipient may then proceed to review and edit files as if those files resided on their computer itself.

2. Smart Sync

45. "Smart Sync" is a Dropbox marketing label for the synchronization engine currently used in Dropbox's desktop application to keep a user's files and folders synchronized between their local filesystem and Dropbox's servers.

Dropbox explains that Smart Sync is a “feature that makes all the content in a user’s Dropbox account seamlessly accessible from their desktop file system—and the content takes up virtually no local disk space until it’s needed,” such that users “gain full visibility and unprecedented access to their entire Dropbox right from their desktop file system, no matter how large.” (EX2012.)

46. Dropbox introduced Smart Sync (formerly known as “Project Infinite”) in or around April 2016 to allow its users “access every file and folder in [their] Dropbox account from [their] computer without them taking up space on [their] hard drive until [they] actually need to access them.” (EX2046.) It does this by using a special type of file, called a placeholder file, that represents a file on disk without actually storing the file data locally. (EX2017.) Placeholder files appear in the local file system alongside the user’s existing files, and from the perspective of the user, the file appears as if it were stored in the user’s local hard drive, even though it only exists in the cloud. (EX2047.) It is only when a user tries to access the file (for example, from Windows File Explorer or Mac Finder) that the current contents of the file are downloaded on-demand from Dropbox’s server, in a process known as “hydrating” the placeholder. (EX2017.) Therefore, with Smart Sync, “whenever they need to access files stored in the cloud, users can download them with a quick double click.” (EX2014.)

47. Dropbox explains that Smart Sync was the result of a full rewrite of “the heart of” the Dropbox sync engine. (EX2017.) According to Dropbox, this was because “the server-client protocol and data model” of the prior sync engine had been designed for a “simpler time and a simpler product.” (EX2017.) The “full rewrite” of the Dropbox sync engine involved making changes to “the core of the operating system” itself, which Dropbox acknowledged testing for over a year to “battle-test[] its stability and integrity.” (EX2018.)

3. The Dropbox Litigation

48. In a prior litigation, Nos. 20-cv-00251-ADA and 21-cv-758-ADA (W.D. Tex.) (the “Dropbox litigation”), Patent Owner alleged that Dropbox infringed predecessor patents to the ’520 patent by sharing folders, requesting files, and through Smart Sync. The jury returned a verdict that the patents were invalid and not infringed.

49. In this *inter partes* review, Petitioner implies that the jury’s verdict is relevant to the issues of validity. (Pet. at 1, 2.) And in the Institution Decision, the Board “note[d]” the outcome in the Dropbox Litigation, and also noted that Patent Owner “has stated that the claims of the ’520 patent and of that case are ‘substantially similar.’” (Paper 12 at 21.) But the Dropbox Litigation does not preclude any issue here. The ’520 patent was not asserted in the Dropbox

Litigation, so its validity was not adjudicated. Nor has there been a final judgment at all; the parties are in the midst of post-trial briefing, and Patent Owner has moved for a new trial and judgment as a matter of law.

50. Indeed, the only relevance the Dropbox Litigation has to this proceeding is that Dropbox’s non-infringement arguments at trial suggest a nexus between Dropbox’s Smart Sync product and the “substantially similar” claims at issue here. In particular, in the Dropbox Litigation, each asserted claim required the use of “hypertext markup language equipped code” (“HTML-equipped code”)—which, despite other similarities between the those claims and the claims of the ’520 patent, is not an element of any challenged claim in this *inter partes* review. And these HTML-equipped code elements became the cornerstone of Dropbox’s non-infringement defense at trial. As Dropbox’s counsel stated during its closing argument:

[E]very single asserted claim in this case requires that certain interfaces be displayed using hypertext markup language-equipped code or HTML code. . . . Dropbox doesn’t use that claim limitation. There is no infringement. That’s the end of the story.

(EX2048 at 1375–81.) It was on that basis—and not on any basis associated with the challenged claims in this *inter partes* review—that the jury rendered a verdict of non-infringement.

51. In other words, Dropbox’s only non-infringement argument at trial hinged on a claim limitation that is absent here, and this suggests a nexus between Dropbox’s accused products from the Dropbox Litigation (including Smart Sync) and the challenged claims. Otherwise, if Dropbox could have argued that Smart Sync did not meet the other claim limitations that are “substantially similar” to those in the challenged claims here, it likely would have done so.

52. Similarly, Dropbox’s invalidity arguments in the Dropbox Litigation were based primarily on source code that corresponded to prior art systems, which are not available as prior art in an *inter partes* review and do not apply here. *See* 35 U.S.C. § 311(b). One of those systems was “Dropbox 2017,” a Dropbox system that included Smart Sync and was used as a prior art reference against the asserted patents, even though it post-dated the asserted patents’ priority date, because Dropbox had also successfully challenged those patents’ priority date at trial. But here, Petitioner does not dispute that the priority date of the ’520 patent is September 22, 2012 (Pet. at 5 n.1)—i.e., five years prior to the Dropbox 2017 reference—so the jury’s invalidity verdict does not preclude any issue here. And if anything, to the extent that the jury’s invalidity verdict was based on Dropbox 2017, it would suggest a nexus between Dropbox 2017’s Smart Sync and any “substantially similar” challenged claim of the ’520 patent.

C. Person of Ordinary Skill in the Art

53. Patent Owner does not dispute Petitioner’s definition of a POSITA.

VI. OVERVIEW OF CITED PRIOR ART

1. *Houston*

54. U.S. Patent No. 8,825,597 to Houston et al. (“*Houston*,” EX1003) is a patent owned by Dropbox. It teaches a system for synchronizing folders and their contents shared among multiple clients so that “each client participating in the share has a current version of the folder and its contents.” (EX1003, Abstract, 2:1–2; *see also* EX1002 ¶ 44, citing EX1003, Abstract, 1:15–17, 1:53–56, Figure 1.) Contents of shared folders are “automatically” synchronized “immediately,” so as to enable “the user to work on a file that is at all times local to his client.” (EX1003, 2:17–18; Fig. 2; 5:37–6:3.) *Houston* performs this synchronization “[u]pon determining that a change has occurred to the synchronized folder.” (*Id.* 3:64–4:3.) For example, when a user shares a subfolder within “My Dropbox”—such as “Patent Applications”—with a second user and the second user accepts the invitation to the shared folder, the server “adds the invited user’s identifier to the list of users sharing the folder” and “the invited user’s client then obtains the latest version of the synchronized file.” (EX1003, 7:49–58.)

55. Storing copies of files locally at each user is critical to *Houston*'s system. *Houston* repeatedly criticizes systems that store documents remotely—for example, *Houston* notes that “if the user is accessing the document remotely and loses his connection, he may lose his changes, be unable to continue, and may end up with a corrupted document.” (EX1003, 1:29–35; EX2026 ¶¶ 8–10, 12–14.) And *Houston*'s parent provisional application, Provisional Patent App. No. 61/233,787 (*Houston II*), which is incorporated by reference, explains that the use of local copies of files at each client is a core feature of the system. (EX2026 ¶ 11.)

56. *Houston* states that this approach provides specific benefits over virtual systems. Its system “reduces network utilization and allows synchronization to proceed without interrupting the user's experience, while enabling the user to work on a file that is at all times local to his client.” (EX1003, 2:13–18.) *Houston* further states that by using its system, “the user can maintain documents and files in a synchronized folder, and have the contents of that folder available to him regardless of which of his computers and at which location he happens to be at the moment he needs them, without having to worry about which version is available on which computer.” (EX1003 at 8:14–21; *see also* EX2026 ¶¶ 9–10, 12–14.)

2. *Garcia*

57. U.S. Patent No. 9,633,125 to *Garcia* et al. (“*Garcia*,” EX1004) is a patent originally assigned to SugarSync, Inc. that was assigned to Dropbox in 2014. (EX2008–2009.) *Garcia* purports to describe the operation of the then-existing SugarSync folder-sharing application. (EX1004 at Figs. 3–19.)

58. *Garcia* relates to “a system, method, and computer program . . . for enabling a user to synchronize, manage, and share files and folders across a plurality of client devices and a synchronization server.” (EX1004 at Abstract, 1:12–15, 1:39–42.) It describes a user interface with “a second view . . . that displays all folders, across a plurality of the user’s client devices, that the user has shared with other users,” or other “objects that other users have shared with the user.” (*Id.* at 2:4–6; 7:48–49.) Specifically, it describes a “virtual drive” 1010 that “appears as a separate disk drive on the user’s local client device”:

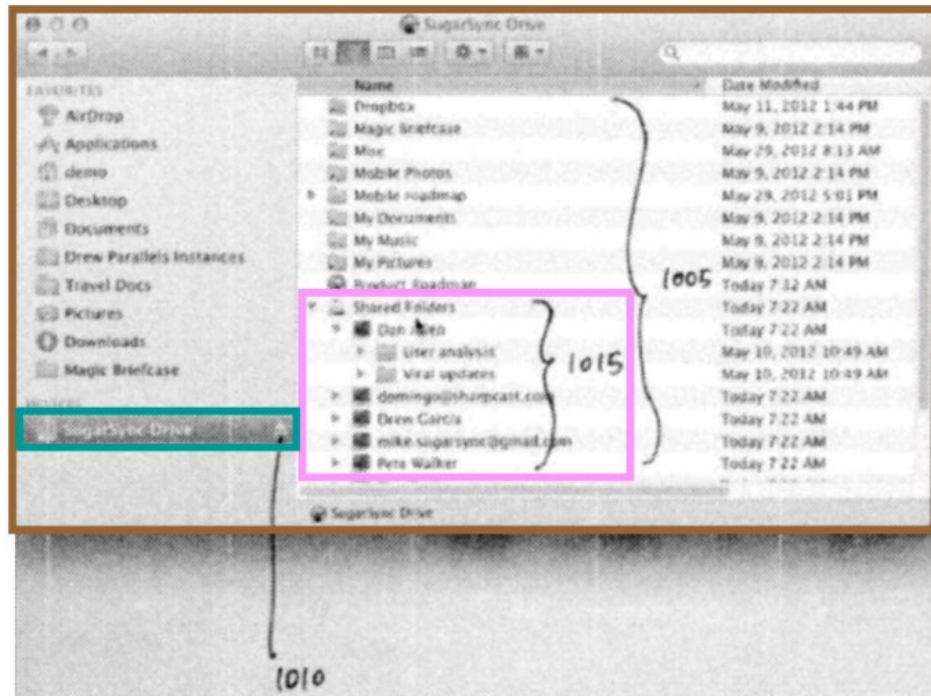


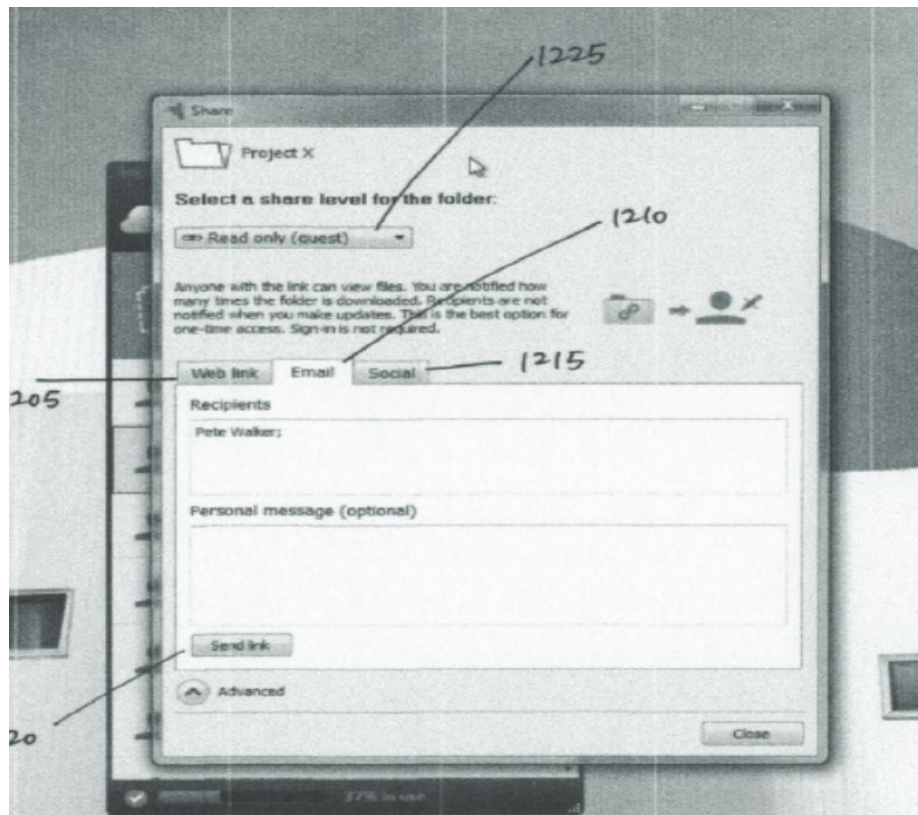
Exhibit 1004, Figure 10 (excerpted and annotated)

(EX1004 at Fig. 10 (excerpted; annotations in EX1002 ¶ 53).)

59. *Garcia*’s “virtual drive” displays “all folders, across a plurality of synchronization clients that a user has backed up or synchronized to the synchronization server . . . as well as any folders that the user shares with other users.” (*Id.* at 5:14–20.) In addition, each synchronization client “stores metadata with information on all folders shared with or by the user and all folders that the user has backed up or synced to the synchronization server (including the contents of the folder).” (*Id.* at 5:20–24.)

60. *Garcia* further describes that a client can share a folder with another client by generating and sending an email with a link to and identifying the shared

folder, instead of an attachment. (EX1004 at 10:32–34, 10:38–40, 11:39–43, Figs. 11–12.) While *Garcia* does not describe the process of a recipient receiving such an email or accessing a shared folder in much detail, it does state that “in one embodiment, when a user drags a folder to a particular contact, ***the folder*** or ***link to the folder*** is automatically sent (via email, text, or other means) to the contact,” (EX1004, 11:16-19 (emphasis added)), and “when the contact clicks on the link to folder 115, the ***contents*** of the folder are shared with the contact,” (EX1004 at 11:29-31 (emphasis added).) (*See also* EX1004 at 10:32-43 (web link to download).) While *Garcia*’s Figure 12 is not legible, a higher resolution of the figure is available as supplemental content on PAIR and reproduced below:



(EX2052.) The window shown in *Garcia* Figure 12 has “email” selected and states that “[a]nyone with the link can view files. You are notified how many times the folder is downloaded.” (*Id.*) At the bottom, there is a button stating “Send Link.” (EX2052.) Thus, *Garcia* teaches that the recipient of the shared folder downloads the *contents* of the folder when the link is accessed. It does *not* teach the creation of a representation of the folder at the receiving node. At most, it suggests that the receiving user’s *other devices (i.e., other nodes)* may show the shared folder as a representation.

61. Other publicly available documents confirm the operation and functionality of *Garcia*'s SugarSync product and that the recipient of a link downloads a copy of contents of the shared folder. For example, the SugarSync User Guide explains that receiving a link to a shared folder via email will cause the shared folder to sync automatically to the recipient's computer via the virtual drive:

Receiving a Shared Folder Invitation

If someone shares a SugarSync folder with you, you can access and download the files from the SugarSync Website, or you can [sync the folder to your computer](#). After syncing to your computer, you can locate the shared folder in **Documents > SugarSync Shared Folders**.



If you change the location of the SugarSync Shared Folders directory, or move any of its subfolders, SugarSync will not be able to update your shared files. To access your shared folders from a different location on your computer, you can create a shortcut (or an Alias for Mac) to the folder or any of the subfolders in any location. For more information, see [Creating Shortcuts to Shared Folders](#).

When you send an invitation to a shared folder, your recipients receive an email with a link button.

If they don't have a SugarSync account, they can [sign up for a free account](#).

After creating an account, SugarSync walks them through the SugarSync Manager installation. As soon as the installation completes, the folder syncs to the recipient's computer in a new folder created automatically by SugarSync: **Documents > SugarSync Shared Folders**.

After the folder is synced to the recipient's computer, SugarSync keeps the shared files up-to-date in everyone's shared folder no matter who makes changes to the files.

(EX2011 at 75–76 (annotated); EX2010 at 78.)

3. *Manzano*

62. U.S. Pat. Appl. Pub. No. 2010/0005138 to Manzano (EX1005) (“*Manzano*”) is titled “Electronic File Sharing” and purports to address problems involving “exchang[ing] large files using awkward prior-art methods such as e-

mail attachments” (*Id.* ¶ [0003].) *Manzano* teaches sharing files between devices using “mobile agents” or a “mobile agent object” that exists on a first computer system and can “transplant itself” to a second computer system, while preserving its current execution state. (*Id.* ¶ [0016].) This is performed by the mobile object creating another mobile object that functions as a “proxy object” on the server. (*Id.* ¶ [0035].)

63. Specifically, *Manzano*’s Figure 3 describes that a user may share files between a first computer and a second computer using a “file transfer application” with “file transfer clients” running at each computer device. (*Id.* ¶ [0032].) *Manzano* teaches that files may be shared with the second computer by placing them—such as by dragging and dropping them—in a designated folder. (*Id.* ¶¶ [0033], [0046]–[0049].) The server transfers portions of the shared file to the second computer by creating a separate mobile object that informs the recipient client of the file transfer. (*Id.* ¶¶ [0036], [0039].) In the process, the recipient client creates an electronic file folder in which the transferred file will be placed (*id.*, ¶ [0041]), and displays a progress meter at the sending client to indicate the status of the file transfer, (*id.* ¶ [0046]), and informs the sending client application of the file transfer completion, (*id.* ¶ [0043]).

64. In this context, if a file does not already exist at the second computer in the electronic file folder, it is indicated by a “ghosted” icon. (*Id.* ¶ [0050].) The user may then selectively download all such files that do not already exist on the second computer. (*Id.* ¶ [0051].)

65. The recipient-side operation is further shown in Figure 5, which describes that the recipient computer creates a mobile object, which in turn creates a proxy object at the server to establish a network connection. (*Id.* at Fig. 5; ¶¶ [0059]–[0061].) The proxy object provides each portion of a file to be transferred to the recipient client in the specially created electronic folder. (*Id.* ¶¶ [0041], [0062].)

VII. CLAIM CONSTRUCTION

66. Patent Owner proposes that the Board construe the term “representation of the at least one folder,” which appears in claim elements 17[e]–[g]:

Term	Patent Owner’s proposed construction
“representation of the at least one folder”	a folder that can be displayed at the user’s node, but whose file contents are stored remotely and are not communicated to the user till the user initiates the communication

67. It is necessary to construe this term because Petitioner's arguments and the Board's Institution Decision rely on an incorrect assumption about what it means. Patent Owner respectfully proposes that construing this term correctly will be dispositive and reveal that Petitioner has failed to satisfy its burden.

A. Legal Principles

68. I have been informed that, in an *inter partes* review proceeding, a claim of a patent shall be construed using the same claim construction standard that would be used to construe the claim in a civil action, including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. Under this standard, the Board must determine how a POSITA would understand a claim term in the context of the entire patent, including the specification.

69. I have also been informed that the claims themselves provide substantial guidance as to the meaning of particular claim terms. The context in which a term is used in the asserted claim can be highly instructive.

70. Further, I understand that the claims do not stand alone; instead, they are part of a fully integrated written instrument, consisting principally of a specification. For that reason, claims must be read in view of the specification, of

which they are a part. I understand that the specification is always highly relevant to claim construction; it is the single best guide to the meaning of a disputed term.

71. I also understand that the Board may consider other claims of the patent in question, both asserted and unasserted, as valuable sources of enlightenment as to the meaning of a claim term. The usage of a term in one claim can often illuminate the meaning of the same term in other claims.

72. I have been informed that a claim term should be construed consistently throughout a patent. Where multiple patents derive from the same parent application and share many common terms, the Board must interpret the claims consistently across all asserted patents.

B. “representation of the at least one folder”

Term	Patent Owner’s proposed construction
“representation of the at least one folder”	a folder that can be displayed at the user’s node, but whose file contents are stored remotely and are not communicated to the user till the user initiates the communication

73. The ’520 patent claims recite two “representation[s] of the at least one folder”: a “first” representation and a “second” representation. Each of these representations of a folder can be displayed at the user’s node, just like an ordinary folder. But each representation of a folder is different than an ordinary folder for

two reasons: (1) the representation's file contents are stored not at the user's node but instead on a server, despite the representation being displayed at the user's node; and (2) the representation's file contents are not communicated to the user till the user initiates the communication.

74. For the reasons discussed below, this proposed construction is consistent with the claim language of challenged claim 17, as well as the claim language of claims 1 and 7–8, and the specification.

1. The Claim Language Supports Patent Owner's Proposed Construction

75. The term “representation of the at least one folder” appears in claim elements 17[e]–[g]:

17[e]: receiving, from the second node and at [] least one server, a signal for causing creation of a first **representation of the at least one folder**, in a location among one or more folders, that is stored at the at least one server and that is displayable via at least one web page;

17[f]: causing, at the second node, receipt of the at least one web page, that results in display, at the second node and via the at least one web page, the first **representation of the at least one folder** that is stored at the at least one server; and

17[g]: causing, at the second node, receipt of code for storage at the second node and cooperation with a file explorer interface of a client-based file explorer application, for being utilized to: cause creation of a second **representation of the at least one folder**, in a

location among one or more folders, that is stored at the second node and that is displayable via the file explorer interface of the client-based file explorer application.

76. These claim elements provide a highly instructive starting point for understanding the term. In particular, these elements show that there are two “representation[s] of the at least one folder” (i.e., a “first” and “second” representation), each of which is created by different actors under different circumstances, and each of which can be displayed at the user’s node by different means.

77. First, these claim elements show that a “representation of the at least one folder” is itself a folder because it can be stored “in a location among one or more folders,” either at the “at least one server” (in 17[e] and [f]) or at the “second node” (in 17[g]).

78. Second, these claim elements show that there are two representations of a folder—a “first” and “second” representation—and both representations can be displayed at the user’s node. The first representation is “displayable” at the user’s node (i.e., the “second node”) “via at least one web page” (in 17[e] and [f]), and the second representation is “displayable” at the user’s node “via the file explorer interface of the client-based file explorer application” (in 17[g]).

79. Third, these claim elements show that the first and second representations of the folder are created by different actors, at different times, in different places. The first representation is created by the apparatus performing the claimed method. The apparatus receives “a signal” from the second node “for causing creation of a first representation of the at least one folder” (in 17[e]). The apparatus then creates the first representation, stores it at “the at least one server,” and then sends a “web page” to the second node that “display[s]” the first representation to the user (in 17[f]). But the second representation is created not by the apparatus itself but instead is caused to be created utilizing “code” that the apparatus sends to the second node. The code is stored at the second node and caused to be used “with a file explorer interface of a client-based file explorer application” to create the second representation and “display[]” it via a file-explorer interface at the second node.

80. The “representation[s] of the at least one folder” do not contain the contents of the file(s) when they are first created. This is shown by the language of claim element 17[d]. In claim element 17[d], the user at the first node has already indicated to the apparatus that it wants to share a folder with a user at the second node. So the apparatus generates an email and sends it to the second node. The email identifies information about the folder and includes an HTTP link, but—

importantly—“does not include a file attachment.” Claim element 17[d] explains why:

17[d]: . . . for permitting **avoidance of at least one file from being communicated to and stored at the second node until an initiation of the communication of the at least one file by a user of the second node is detected** and the communication commences via **at least one server that stores the at least one file**[.]

With this, claim element 17[d] provides two key pieces of information about the “representation[s] of the at least one folder”: (1) the contents of the files in the representations of the folder (i.e., “**at least one file**”) are “**store[d]**” on the “**at least one server**”; and (2) those contents are not “**communicated**” to “**the second node**,” nor are they “**stored at the second node**,” till the user at the second node “**initiat[es] [] the communication**.” Accordingly, Patent Owner incorporates this information in its proposed construction of “representation of the at least one folder”: i.e., “a folder that can be displayed at the user’s node, but whose file contents are **stored remotely** and are **not communicated to the user till the user initiates the communication**.”

81. These aspects of Patent Owner’s proposed construction are further supported by the language of claims 1 and 7–8. *See Phillips*, 415 F.3d at 1314 (“[o]ther claims of the patent in question, both asserted and unasserted,” are “valuable sources of enlightenment as to the meaning of a claim term”); *see also*

Rexnord, 274 F.3d at 1342 (claim terms should be construed consistently throughout a patent). For example, claim elements 1[h]–[j] specify that: (1) the contents of the files in the representation of the at least one folder are not “**stored**” at the second node, despite the representation existing among the folders in the second node’s file-explorer interface; and (2) the contents of the files in the representation of the folder are not communicated to the user at the second node till the user sends “**an indication to open the at least one file in the at least one folder**”:

1[h]: . . . based on the receipt of the indication of the at least one folder, the indicia associated with the at least one email address, and the indication to share the at least one folder via the at least one network;

cause, utilizing code configured to be stored on a storage at the second node and further configured to cooperate with a file explorer interface, creation of a representation of the at least one folder in a location among one or more folders on the file explorer interface,

where **the storage at the second node does not store the at least one file when the creation of the representation of the at least one folder is caused**;

1[i]: detect, at the second node, **an indication to open the at least one file in the at least one folder**; and

1[j]: **in response to detection of the indication to open the at least one file in the at least one folder, cause retrieval of the at least one file via the at least one network for permitting display of the at least one file at the second node.**

82. Likewise, claims 7–8 further support Patent Owner’s proposed constructions for the same reasons: i.e., the content of the files in the representation are not “**stored**” at the second node, nor are they “**communicated to**” the user at the second node till the user “**request[s]**” it:

7[f]: . . .cause, utilizing code configured to be stored on a storage at the second node and further configured to cooperate with a file explorer interface of a client-based file explorer application, creation of a representation of the at least one data object in a location among one or more folders on the file explorer interface, where **the storage at the second node does not store any file in the at least one data object when the creation of the representation of the at least one data object is caused.**

8: The system of claim 7, wherein the system is configured such that the email message is sent without including the file attachment with the at least one email message, and **the storage at the second node does not store any file when the creation of the representation of the at least one data object is caused**, both for **avoiding the at least one file from having to be communicated to and stored at the second node until the at least one file is requested by a user at the second node.**

2. The Specification Supports Patent Owner's Proposed Construction

83. The '520 patent's specification is "highly relevant to the claim construction analysis," *see Phillips*, 415 F.3d at 1315, and further supports Patent Owner's proposed construction of "representation of the at least one folder": i.e., "a folder that can be displayed at the user's node, but whose file contents are **stored remotely** and are **not communicated to the user till the user initiates the communication**." In particular, the '635 application—which the '520 patent claims priority to and incorporates by reference (EX1001 at 1:52–62; *see also* EX2003 ¶¶ 3, 34)—makes clear that the contents of the representations' files are **stored** on a **server** rather than at the user's node and are **not communicated to the user till the user initiates the communication**.

84. For example, claim 1 of the '635 application claims a method in which a second user shares "a data object **in a second data store**" with a first user:

1. A method for sharing a data object in a data store via a communication, the method comprising:

receiving, by a first communications agent in a first execution environment according to a first communication protocol via a network from a second communications agent in a second execution environment, a first message, in a communication and addressed to a first user represented by the

first communications agent, that includes a mount descriptor that identifies **a data object in a second data store in the second execution environment**;

detecting the mount descriptor;

determining a first location in a first data store in the first execution environment; and

creating, based on the mount descriptor, **a representation of the data object at the location, wherein accessing the representation includes accessing the data object from the second data store,**

wherein performing at least one of the preceding actions comprising the method includes execution of an instruction by a processor.

85. This claim has two steps that are relevant here. First, a “representation of the data object” is created at the first user’s “first location in a first data store”—which corresponds to claim 17 of the ’520 patent’s creation of a “second representation of the at least one folder” at the second node. And second, the first user “**access[es] the representation**” at the first user’s location, which “**access[es] the data object from the second data store.**” In other words, the content of the representations’ files are **stored** on a **server** (i.e., “in a second data store”) rather than at the user’s node and are not **accessed** by the user till the user **accesses the representation.**

86. Claims aside, the '635 application's specification also supports Patent Owner's proposed construction because it repeatedly describes a "representation, of the data object" as being located at the user's node ("in the first data storage"). (*See, e.g.*, EX2004 ¶¶ 8–13, 109, 135.) Further, **"when [the representation is] accessed[,]"** the user **"access[es] the data object from the second data store"** (i.e., the server) rather than from within the representation at the user's node. (*See, e.g., id.*)

87. Even so, the Board homed in on the '635 application's ¶ [116], which states that "a representation of a data object may include and/or may otherwise be based on a replica of at least a portion of the data object." (EX2004 ¶ [116].) And based in part on this example, the Board rejected Patent Owner's definition of "representation" (which paralleled Patent Owner's proposed construction of "representation of the at least one folder" here) and described ¶ [116]'s example as "the opposite of Patent Owner's asserted 'special version' definition [of 'representation.']" (Paper 12 at 43.) But ¶ [116]'s example is consistent with both Patent Owner's proposed construction of "representation" in the Preliminary Response and its proposed construction of "representation of the at least one folder" here.

88. In particular, ¶ [116] describes how the invention would work with a client, XtremFS, that “replicates file data across multiple storage servers” to “to handle problems and failure scenarios that can occur in distributed systems including message loss, network partitions, server crashes, and the like.” These replicated data objects would be located remotely (i.e., “across multiple storage servers”). Indeed, ¶ [116] is one of a series of paragraphs that describe the “variety [of] means available to the execution environment, for attaching and/or otherwise mounting a representation of a data object in a data store in another execution environment”—e.g., on a remote server. (*See* EX2004 ¶¶ [110]–[116] at [110]). Given this context, a POSITA would have understood that the representation could represent the data object itself or a replica of the data object, both of which are stored remotely. And this is consistent with Patent Owner’s proposed construction of “representation of the at least one folder”; i.e., “a folder that can be displayed at the user’s node, but whose at least one file’s content”—replica or otherwise—“is stored on a server and is not communicated to the user till the user initiates the communication.”

VIII. PETITIONER HAS NOT PROVEN BY A PREPONDERANCE OF THE EVIDENCE THAT THE CHALLENGED CLAIMS ARE UNPATENTABLE

89. Petitioner has not demonstrated that the challenged claims are obvious over *Houston* in view of *Garcia*, *Manzano*, and/or *Wu*.

90. When the term “representation of the at least one folder” is construed correctly, *Houston* does not teach claim elements 17[d]–[g] and teaches away from any prior art reference that would. *Manzano* and *Garcia* fail to fill the 17[d]–[g] gap, and a POSITA would not have been motivated to combine them with *Houston* anyway.

91. Petitioner combines its prior art references based on hindsight, which is improper, and does so using a construction of “representation of the at least one folder” that is wrong. And because all other challenged claims depend on claim 17, the Petitioner has failed to meet its burden to show that any of the challenged claims are unpatentable. For these and other reasons described below, the challenged claims should be upheld.

A. Legal Principles

92. I have been informed that to make a prima facie showing of obviousness, a petition must, among other requirements, demonstrate that the cited references, either alone or together, disclose each element of a challenged claim.

93. I have been informed that Petitioner also has the burden to show there would have been some motivation to combine the asserted references, and that a POSITA would have had a reasonable expectation of success in making such a combination. In other words, obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. Further, even if individual modifications or choices were obvious, a petition must explain why making all of the changes at once would have been obvious. I understand that such secondary considerations include: a long-felt need, commercial success, unexpected results, praise of the invention, licensing, copying, failure of others, and skepticism by experts.

94. It is also my understanding that hindsight analysis is also inappropriate; obviousness must be measured at the time the invention was made. Consequently, a petitioner may not use the patent as a roadmap. In other words, a petition must demonstrate a rationale to combine prior art references without relying on the patent disclosure itself.

95. I have been informed that a combination of elements in a patent claim may be obvious when all of those elements were known in the prior art and there was a reason for a POSITA to combine or modify the prior art to obtain the elements as claimed, with no change in their respective functions. Furthermore, I

understand that a patent claim would not be obvious if a proposed modification would render the prior art unsuitable for its intended purpose or if the proposed modification would change the principle of operation of the prior art. I have also been told that a reference may “teach away” from a proposed combination where it expressly rules out or discourages such a combination.

B. Ground 1: Petitioner Has Failed to Show that *Houston* in view of *Garcia* Renders the Challenged Claims Obvious Under 35 U.S.C. § 103

1. Claim 17 Is Not Obvious Over *Houston* in View of *Garcia*

96. *Houston* does not teach at least claim elements 17[d]–[g]. Further, when the term “representation of the at least one folder” is construed correctly, *Houston* not only fails to teach claim elements 17[d]–[g]; it teaches away from any system that would. And as a result, Petitioner cannot combine *Houston* with *Garcia*—nor any other reference—to fill the 17[d]–[g] gap.

a. *Houston* Does Not Teach Claim Element 17[d]–[g]’s “representation of the at least one folder”

97. *Houston* does not teach claim elements 17[d]–[g] because it does not “caus[e] creation of a first representation of the at least one folder, in a location among one or more folders, that is stored at the at least one server and that is displayable via at least one web page” (see claim elements 17[e]–[f]), nor does it “cause creation of a second representation of the at least one folder, in a location

among one or more folders, that is stored at the second node and that is displayable via the file explorer interface of the client-based file explorer application” (*see* claim element 17[g]). Nor does it teach the “avoidance of at least one file from being communicated to and stored at the second node until an initiation of the communication of the at least one file by a user of the second node is detected and the communication commences via at least one server that stores the at least one file” (*see* claim element 17[d]). At most, *Houston* creates a folder that *automatically* downloads local copies of files from a remote server, regardless of whether a user initiates the download. But *Houston*’s folder is not a “representation of the at least one folder” under the proper construction of the term—i.e., *Houston*’s folder is not “a folder that can be displayed at the user’s node, but whose at least one file’s content is stored on a server and is not communicated to the user till the user initiates the communication.”

98. Instead, *Houston*’s system “automatically” and “immediately” synchronizes folders and their contents among multiple clients by downloading local copies of shared documents to each user’s client. (EX1003, 2:17–18; Fig. 2; 5:37–6:3.) This allows each user to have a current, locally stored version of the shared folder and its contents, which allows “the user to work on a file that is at all times local to his client.” (EX1003, Abstract, 1:15–17, 1:53–56, 2:1–2; 5:37–6:3;

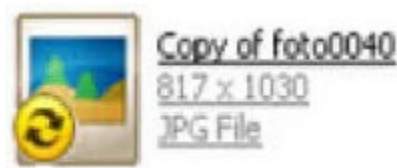
Figs. 1–2.) Indeed, automatic local storage is at the heart of *Houston*’s system, and *Houston* repeatedly criticizes systems that store documents remotely. (EX1003, 1:29–35; EX2026 ¶¶ 8–10, 12–14.) Claim 17, in particular element 17[d], is the opposite of automatic downloading, specifically stating that the at least one file is not “communicated to and stored at the second node until an initiation of the communication of the at least one file by a user of the second node is detected and the communication commences via at least one server that stores the at least one file.”

99. The systems that *Houston* criticizes would include any system that practices claim element 17[d]–[g]. Unlike *Houston*’s system, an apparatus that performs claim elements 17[d]–[g] would not automatically download a local copy of a file from a remote server into a local folder; instead, it would create a representation of a folder and then wait for the recipient user to initiate the communication of the file into that representation of the folder. And this what distinguishes the ’520 patent’s folder-share embodiment from *Houston*’s system.

100. Petitioner further argues that *Houston*’s “checkmark overlays” on its folders teach claim element 17[g]. (Pet. at 35–36.) According to Petitioner, the “brief absence of checkmark overlays indicated that the folders and file had not yet been synchronized with the host system,” and “[t]hus, at the very moment these

icons were created . . . the client would not have stored any file within the folders, including the “Patent Applications” folder[.]” (Pet. at 36.) But *Houston* does not teach that any “overlays” are briefly absent, or that “at the very moment [they] were created . . . the client would not have stored any file within the folders.” Rather, Petitioner’s argument is based on the say-so of its expert with no facts or data, making it “entitled to little to no weight.” 37 C.F.R. § 42.65(a).

101. Petitioner also relies on EX1011—a document describing a different system, “SugarSync”—to assert that “Files or folders that in sync with the cloud are represented by with green check mark[.]” (Pet. at 35–36.) But EX1011 is not related to *Houston* and does not otherwise describe it. Petitioner does not argue that it would have been obvious to combine *Houston* with SugarSync, nor could Petitioner assert SugarSync in an *inter partes* review anyway. And EX1011 does not even show the “brief absence” of checkmark overlays; instead, EX1011 shows that a folder that automatically downloads local copies would have displayed a gold “syncing” overlay instead:



(See EX1011 (“objects that are being uploaded or downloaded are represented with a gold syncing icon”).)

102. Petitioner’s “brief absence” argument also fails because it ignores claim element 17(d), which states the at least one file is not “communicated to and stored at the second node until an initiation of the communication of the at least one file by a user of the second node is detected and the communication commences via at least one server that stores the at least one file.” Regardless of any alleged “brief absence,” *Houston* does not wait for “an initiation of the communication of the at least one file” by a user before it stores a file at the user’s node; instead, it downloads local copies to the user’s node automatically.

103. In sum, Petitioner’s cite to EX1011 shows that Petitioner’s attempts to map *Houston* to claim elements 17[d]–[g] are based on hindsight, which is improper.

b. A POSITA Would Not Have Been Motivated to Combine *Houston* and *Garcia* to Perform Claim Element 17[d]–[g]

104. Claim elements 17[d]–[g] are, in their simplest terms, directed to method steps for downloading remotely stored files. And while *Houston* and *Garcia* are both also directed to downloading remotely stored files, they do so in different and conflicting ways. Whereas *Houston* “automatically” downloads local copies from shared folders and synchronizes them with other local copies, *Garcia* functions as a “virtual drive” for remotely stored files without first downloading

them locally to *all* a user's devices.² (EX1003, 3:64–4:3; 2:17–18; 5:37–6:3.)

Indeed, *Houston* criticizes systems like *Garcia* that store documents remotely—(e.g., EX1003, 1:29–35; EX2026 ¶¶ 8–10, 12–14)—and therefore teaches away from combining *Houston* with not only *Garcia* but also any other system that might perform claim elements 17[d]–[g].

105. Moreover, modifying *Houston* from a system intended to download the contents of files automatically and immediately to one that merely functions as a “virtual drive” would have frustrated the heart of the inventions of *Houston* and would render it inoperable for its intended purposes, namely, a system designed to allow users to access a shared folder across a plurality of client devices, such that “each client participating in [a shared folder]” would be provided with “a current version of the folder and its contents.” (EX1003, Abstract.) The proposed combination of *Houston* with *Garcia* would therefore result in the loss of key functions and benefit of *Houston*, namely, in making a shared folder and its up-to-date contents available to all client devices of the users the folder has been shared

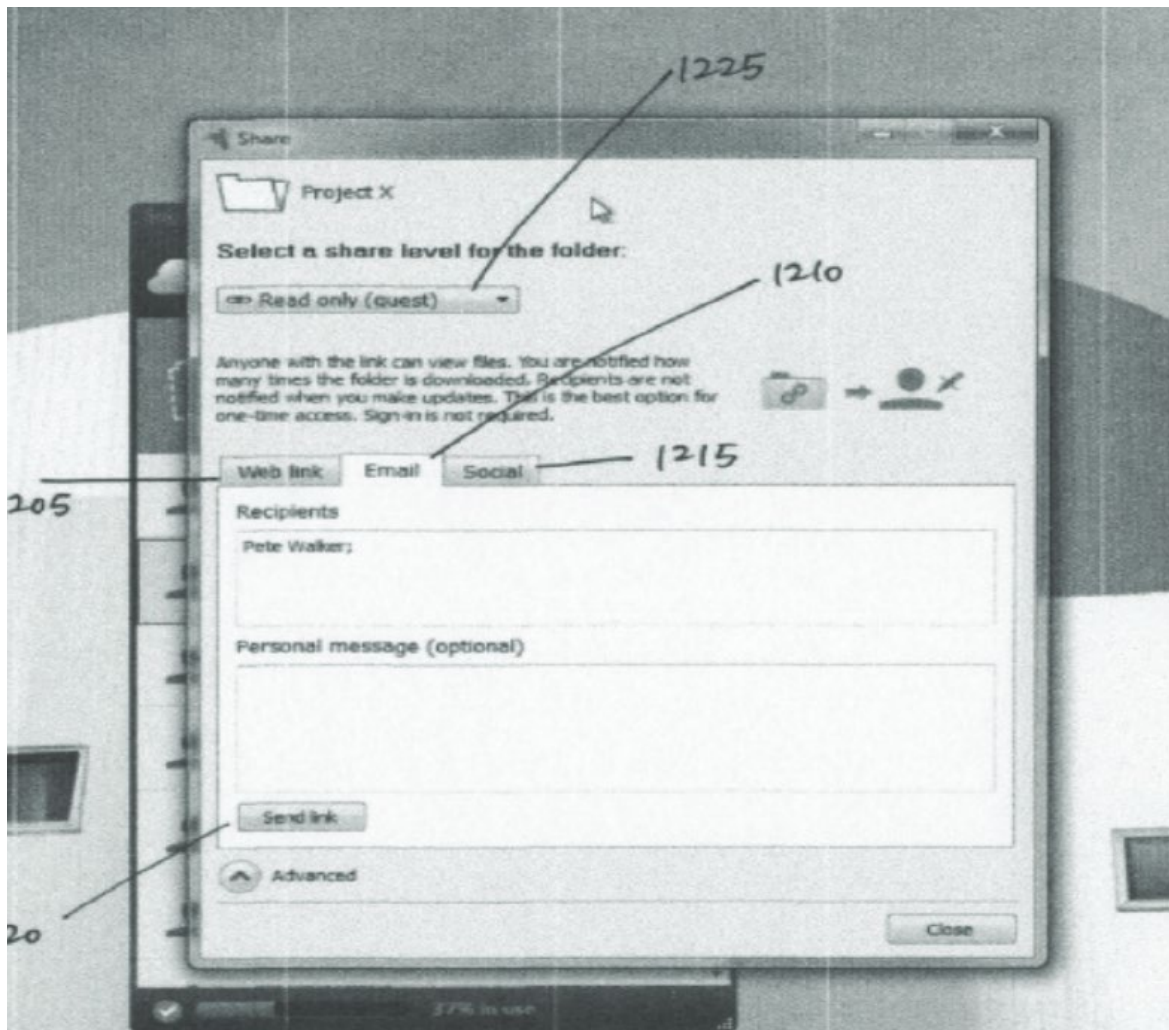
² As discussed herein, *Garcia* does teach that the second node where the folder share is actually received does download a local copy automatically. *Garcia* only teaches the recipient's other devices (i.e., different nodes) may not automatically download corresponding local copies. To the extent Dropbox argues otherwise, that would only be further reason that a POSITA would not have been motivated to combine the teachings of the two references.

with. Such a loss of key functions supports a finding of no motivation to combine the references.

c. Even if Combined, the Combination of *Houston* and *Garcia* Does not Teach All Elements of Claim 17

106. While a POSITA would not have been motivated to combine the teachings of *Houston* and *Garcia* as Petitioner proposes, the resulting combination would still fail to teach claim elements 17[d]-[g]. Critically, *Garcia* teaches that the recipient of a shared folder ***does download*** the shared folder at the node where the folder share invitation is received. That the user's ***other devices*** (e.g., different nodes) may show representations of the shared folder is besides the point. *Garcia* does not teach the creation of a representation at the node where the invitation to the shared folder is received.

107. *Garcia* teaches “in one embodiment, when a user drags a folder to a particular contact, ***the folder or link to the folder*** is automatically sent (via email, text, or other means) to the contact,” (EX1004, 11:16-19 (emphasis added)), and “when the contact clicks on the link to folder 115, the ***contents*** of the folder are shared with the contact,” (EX1004 at 11:29-31 (emphasis added).) (*See also* EX1004 at 10:32-43 (web link to download).) A higher resolution image of Figure 12 available on PAIR is reproduced below and further demonstrates that the recipient of the folder share ***downloads*** the contents in response:



(EX2052.) As shown above, the window shown in *Garcia* Figure 12 has “email” selected and states that “[a]nyone with the link can view files. You are notified how many times the folder is downloaded.” (*Id.*) At the bottom, there is a button stating “Send Link.” (EX2052.) Thus, *Garcia* teaches that the recipient of the shared folder receives a link and downloads the *contents* of the folder when the link is accessed. It does *not* teach the creation of a representation of the folder at

the receiving node. Therefore, even if a POSITA would have combined *Houston* and *Garcia*, the resulting combination would not teach all the elements of claim 17.

2. Claim 18 Is Not Obvious Over *Houston* in View of *Garcia*

108. Claims 18 depends on claim 17. For at least the reasons set forth above with respect to claim 17, Petitioner has failed to show that claim 18 is rendered obvious over *Houston* in view of *Garcia*.

109. *Garcia* also fails to teach claim 18 for two other reasons. First, Petitioner overlooks claim 18's element that "the email and the file explorer interface are displayed via separate interfaces[,]" and instead analyzes only the "for permitting access to the at least one folder via multiple different interfaces" element of the claim. (Pet. at 60–61; EX1002 ¶¶ 156–57.) Neither Petitioner nor its expert analyze the "interface" on which the email is "displayed," nor whether it is a "separate interface" from the "file explorer interface," as the claim requires.

110. Second, *Garcia* teaches that in response a user to clicking an HTTP link in a received email, the contents of the folder are downloaded at the recipient's device. (EX1004 at 11:16-31 ("When the contact clicks on the link to folder 1115, the contents of the folder are shared with the contact."); *see also* EX2052 (*Garcia* FIG. 12).) Nonetheless, Petitioner argues that "a POSITA would

have known that (1) clicking the HTTP link would have opened a web page in a web browser that is separate from a file explorer interface of a client-based file explorer application.” (Pet. at 61, citing EX1002 ¶ 156.) But other publicly available documents about *Garcia*’s system (SugarSync, *see, e.g.* EX1004 at Figs. 10, 13) show otherwise. SugarSync’s User Guide explains that receiving a link to a shared folder via email will cause the shared folder to sync automatically to the recipient’s computer via the virtual drive, not via a web page:

Receiving a Shared Folder Invitation

If someone shares a SugarSync folder with you, you can access and download the files from the SugarSync Website, or you can [sync the folder to your computer](#). After syncing to your computer, you can locate the shared folder in **Documents > SugarSync Shared Folders**.



If you change the location of the SugarSync Shared Folders directory, or move any of its subfolders, SugarSync will not be able to update your shared files. To access your shared folders from a different location on your computer, you can create a shortcut (or an Alias for Mac) to the folder or any of the subfolders in any location. For more information, see [Creating Shortcuts to Shared Folders](#).

When you send an invitation to a shared folder, your recipients receive an email with a link button.

If they don’t have a SugarSync account, they can [sign up for a free account](#).

After creating an account, SugarSync walks them through the SugarSync Manager installation. As soon as the installation completes, the folder syncs to the recipient’s computer in a new folder created automatically by SugarSync: **Documents > SugarSync Shared Folders**.

After the folder is synced to the recipient’s computer, SugarSync keeps the shared files up-to-date in everyone’s shared folder no matter who makes changes to the files.

(EX2011 at 75–76 (annotated); EX2010 at 78.) Therefore, when a user clicks the HTTP link of the folder-share email, *Garcia* (in describing SugarSync) teaches, at best, that an “installation” procedure is initiated, after which the shared folder is downloaded locally and synced in the recipient’s virtual drive, not via a web page

or “multiple different interfaces” as the claim requires. (*See* EX1004, 1:66-2:3 (explaining that synchronizing a folder results in the download of the folder to the local device).)

3. Claims 19–21 Are Not Obvious Over *Houston* in View of *Garcia*

111. Claims 19–21 depend on claim 17. For at least the reasons set forth above with respect to claim 17, Petitioner has not put forward sufficient evidence that *Houston* in view of *Garcia* renders claims 19–21 obvious.

112. Petitioner has therefore failed to demonstrate a reasonable likelihood that claims 17–21 are rendered obvious over *Houston* in view of *Garcia*.

Therefore, Ground 1 of the Petition fails.

C. Ground 2: Petitioner Has Failed to Show that *Houston* in view of *Garcia* and *Manzano* Renders the Challenged Claims Obvious Under 35 U.S.C. § 103

113. Petitioner relies on *Manzano* for only claim element 17[g].³ (Pet. at 65.)

114. *Manzano* fails to teach claim element 17[g] because it does not teach “causing, at the second node, receipt of code . . . for being utilized to cause

³ Petitioner does not rely on *Manzano* for other elements, such as element 17[d]. Petitioner also relied on *Manzano* for 1[h] and 7[f], but Patent Owner has disclaimed those claims.

creation of a second representation of the at least one folder, in a location among one or more folders, that is stored at the second node and that is displayable via the file explorer interface of the client-based file explorer application.” *Manzano* teaches that a recipient client is instructed “to set up an electronic file folder into which the transferred file will be place.” (EX1005, ¶ [0041].) It does not teach a representation of a shared folder, much less a representation of a shared folder being created in a location among one or more folders” “that is displayable via the file explorer interface of the client-based file explorer application” as recited in claim element 17[g]. Indeed, *Manzano* only teaches transferring *files* rather than entire folders in the manner recited in claim 17.

115. Moreover, a POSITA would not have been motivated to combine *Houston* with *Garcia* or *Manzano* to perform claim element 17[g], together or separately, because *Houston* teaches away from both of them. *Manzano*’s system teaches a system that, among other things, does not download local files to folder automatically but instead allows a user to selectively download files stored remotely. (*Id.* ¶¶ [0041], [0050]–[0051].) Therefore, the same reasons that a POSITA would not have combined *Houston* with *Garcia* (described above), a POSITA would not have combined *Houston* with *Manzano* either.

116. Moreover, *Manzano* is not “from the same field of endeavor” as the ’520 patent, nor from *Garcia*’s. (Pet. at 69.) Both the ’520 patent and *Garcia*—other differences aside—are directed primarily to sharing folders between users. (EX2004 ¶ 5.) But, as noted above, *Manzano* does not teach sharing folders with another user at all. Instead, *Manzano* is directed to allowing a user to transfer their own files from a first computer to a second computer, and its file-transfer method is far removed from the ’520 patent’s methods. (See, e.g., EX1005 ¶¶ [0032]–[0035] (describing “mobile agents” and “mobile objects”) [0033]–[0043] (describing “proxy objects”), [0050] (describing “ghosted” icons).) Nothing in *Manzano* describes sharing entire folders with another user by email without attachments, nor creating representations of those shared folders, nor downloading contents of those folders as recited in claim 17. Therefore, a POSITA would not have been motivated to combine *Manzano* with *Houston* or *Garcia* (or both), and Ground 2 of the Petition fails for these additional reasons.

D. Grounds 3 and 4: Petitioner Has Failed to Show that *Houston*, *Garcia*, and *Wu* or *Houston*, *Garcia*, *Manzano*, and *Wu* Render the Challenged Claims Obvious Under 35 U.S.C. § 103

117. Petitioner relies on *Wu* only for claim element 17[d]’s “the at least one email . . . is at least partially pre-written” limitation. (Pet. at 73.) Patent Owner does not dispute that *Houston* teaches this limitation of claim 17[d], so *Wu* is no

longer relevant to this *inter partes* review and does not need to be addressed here.

In sum, regardless of whether *Wu* also teaches this limitation of claim 17[d], Petitioner's Ground 3 (*Houston*, *Garcia*, and *Wu*) fails for the same reasons that its Ground 1 (*Houston* and *Garcia*) fails, and its Ground 4 (*Houston*, *Garcia*, *Manzano*, and *Wu*) fails for the same reasons that its Ground 2 (*Houston*, *Garcia*, and *Manzano*) fails. For each of these Grounds, *Houston* fails to teach claim element 17[f]–[g], and neither *Garcia* nor *Manzano* nor *Wu* fill the 17[f]–[g] gap.

IX. SECONDARY INDICIA ADDITIONALLY CONFIRM THAT THE CHALLENGED CLAIMS ARE NON-OBVIOUS

118. Dropbox adopted a feature called Smart Sync in 2016, and it proved to be a success. This success resulted from the unique characteristics of the claimed inventions, which (among other considerations) confirms that the challenged claims are not obvious.

A. Nexus Between Dropbox's Smart Sync and the Challenged Claims

119. Dropbox explains that Smart Sync is a “feature that makes all the content in a user's Dropbox account seamlessly accessible from their desktop file system — and the content takes up virtually no local disk space until it's needed,” such that “Team members gain full visibility and unprecedented access to their entire Dropbox right from their desktop file system, no matter how large.”

(EX2012.)

120. Dropbox introduced Smart Sync (f/k/a “Project Infinite”) in or around April 2016, as a technology that would “reimagine how people find, access, and collaborate with large amounts of data.” (EX2013.) With Smart Sync, “users can see all their files and folders right from their desktop, whether they’re stored in the cloud or synced locally . . . [and] won’t need to take extra steps—like switching to a web browser—just to view files. And whenever they need to access files stored in the cloud, users can download them with a quick double click.” (EX2014.)

121. According to a January 30, 2017 article, Smart Sync is “[c]entral to Dropbox’s new team-centric approach . . . that all of your group’s files and shared documents should be easily within view and within reach,” because it “mak[es] all the files in your group Dropbox, no matter how gigantic it gets, accessible through your computer’s file-system interface. It doesn’t matter if you don’t have enough space on your local drive. The upstream files look like any other item in your Dropbox, but a little cloud icon indicates that they’re ‘on-demand’ files: click on one and it will quickly download and open, as if it were there on your disk the whole time.” (EX2015.) As a result, the article states, “[Smart Sync] does make you want to start using it right now.” (*Id.*) Indeed, Smart Sync was available only to business subscribers at its launch but is now available to all Dropbox users. (EX2016 at 32.)

122. The launch of Smart Sync was seen as part of Dropbox’s strategic pivot to focus more on enterprise/business use cases and compete with platforms like Microsoft SharePoint and Google Drive. (EX2019; EX2020.) Analysts viewed it as a significant step in Dropbox’s evolution from a consumer cloud storage service to an enterprise software company. (EX2019.)

123. There is a nexus between Smart Sync and the claimed inventions. For example, as set forth above, a key benefit of the claimed inventions is the ability to make available shared folders (and the files within them) to recipients simply as “representations” without needing to download the contents of any files to each such user’s local drive until they are needed. Thus, not only does the shared folder overwhelm the recipient’s drive space, but each recipient has the ability to selectively download only those files they need to access. Moreover, because no files are automatically downloaded to the recipient’s computer at the time of sharing, for each such file that a recipient wishes to download, the recipient is guaranteed to access the most up-to-date version of the file.

124. In its Institution Decision, the Board discounts these features of the challenged claims as relating only to now-disclaimed claims 1 and 7, and not claim 17. (Paper 12 at 21; *see also id.* at 35, 39 n.12, 43.) But these features—which are embodied in Dropbox’s Smart Sync functionality—are present in claim 17 as well.

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For example, the chart below shows how claims 1, 7, and 17 are all directed to

using code to create a representation of the at least one folder whose file contents
are stored remotely and are not communicated to the user till the user initiates the
communication:

Claim 1	Claim 7	Claim 17
1[h]: . . . cause, utilizing code configured to be stored on a storage at the second node and further configured to cooperate with a file explorer interface, creation of a representation of the at least one folder in a location among one or more folders on the file explorer interface, where the storage at the second node does not store the at least one file when the creation of the representation of the at least one folder is caused; . . . 1[j]: in response to detection of the indication to open the at least one file in the at least one folder, cause retrieval of the at least one file via the at least one network for permitting display of the at least one file at the second node.	7[f]: . . . cause, utilizing code configured to be stored on a storage at the second node and further configured to cooperate with a file explorer interface of a client-based file explorer application, creation of a representation of the at least one data object in a location among one or more folders on the file explorer interface, where the storage at the second node does not store any file in the at least one data object when the creation of the representation of the at least one data object is caused.	17[d]: . . . for permitting avoidance of at least one file from being communicated to and stored at the second node until an initiation of the communication of the at least one file by a user of the second node is detected and the communication commences via at least one server that stores the at least one file, . . . 17[g]: . . . causing, at the second node, receipt of code for storage at the second node and cooperation with a file explorer interface of a client-based file explorer application, for being utilized to: cause creation of a second representation of the at least one folder, in a location among one or more folders, that is stored at the second node and that is displayable via the file explorer interface of the client-based file explorer application.

125. The Board also stated that it expected to see “a detailed comparison of Smart Sync with the challenged claims.” (Paper 12 at 21.) Patent Owner attaches this comparison here as Exhibit 2049, at 133-40.

126. Moreover, the jury verdict of non-infringement and invalidity of “substantially similar” patents in the Dropbox Litigation—though not issue-preclusive here—nonetheless supports a finding of a nexus between Smart Sync and the challenged claims. For non-infringement, the jury based its verdict on only one claim element—“HTML-equipped code”—which is not recited by any of the challenged claims. (EX2048 at 1375–81.) And on invalidity, Dropbox admitted that at least as of 2017, its system included all the elements of the then-asserted claims. (EX2048 at 1388.)

B. Commercial Success

127. Dropbox has achieved significant commercial success as a direct result of incorporating the unique characteristics of the claimed inventions into its products, specifically through incorporating the Smart Sync functionality. The widespread adoption and commercial success of Smart Sync as a core Dropbox feature therefore demonstrates the commercial success of the claimed inventions of the '520 patent. (EX2012-2025.)

C. Industry Praise

128. Smart Sync was hailed as a game-changer that solved the problem of limited local storage space while still providing access to all files in the cloud. (EX2012; EX2019.) This on-demand cloud storage solution was described as an “industry first” cross-platform capability. (EX2012; EX2019.)

129. Tech journalists lauded Smart Sync as a smart and innovative approach that made cloud storage more seamless and user-friendly. (EX2019; EX2020; EX2025.) It eliminated the need to constantly juggle which files to sync locally and which to leave in the cloud. By providing visibility and access to entire cloud file repositories from the desktop, Smart Sync streamlined cloud-based collaboration for teams. (EX2012; EX2014.) Indeed, according to another article, “Smart Sync is very much in the spirit of the original Dropbox: It lets users keep their old habits and skills while breaking down boundaries between local and network, what’s ‘here’ and what’s ‘in the cloud.’ It may not *feel* like a revolution. But it does make you want to start using it right now.” (EX2015.)

130. The launch of Smart Sync was seen as part of Dropbox’s strategic pivot to focus more on enterprise/business use cases and compete with platforms like Microsoft SharePoint and Google Drive. (EX2019; EX2020.) Analysts

viewed it as a significant step in Dropbox's evolution from a consumer cloud storage service to an enterprise software company. (EX2019.)

D. Long Felt Need

131. There was a long felt but unmet need for the functionality recited by the claimed inventions of the '520 patent. (EX2017; EX2022–EX2025.) For example, as described above, prior art systems suffered under a number of functional and technical limitations compared to the benefits enabled by the claimed inventions.

132. Dropbox acknowledges the limitations of such prior art systems when it notes that “[i]t can be a hassle sharing large files like photos and videos, especially from a mobile device.” (EX2021.) Dropbox itself suggests that users can “skip the hassle” by using Dropbox. (*Id.*) But the “hassle” referenced by Dropbox is precisely the problem solved by the claimed inventions, as set forth above.

133. Specifically, Dropbox stated that Smart Sync solves “a major issue our users have asked us to solve,” namely, that “[t]he amount of information being created and shared has exploded, but most people still work on devices with limited storage capacity.” (EX2013.) Dropbox explained that the design of Smart Sync was necessitated by the fact that “the tools that many rely on to access their

data—traditional ones like corporate file servers (shared network drives) and newer, browser-based solutions—aren’t suited to the way modern teams work.”

(*Id.*) Thus, Dropbox believed, “Project Infinite [Smart Sync] will change the way teams store and access data.” (*Id.*) Indeed, Smart Sync has been lauded as “a great innovation for Dropbox, as it removes two big pain points of the service.” (EX2025.)

134. Additionally, after the date of invention for the asserted claims, companies such as Amazon, Microsoft, Google, Box, and others began implementing the specific features covered by the challenged claims and used by Dropbox. (EX2027–EX2044.) Therefore, the long felt but unmet need for the inventions of the ’520 patent demonstrates that the challenged claims were nonobvious.

E. Industry Skepticism and Failure of Others

135. There was skepticism concerning Dropbox’s attempts to implement the claimed features into its products. Dropbox itself recognized the challenges in implementing functionality such as Smart Sync. (EX2017–2018; EX2022.) Dropbox advised others against attempting to implement this functionality, noting that “in many environments it would [be] a terrible idea.” (EX2022.)

136. The difficulty Dropbox acknowledged facing in implementing Smart Sync and the skepticism Dropbox demonstrated with regard to the suitability of implementing it for others in the industry further demonstrates that the challenged claims were nonobvious.

F. Unexpected Results

137. Dropbox acknowledges that the “rewrite” of its sync engine was a massive undertaking lasting over four years and “really hard.” (EX2022.) Indeed, it admits that “in many environments it would have been a terrible idea.” (*Id.*) Part of the complexity, Dropbox states, arises from the fact that “Dropbox has hundreds of billions of files, trillions of file revisions, and exabytes of customer data. Users access their files across hundreds of millions of devices, all networked in an enormous distributed system.” (*Id.*) Nevertheless, Dropbox set out to rewrite the sync engine because the previously existing sync engine “had fundamental issues with its data model that only showed up at scale.” (*Id.*)

138. Dropbox’s implementation of Smart Sync and therefore the claimed inventions therefore yielded greater than expected results, transforming Dropbox’s sync engine’s functionality from its sandy and unreliable foundations into the commercial success of Smart Sync described above. The unexpected results

Dropbox obtained from adopting the functionality in the challenged claims supports the conclusion that the claims were nonobvious.

X. RESERVATION OF RIGHTS

139. My opinions are based upon the information that I have considered to date. I reserve the right, however, to supplement my opinions in the future to respond to any arguments raised by Petitioner and to consider new information that becomes available to me.

140. I declare under the penalty of perjury that all statements made in this Declaration are true and correct.

By: 
Dr. Michael Smith