

Filed: April 19, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.

Petitioner,

v.

SPACETIME3D, INC.

Patent Owner

Case IPR2023-00344

U.S. Patent No. 9,696,868

**PATENT OWNER'S PRELIMINARY RESPONSE
TO PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,696,868**

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Exhibit No.	Description
2001	Declaration of E. Eddie Bakhsh
2002	Provisional Patent Application (Serial No. 60/717,019)
2003	Prosecution File History of U.S. Patent No. 7,735,018
2004	Prosecution File History of U.S. Patent No. 8,881,048
2005	Prosecution File History of U.S. Patent No. 9,304,654
2006	U.S. Patent Publication No. 2003/0164827 (Gottesman et al.)
2007	U.S. Patent No. 6,725,427 (Freeman et al.)
2008	U.S. Patent No. 6,768,999 (Prager et al.)
2009	U.S. Patent Publication No. 2002/0033848 (Sciammarella et al.)
2010	U.S. Patent Publication No. 2001/0050687 (Iida et al.)
2011	U.S. Patent Publication No. 2003/0179231 (Kamiwada et al.)
2012	Claim Construction Order (Case 2:19-cv-00372-JRG) (12/07/2020)
2013	Claim Construction Order (Case 6:22-cv-00149-ADA) (03/19/2023)
2014	Order Denying Stay (Case 6:22-cv-00149-ADA) (02/02/2023)
2015	Order 60-Day Stay (Case 6:22-cv-00149-ADA) (03/08/2023)

I. INTRODUCTION

The challenged claims of U.S. Patent No. 9,696,868 (“the ‘868 Patent,” Ex. 1001) relate to a novel graphical user interface (“GUI”) that is particularly useful in mobile computing devices having small displays, limited battery power, and reduced processing.

In general, the ‘868 Patent allows a user to easily switch from one application to another and to interact with individual applications by (1) presenting images of *open* applications (including application-specific data) in three-dimensional (“3D”) space, where the images are presented in an order that the applications were opened or interacted with (*e.g.*, first one in the foreground; second one in the background, behind the first one; third one in the background, behind the second one), (2) switching to a two-dimensional (“2D”) space once an image in the 3D space has been interacted with, and (3) presenting an active version of an application in 2D space, where the application (a) corresponds to the image interacted with in 3D space and (b) “replaces” the images in 3D space, where the application can be interacted with to modify the corresponding application-specific data.

For example, if the active application (in 2D space) is a web browser and the application-specific data is a webpage, interacting with the web browser may include “clicking on” a link embedded within the webpage, *e.g.*, to acquire a different webpage. The modified application-specific data (*e.g.*, a different webpage) can then be used to update both the application (*e.g.*, web browser) in 2D space and the corresponding image in 3D space. It is this toggling back-and-forth between 3D space and 2D space, and between a plurality of inactive images of

applications and individual active applications, that is novel. The invention does this to enable ease of presenting and interacting with application-specific data (*e.g.*, HTML documents, etc.) in 2D space and the fact that *images* of applications are easier to manipulate, skew, etc. in 3D space than the actual, *active* applications themselves. As discussed above, this is particularly advantageous in mobile devices having small displays and limited battery and processing power.

At the outset, the Board should deny institution under 35 U.S.C. § 314(a) because Petitioner is also asserting substantially similar references and arguments in a parallel district court action. *See SpaceTime3D, Inc. v. Apple, Inc.*, No. 6:22-cv-00149 (W.D. Tex.) (“the Litigation”). If instituted, this proceeding will conclude in July 2024, roughly seven months after trial, and will consume over a year of the Board’s resources dealing with the same issues that will be tried in District Court.

If the Board does not exercise its discretion under Section 314(a), the Board should dismiss the Petition on the merits because the prior art (*e.g.*, Anthony, Hanggie, Matthews, and Robertson) fails to disclose critical features of the claimed inventions. For example, the cited references do not disclose a GUI that toggles back-and-forth between images of applications in 3D space and active applications in 2D space, where the application in 2D space *replaces* the images in 3D space and vice versa. Instead, the prior art presents all information (including active applications) in 3D space.

Not only do these references fail to disclose key features of the claimed invention, but the references themselves, and Petitioner’s arguments regarding the same, are virtually identical to prior art cited and arguments made during

prosecution of the claimed inventions. The Examiner only allowed the claims after amendments were made to distinguish the claims over the prior art. Rehashing arguments and prior art rejected during prosecution can only result in the Petition being denied, as there is no “reasonable likelihood that the petitioner would prevail with respect to at least one of the claims challenged in the petition.” 35 U.S.C. § 314.

II. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 314(a)

Trial between Petitioner and SpaceTime3D in the Litigation is scheduled for later this year. *See* APPLE1024 (Scheduling Order) and EX2015 (extending deadlines after March 2023 by 60 days). Petitioner waited over ten months after commencement of the Litigation to file this IPR petition. By the time the Board decides whether to institute the petition in July 2023, the District Court will be less than five months away from the scheduled trial. In view of recent precedential guidance, the Board should deny institution of this proceeding.

Under section 314(a), the Board “is permitted, but never compelled, to institute an IPR proceeding.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016); *see also* 35 U.S.C. § 314(a). The Board may exercise this discretion when the parties have a parallel district court proceeding scheduled to finish before the Board’s deadline to issue a final written decision in an instituted proceeding. *Intel Corp. v. VLSI Tech. LLC*, IPR2019-01192, Paper 15 at 11 (PTAB Jan. 9, 2020) (denying institution “to minimize the duplication of work by two tribunals to resolve the same issue”).

The Board considers six factors in determining whether “to deny institution in view of an earlier trial date in the parallel proceeding.” *Apple, Inc. v. Fintiv*,

Inc., IPR2020-00019, Paper 11 at 5-6 (PTAB Mar. 20, 2020) (precedential). As discussed below, all six factors weigh heavily in favor of denying institution.

A. *Finitiv* Factor 1: The District Court Litigation is Not Stayed

Institution of an *inter partes* review while a parallel district court proceeding is “nearing its final stages” would be inconsistent with “an objective of the AIA . . . to provide an effective and efficient alternative to district court litigation.” *General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 16-17 (PTAB Sept. 6, 2017).

This factor weighs in favor of denying institution. Although Petitioner requested a stay of the district court proceeding in November 2022, that request was denied (EX2014). As such, *the Litigation is not stayed*. Petitioner argues that “[t]he parties’ venue dispute has slowed the pace of the Litigation and increased the likelihood that the Board will be first to review the ‘868 Patent against prior art.” Pet. at 95. While it is true that the court extended deadlines after March 2023 by 60 days to deal with Petitioner’s pending Motion for Inter-District Transfer (EX2015), the Scheduling Order specifically provides that “[a]ll deadlines follow the original *Markman* hearing date and do not change if the Court delays the *Markman* hearing.” APPLE1024. Thus, in light of the Scheduling Order (APPLE1025 as modified by EX2015), trial should begin late December 2023—seven months before the Board issues its final written decision.

B. *Finitiv* Factor 2: The Court’s Trial Date is Roughly Eight Months Away

“If the court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny

institution under *NHK*.” *Apple*, IPR2020-00019, Paper 11 at 9 (PTAB Mar. 20, 2020).

This factor weighs heavily in favor of denying institution. Trial is scheduled to commence shortly after December 4, 2023, which is *five months after* the statutory deadline for *the Board's institution decision*. *NHK Spring Co. v. Intriplex Techs. Inc.*, IPR2018-00752, Paper 8 at 19-21 (PTAB Sept. 12, 2018) (institution denied due to district court trial scheduled six months from the date of the Board's institution decision).

Petitioner argues that a trial date has not yet been set, and “there is no reason to expect this Litigation to follow the median path given Petitioner's pending transfer and stay motions.” Pet. at 96. First, while the exact date for jury selection is TBD, joint pretrial submissions (*e.g.*, jury instructions, witness lists, etc.) are due by December 4, 2023. *See, e.g.*, APPLE1024 as modified by EX2015. Thus, trial should commence shortly thereafter. Second, the Court has denied Petitioner's Motion to Stay. EX2014. Petitioner argues that “because a significant portion of the case schedule is linked to the date of the Markman hearing ... it is likely that other deadlines will also get delayed.” Pet. at 96. This is incorrect. As discussed above, the court has made it clear that certain delays (*e.g.*, those pertaining to *Markman*) will not delay the other dates. APPLE1024.

C. *Finitiv* Factor 3: The Court and the Parties Have Made Significant Investment in the Parallel Proceedings

“This investment factor is related to the trial date factor, in that more work completed by the parties and the court in the parallel proceeding tends to support the arguments that the parallel proceeding is more advanced, a stay may be less

likely, and institution would lead to duplicative costs.” *Apple*, IPR2020-00019, Paper 11 at 10 (PTAB Mar. 20, 2020).

In the parallel proceeding, a jury trial is expected to commence late December 2023—roughly five months from the date of the Board’s institution decision. *See Cisco Systems, Inc. v. Ramot at Tel Aviv Univ. Ltd.*, IPR2020-00123, Paper 14 (PTAB May 15, 2020) (denying institution because trial was seven months away).

The Court has already reviewed all the briefings related to claim construction, held a *Markman* hearing, and issued a Final Claim Construction Order (EX2012), and the parties have already exchanged Final Infringement and Invalidity Contentions. As a matter of law this indicates a substantial investment of the Court’s and the parties’ resources into the Litigation. *See Next Caller, Inc. v. TRUSTID, Inc.*, IPR2019-00963, Paper 8 at 13 (PTAB Oct. 28, 2019) (district court’s issuance of a claim construction order favors denial); *E-One Inc. v. Oshkosh Corp.*, IPR2019-00161, Paper 16 at 6-9 (PTAB May 15, 2019) (same); *Thermo Fisher Scientific, Inc. v. Regents of the Univ. of Cal.*, IPR2018-01370, Paper 11 at 26 (PTAB Feb. 7, 2019) (same); *see also NXP USA, Inc. v. IMPINJ, Inc.*, IPR2021-01556, Paper 10 at 8-9 (PTAB Apr. 21, 2022).

SpaceTime3D has also expended significant resources in prosecuting this Litigation. With expert discovery scheduled to conclude in October 2023, SpaceTime3D has retained experts to review source code, engaged in document discovery, and took and defended numerous depositions. Thus, Petitioner incorrectly states that “the parties and the District Court have yet to expend significant resources.” Pet. at 96.

D. *Finitiv* Factor 4: There is Substantial Overlap Between the Issues Raised in the Petition and in the Parallel Proceedings

“[I]f the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, this fact has favored denial.” *Apple*, IPR2020-00019, Paper 11 at 12 (PTAB Mar. 20, 2020). The claims at issue in this proceeding are identical to the claims at issue in the Litigation.

E. *Finitiv* Factor 5: The Petitioner and the Defendants in the Parallel Proceedings are the Same Party

Apple Inc. is both Petitioner and the defendant in the Litigation. Accordingly, this factor weighs in favor of denying institution.

F. *Finitiv* Factor 6: Other Circumstances That Impact the Board's Exercise of Discretion, Including the Merits

“[I]f the merits of the grounds raised in the petition are a close[] call, then that fact has favored denying institution when other factors favoring denial are present.” *Apple*, IPR2020-00019, Paper 11 at 15 (PTAB Mar. 20, 2020). As discussed in Section VI, the serious weaknesses on the merits of the Petition warrant no institution of trial. *See E-One*, IPR2019-00162, Paper 16 at 13-20 (weakness on the merits weighed heavily in favor of denying institution).

In particular, Petitioner *fails to identify a single reference that discloses the claimed “replacing” feature of the independent claims*. For example, element [1d-2] requires “replacing said plurality of images within said 3D immersive with one of said ... plurality of applications within said 2D space in response to said selection.” With respect to this element, Petitioner's *only* argument is that a “maximized” window “occupies all or almost all parts of the computer display”

(Pet. at 56) and that “a ‘maximized’ 2D window would then replace the display of ... any windows within the timeline” (Pet. at 57).

First, maximizing a window does not result in the window (itself) being replaced, as the claims require, but merely enlarging the window. *See, e.g.*, Pet. at 26 (“[A] POSITA would have understood and found it obvious that a maximized window would occupy all, or almost all, parts of a display.”). Second, the claims do not require replacing *a window* with *a window*, as Petitioner argues, but “replacing *said plurality of images* within said 3D immersive space with *one of said ... plurality of applications* within said 2D space.” APPLE1001 at 39:40-44. Maximizing a window merely enlarges the window—it does not convert it from an image to an active application. Thus, the merits of the Petition are far from compelling, as Petitioner contends.

Petitioner argues that “the examiner’s failure to consider obviousness of the Challenged Claims over uncited references such as Hanggie, Anthony, Matthews, and Robertson constitutes a material error,” and that this factor, along with the *Advanced Bionics* framework, “strongly favors institution.” Pet. at 94 and 98.

In *Advanced Bionics*, the Board set forth a two-part test for discretionary denial under 35 U.S.C. § 325(d): (1) whether the same or substantially the same art or arguments were previously presented to the Office; and (2) whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *Advanced Bionics LLC v. MED-EL Elektromedizinische Gerate GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential).

As discussed below in Section III(B), the Examiner issued several office

actions during prosecution of the claimed inventions, rejecting the claims over *numerous* prior art references describing *several different types of 3D GUIs*. After amending the claims to provide for switching back-and-forth between a plurality of images in 3D space and an active application in 2D space, where the active application “replaces” the images, the Examiner agreed to allow the claims. *See, e.g.,* EX2004 at 17-31 and EX2005 at 6-19.

Petitioner argues the prior art references cited in the Petition “materially differ from those considered by the Examiner during prosecution.” Pet. at 98. As discussed in detail below, Anthony and Hanggie (the only references cited against the independent claims) are virtually identical to prior art cited by the Examiner during prosecution. *See* Section VI(A). This, along with the fact that Petitioner has failed to identify any error in the Examiner’s evaluation of the cited prior art, supports denying institution under both the *Advanced Bionic* and *Apple* factors.

III. BACKGROUND OF U.S. PATENT NO. 9,696,868

A. Description Of The Patented Invention

The ‘868 Patent provides “an improved three-dimensional graphical user interface.” According to the specification, “[b]ecause the 3D GUI creates the illusion of infinite space in 3D, it can create a visual history of the user’s computing session, whereby the user can visit past visual computing events (or a snapshot in time) by simply navigating to previously recorded states or viewpoints.” APPLE1001 at 5:18-22.

The specification describes several ways of presenting and interacting with information in 3D space. The claims of the ‘868 Patent focus on one way, where images of applications are presented in 3D space, and individual applications are

interacted with, one at a time, in 2D space.

In particular, Claim 1 of the '868 Patent provides a method comprising (1) receiving a plurality of inputs from a user, (2) opening a plurality of applications in response to the inputs (one at a time, in 2D space), where each application (first, second, and third) is configured to generate an object having application-specific data, display the object on a display device, and allow the user to modify the application-specific data by interacting with the object. The method then allows the user to switch from one application to another by (3) generating images of each object having application-specific data, and (4) displaying the plurality of images in 3D space (the GUI switches from 2D to 3D space, “*replacing all objects ... visible in said 2D space*”), where they are displayed in an order that they were last opened or interacted with, with the first object being displayed in the foreground, the second object being displayed in the background behind the first object, and so forth. APPLE1001 at 38:40 – 39:50 (Claim 1).

The user is allowed to scroll through the images in the “3D *immersive space*,” where (a) moving one image results in movement of all images and (b) deleting an image results in the next image being moved to a location in 3D space previously occupied by the deleted image. *Id.* When the user interacts with an image, a corresponding application is then presented to the user in 2D space (*i.e.*, the GUI switches back from 3D space to 2D space), where the application is *active* and *replaces* the plurality of images in 3D space. *Id.* By interacting with the active application in 2D space, the corresponding application-specific data is modified accordingly. *Id.*

Not only does this allow a user to interact with individual applications in 2D

space, but by presenting images of open applications in 3D space, and doing so in an order based on a last time that the user opened or interacted with each application, the claimed invention provides “a visual chronological history of the user’s computing session,” where more recently opened or interacted with applications are displayed in front of others. APPLE1001 at 5:18-22.

The claims of the ‘868 Patent are particularly advantageous in ultra-mobile personal computer (“UMPC”) devices. By interacting with individual, active applications in 2D space and navigating through images of applications in 3D space, which is a non-conventional technique that exploits the fact that images of applications can be more easily manipulated in 3D space than active applications, the claimed invention improves the functionality of the UMPC devices (*e.g.*, smartphones) by requiring less power, minimal (or reduced) processing, and can operate on smaller screen sizes. EX2001 at [9-10].

B. Prosecution History Of The ‘868 Patent

During prosecution of the claimed inventions, the Examiner considered and cited several prior art references that are virtually identical to the prior art relied upon by Petitioner. To better understand the ‘868 Patent and its prosecution, a brief description of the parent applications will first be discussed. The ‘868 Patent is a continuation of U.S. Patent No. 9,304,654 (the ‘654 Patent”), which is a continuation of U.S. Patent No. 8,881,048 (“the ‘048 Patent”), which is a continuation of U.S. Patent No. 7,735,018 (“the ‘018 Patent”), which claims priority to provisional patent application, Serial No. 60/717,019 (“Provisional”). The Provisional discloses a novel 3D GUI that provides “a visual history of the user’s computing session.” EX2002 at 4.

Not only is the 3D space immersive (*e.g.*, allowing the user to move forward and backward), but it must also retain “full functionality and interactivity.” *Id.* It should do so in a way that “eliminates the need to constantly open and close programs or hide and reveal them each time [applications] are needed, tak[ing] advantage of dormant computing time, reduc[ing] mouse-clicks and/or offer[ing] a more natural alternative to accessing programs and documents than the traditional folders-within-folders storage system.” *Id.* at 3.

The ‘868 patent solves shortcomings associated with prior art GUIs via a “graphical user interface that uses the two-dimensional (‘2D’) display of a user’s computer to display three-dimensional (‘3D’) objects in a simulated real-time 3D immersive Cartesian space.” APPLE1001 at 2:57-61. In one embodiment, this involves capturing images of webpages, applications, etc., and presenting those images in 3D space. *A critical feature of the invention, however, is not so much presenting 2D graphics in 3D space, but doing so while maintaining “full functionality and interactivity.”* *Id.* at 22:58-65 (emphasis added).

For example, “[w]ebpages, unlike pictures that the end user simply view, require interactivity to function properly in a virtual space.” *Id.* at 23:50-61. Thus, “a special system must be created to insure [sic] that the end user can interact with the mapped object in a 3D virtual space with the same responsiveness of input and output that one would find in a 2D desktop.” *Id.*

The specification discloses a number of ways to achieve this. In a first embodiment, programmatic control (along with 2D graphical output) can be mapped onto the object in 3D space. *See, e.g., id.* at 23:61-24:11. This embodiment, where everything is done in 3D space, was the focus of the ‘018

Patent. During prosecution of the '018 Patent, in a first Office Action, the Examiner rejected the claims under 35 U.S.C. § 103(a) for being unpatentable over Gottesman et al. (U.S. Publication No. 2003/0164827) ("Gottesman") and Freeman et al. (U.S. Patent 6,725,427) ("Freeman"). EX2003 at 87-123.

Gottesman provides "[a] system and method for presenting search and/or data query results within a virtual three-dimensional environment." EX2006 at Abstract. The 3D environment may include a plurality of containers (*see* Figure 1A at 220A and 220B, reproduced below), where "[each] container may be rendered in the virtual three-dimensional environment." *Id.* at [0031].

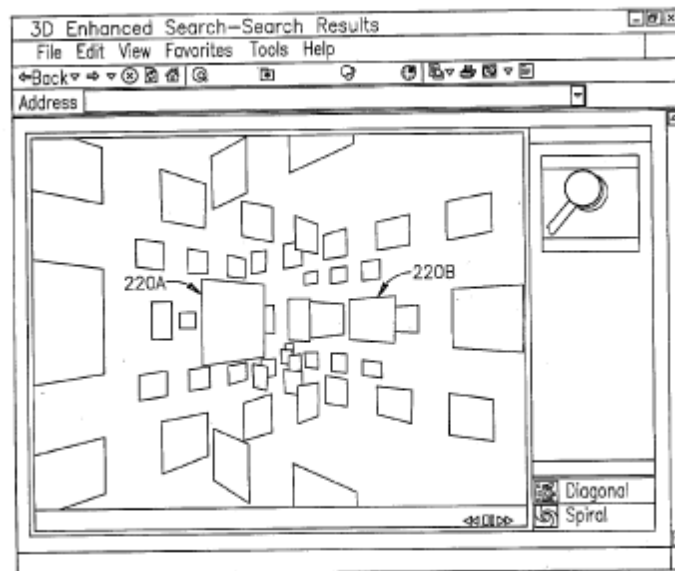


Figure 1A of Gottesman

With respect to what is actually presented in 3D space, Gottesman provides that "[a] container may have an associated message or picture that is mapped onto the surface of the container." *Id.* at [0034]; *see also id.* at [0048] ("each container

is provided with an image, where each image is mapped as a display parameter on at least one data container”). Gottesman also provides that each container may have an associated function (*id.* at [0033]), which may include at least one hyperlink (*id.*). *See also id.* at [0043].

A different three-dimensional (“3D”) graphical user interface (“GUI”) is disclosed in Freeman, where a “stream” of documents are presented in 3D space. *See, e.g.*, Figure 1 (reproduced below). According to Freeman, the documents in the stream are “designed to work with conventional World Wide Web browsers.” EX2007 at 13:22-29. “The effects of opening a Web address document in a stream is that the web browser comes to the foreground and attempts to connected to the Web address.” *Id.* at 13:39-48.

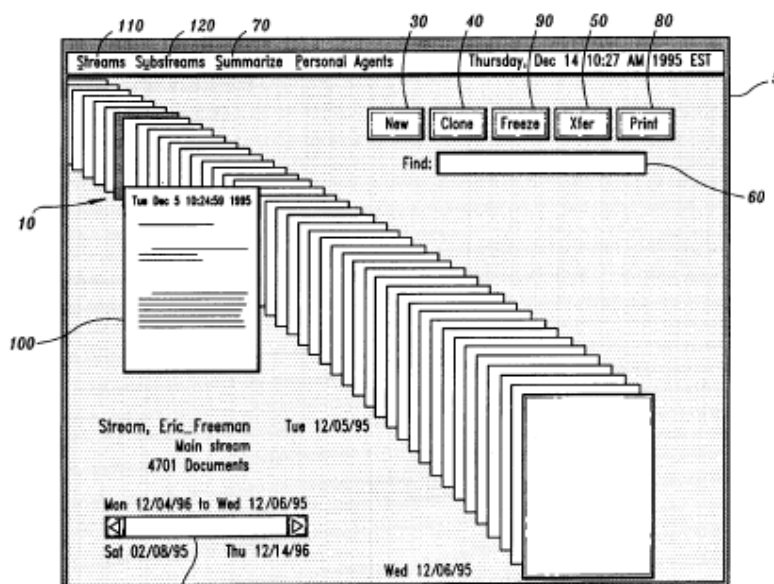


Figure 1 of Freeman

The documents in the stream are “graphical representations” of the actual

document, with the document on top of the stream (*i.e.*, the foremost document) being “live” or “active,” so that it can be interacted with as traditionally done on a 2D desktop. *See, e.g., id.* at 5:48-56.

To overcome these rejections, SpaceTime3D amended the claims to capture first and second images of the computing output and texture them onto first and second objects in 3D space. EX2003 at 52-80. The claims were further amended to provide that interacting on the first image resulted in “mapping the interaction” to determine a link associated with additional information. *Id.* The additional information is then captured as a third image and textured onto the first object, where the third image replaces the first image in 3D space. *Id.* ***This allows the user to interact with images of webpages while remaining in 3D space.*** SpaceTime3D argues that this “mapping” feature is not disclosed in the prior art. The Examiner agreed and allowed the claims over the prior art. *Id.* at 18-33.

Before the ‘018 Patent issued, SpaceTime3D filed a continuation, which resulted in the ‘048 Patent. The originally filed claims were similar to the claims that were originally filed in the ‘018 Patent, before the “mapping” feature was added. EX2004 at 327-340. In first, second, and third Office Actions, the Examiner rejected the claims over Gottesman and Prager et al. (U.S. Patent No. 6,768,999) (“Prager”). *Id.* at 69-87, 124-143, and 174-192.

Prager is similar to Freeman in that it discloses a 3D space that includes “a time-ordered stream” where “glance views” can be used to display additional information on documents in the stream. EX2008 at Abstract. This can be seen in Figure 1 (reproduced below).

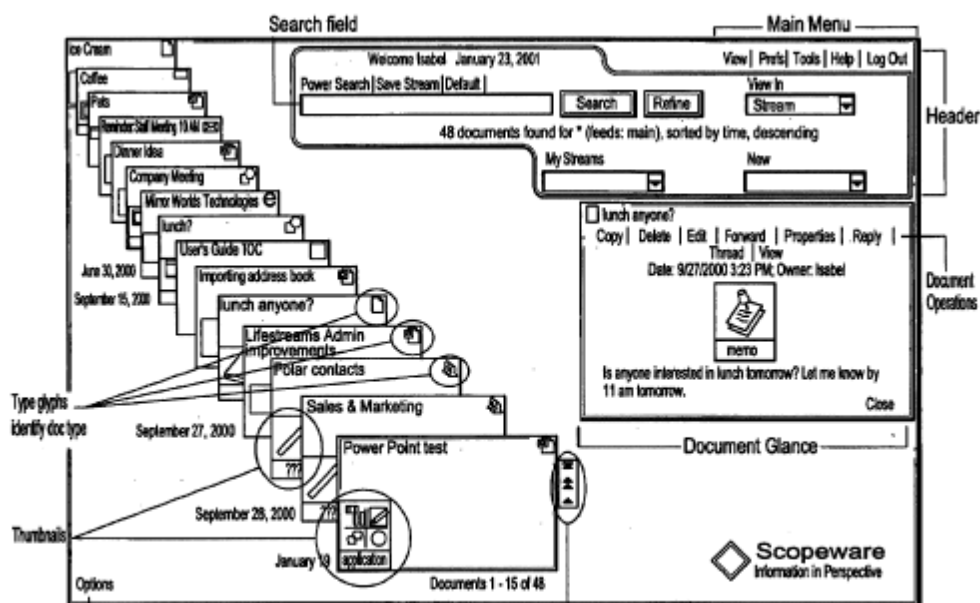


Figure 1 of Prager

Prager provides that “[i]f the user has clicked on a browse card to fix the glance view as a stationary window, the user can then select any of the visible and available document operations.” *Id.* at 7:43–8:8. If a “document operation” is selected (*e.g.*, Copy, Delete, etc.), “the system executes the selected operation (command) and the display reflects this at S511.” *Id.* Thus, the 3D space includes both a stream having a plurality of “browser cards” and a “document glance” for any selected “browser card,” where the “document glance” can be interacted with to alter the contents of the document.

In an Amendment dated June 27, 2014, SpaceTime3D canceled the pending claims (Claims 1-66), and added new Claims 67-86. EX2004 at 52-62. While the new claims were similar to those allowed in the ‘018 Patent, in that images of webpages are presented to the user in a 3D space, and that the user can interact with an image of a webpage to receive additional information, the interaction is not

accomplished via a “mapping” step in 3D space. Instead, interacting with an image results in the plurality of images in 3D space being “replaced” by a corresponding website in 2D space, where the corresponding website in 2D space can be interacted with to acquire (and display) additional information. In other words, instead of remaining in 3D space with a plurality of images, *the GUI switches back-and-forth between a plurality of images in 3D space and an active (or “live”) window of a corresponding website in 2D space.*

In the Amendment, SpaceTime3D argued that “Claim 67 is directed toward a method of interacting with a webpage (e.g., a two-dimensional webpage) that is being displayed in a three-dimensional space.” *Id.* This is accomplished by “rendering a first webpage, capturing an image of the first webpage, and texturing the image on a first object so that it can be displayed (with other objects) in 3D space. The user can then scroll through the plurality of objects that are being displayed in 3D space. If the user interacts with the first object (i.e., the image of the first webpage), then a windowed version of the first webpage is presented to the user, thereby allowing the user to navigate the webpage in a more traditional fashion.” *Id.*

SpaceTime3D then argued that these features are not disclosed in or suggested by the cited prior art. In other words, instead of staying in the 3D space (like the ‘018 patent and the cited prior art), the display switches back-and-forth between active webpages in 2D space and images of webpages in 3D space. This toggling between two different spaces is unconventional, counterintuitive, and the opposite of what is taught in the prior art. *See* EX2001 at [10] and [47-53].

The Examiner agreed and issued a Notice of Allowance. EX2004 at 17-31.

In doing so, the Examiner entered an Examiner's Amendment, amending the last independent Claim 82 to provide the step of "replacing the first and second images within the 3D space with a window within a two-dimensional (2D) space in response to receiving the interaction, wherein the window includes the first webpage," *indicating that the "replacing" step (from 3D to 2D), which was already recited in the other independent claims, is critical to the allowed claims.* *Id.*

Before the '048 Patent issued, SpaceTime3D filed a continuation, which resulted in the '654 Patent. Before a first Office Action could issue, SpaceTime3D filed a Preliminary Amendment, cancelling the originally filed claims and adding new Claims 67-86. EX2005 at 211-225. Claims 67-86 were similar to the claims that were allowed in the '048 Patent, with the exception of (1) reciting "applications" instead of "webpages," where each application is configured to generate "an object" having "application-specific data," and (2) the images are presented as "a timeline," with the images being presented in chronological order in the 3D space. *Id.*

In the Remarks section of the Preliminary Amendment, SpaceTime3D stated that "[w]hile the pending claims are different in scope than those allowed in the Parent Application (*i.e.*, Serial No. 12/751,879) [the '048 Patent], the[y] are similar in that they include features that were considered allowable subject matter by the Examiner in the Parent Application. For this reason, the Applicant believes that the pending claims (*i.e.*, Claims 67-88) [sic] are in condition for allowance." *Id.*

In response, the Examiner contacted SpaceTime3D's counsel, and suggested amendments that would place the claims in condition for allowance. *Id.* at 10-19.

Those amendments, which were entered by way of an Examiner's Amendment, provided that the images were presented "in a three-dimensional space," and that, in response to interacting with an image in 3D space, "replacing said plurality of images within said three-dimensional space with one of said first, second, and third objects corresponding to said one of said plurality of application within a two-dimensional space in response to said first interaction, receiving a second interaction by said user with said one of said first, second, and third objects, within said two-dimensional space." *Id.*

In allowing the claims, the Examiner stated that "[t]he following is an examiner's statement of reasons for allowance: The present invention teaches converting outputs of a plurality of applications into a plurality of images displayed in a three-dimensional space, ***replacing the plurality of images with the output of the first application in a two-dimensional space*** in response to the first user interaction with the first image, and modifying the first application-specific data in response to the second user interaction with the output." *Id.* (emphasis added). ***This together with the Examiner's amendment emphasizes, yet again, the importance of the "replacing" step in the claimed invention.***

Before the '654 Patent issued, SpaceTime3D filed a continuation, which resulted in the '868 Patent. Before a first Office Action could issue, SpaceTime3D filed a Preliminary Amendment, cancelling the originally filed claims and adding new Claims 21-40. APPLE1002 at 68-80. Claims 21-40 were similar to the claims that were allowed in the '654 Patent, with the exception of the 3D space being "immersive" and (1) allowing the user to move the images, where movement of one image results in movement of all images, and continued movement in one

direction results in the perception that one of the images has been moved off the display, and (2) allowing the user to delete an image, where deleting the second image results in the third image moving to where the second image was previously located. *Id.* In response, the Examiner issued a Notice of Allowance on June 1, 2017. *Id.* at 22-29.

Petitioner argues that “[t]he examiner never issued a rejection during the ‘868 Patent’s prosecution ... [and] did not involve negotiation between the applicant and the examiner regarding the teachings of the prior art.” Pet. at 93. As can be seen above, Ting Lee, the Examiner for the ‘018, ‘048, ‘654, and ‘868 Patents, issued several prior art rejections. It was only after years of prosecution, an in-person interview (EX2003 at 145-148), several telephonic interviews (EX2004 at 21 and EX2005 at 19), and several Examiner amendments (EX2004 at 18-31 and EX2005 at 6-19), that the ‘868 Patent was allowed. To suggest that the claims were not thoroughly vetted during prosecution and that there were no negotiations between applicant and the examiner is clearly not supported by the record.

C. Level Of Ordinary Skill In The Art

Petitioner argues that a POSITA at the time of the claimed invention would have a bachelor’s degree in electrical engineering, computer science, or a similar discipline and at least two years of experience working in the field of 2D and 3D graphical user interfaces or, in the alternative, additional years of experience working in the field of 2D and 3D GUIs. Pet. at 10. SpaceTime3D submits that at least the inventor of the ‘868 Patent, E. Eddie Bakhsh, is a POSITA, and reserves the right to further address this issue at a later point in time if necessary. Mr.

Bakhash's education and level of experience is provided in his declaration, filed herewith. EX2001 at [1-3].

IV. CLAIM CONSTRUCTION

Petitioner's claim construction arguments focus on three elements in the '868 Patent: "3D space," "2D space," and "whether the preamble of the independent claims of the '868 Patent are limiting." Pet. at 10-11.

A. "2D Space" and "3D Space"

The District Court in *SpaceTime3D, Inc. v. Samsung Elecs. Co., Ltd., et al.*, No. 2:19-cv-00372-JRG (E.D. Tex.) addressed these terms in its Markman Order, which issued on December 7, 2020. EX2012. The Court construed the term "3D space" to mean "a virtual space defined by a three-dimensional coordinate system [X, Y, and Z]." *Id.* at 19. The Court also construed the term "2D space" to mean "a finite graphical area defined by a two-dimensional coordinate system [only X and Y]." *Id.* at 7-19. Both Petitioner and Patent Owner request the Board to adopt these two constructions. Pet. at 9-10.

In its analysis rejecting Samsung's proposed construction, the Court stated that "[i]t is true that 'objects' may be displayed in the 3D space, but the term at issue is 'spaces,' and not the term 'objects.' Indeed, 'objects is a separately recited element in the claims." EX2012 at 16. "The Court agrees that a 3D space may be populated with an 'object,' but an 'object' does not define a 3D space. Instead, a 3D space is defined by the characteristic of the space. ... Accordingly, the Court rejects Defendants' constructions because they require both the 2D Terms and 3D Terms to include 'objects.'" *Id.* at 17. In other words, both 2D and 3D objects can be presented in 3D space. Both Petitioner and Patent Owner agree that these

constructions and the Court's attendant reasoning are correct. *Id.* at 7-19 and Pet. at 9-10.

B. "Preamble"

Petitioner states that the parties disagree as to whether the preamble of the independent claims are limiting. Pet. at 9-10. It then argues that, regardless, "[i]n this Petition, the prior art grounds address the preambles, to the extent they are found to be limiting." *Id.* Patent Owner submits that while this issue was contested during litigation, it does not believe that the Board needs to determine whether it is limiting, as the prior art cited by Petitioner is so thoroughly deficient that the issue is rendered irrelevant.

V. OVERVIEW OF PETITIONER'S ASSERTED GROUNDS AND REFERENCES

A. Anthony

In Grounds 1A and 2A, Petitioner relies on U.S. Patent Publication No. 2005/0091596 ("Anthony") (APPLE1007). As discussed above, during prosecution, the Examiner identified and discussed several prior art 3D GUIs where everything takes place in a simulated 3D space (*i.e.*, there is no switching back-and-forth between 2D and 3D space). This is exactly what is disclosed in Anthony.

As shown in Figure 4 (reproduced below), files or folders are presented in a "dynamic timeline" in a 3D environment, where the items are placed "in some logical order using an attribute shared by each of the items." *Id.* at [0011]. One item in the group (*e.g.*, a file or a folder) is designated by the user (*e.g.*, by clicking on it) as "a focal group" and "is displayed at a primary point of focus in the GUI."

Id.; see also *id.* at [0066] (“the focal group 509 may be placed in the front and center of the GUI view”). “The remainder of the groups are displayed on either side of the focal group based on their ordering ... such that ... [they] appear to be less prominent to the user than the focal group.” *Id.* at [0011] and [0012].

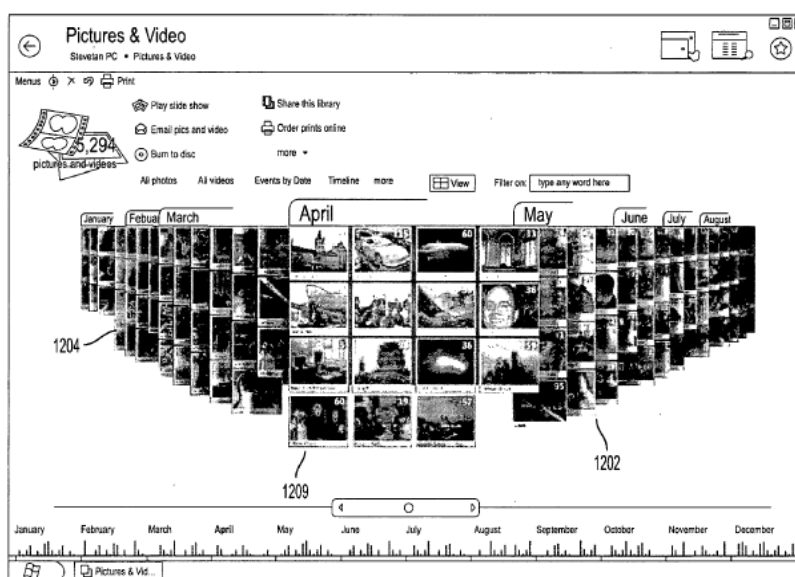


FIG. 4

In Figure 4, the focal group are digital pictures that were taken in April. “When the user selects a new focal group [e.g., May, as shown in Figure 12A], the system may initiate a series of steps to animate the process of changing focus from one group of icons to another.” *Id.* at [0059]. In other words, “the GUI is updated to reflect the view from the conceptual camera’s position.” *Id.* at [0060]. “[T]he conceptual camera provides for a ‘zooming’ effect that ***allows the focal group 509 to always remain fully visible in the foreground***, more prominently displayed, while ***the non-focal groups recede to the background***, less prominently displayed

on either side of the focal group, according to the ordering attribute.” *Id.* at [0050] (emphasis added).

As shown in Figure 4, *the dynamic timeline is three-dimensional and is presented in a 3D environment*. See, e.g., *id.* at [0043] (“[T]hree dimensional (3D) graphics technology may be used to provide the dynamic timeline view in a 3D environment.”). If the user double-clicks on the focal group, then the item is presented in the 3D environment, either by opening the item (e.g., if the item is a file) or presenting the item on a new timeline (e.g., if the item is a folder). See, e.g., *id.* at [0047]. Either way, the item is presented in 3D space. In fact, the only mention of 2D GUIs in Anthony is in the prior art, all of which are criticized. See, e.g., *id.* at Figures 2 and 3 and [0004-0008].

Also, the timeline in Anthony is *not for applications*, but *for files*. Anthony points out that with the advent of digital cameras, hundreds if not thousands of digital photograph images may be stored on a computer and that it can be very difficult to view, find and select a particular image. *Id.* at [0003-0004]. The solution in Anthony is to present the images (or folders containing images) in a “dynamic timeline,” where the items are arranged chronologically, or “using a date of creation or date of edit attribute as the ordering attribute.” *Id.* at [0042].

Thus, while Anthony may allow a user to quickly find a file from thousands of files, the claimed invention allows a user to quickly switch from one application to another, where each *application* is presented in the order in which it was last opened or used. While it is true that Anthony provides other ordering attributes, it is always the files that are arranged based on the files’ ordering attribute—not files that are arranged based on the applications’ ordering attribute. Arranging

applications based on “a date of creation or a date of edit” would be of little to no value to a user that is trying to locate a particular file. EX2001 at [31].

B. Hanggie

U.S. Patent Publication No. 2005/0088447 (“Hanggie”) (APPLE1006) describes a “3D compositing desktop window manager” for presenting content in a 3D space, including content that was originally configured for presentation in a 2D space. *Id.* at [0001]. Such content may include, for example, content for “Microsoft Windows® XP ... [which] employs the 2-dimensional Graphics Device Interface (GDI) graphics rendering engine to render the display.” *Id.* at [0008]. Hanggie *transforms* this content using a “3D compositing desktop windows manager” referred to as a “CDWM,” which “uses advanced textures, lighting, and 3D transformations” to present the content in a 3D environment. *Id.* at [0012] and [0025].

“In order to draw the window in 3D, the CDWM may define the window anatomy using various components, including a base content object and one or more child content objects.” *Id.* at [0057]. As shown in Figure 3 (reproduced below), [t]he frame or base content 303 of the window 301 may host child content including buttons 305 (e.g., used to restore, maximize, minimize, close the window, etc.), and indicative icon 307, scrollbars 309, menu bar 311, and window caption text 313.” *Id.* at [0058].

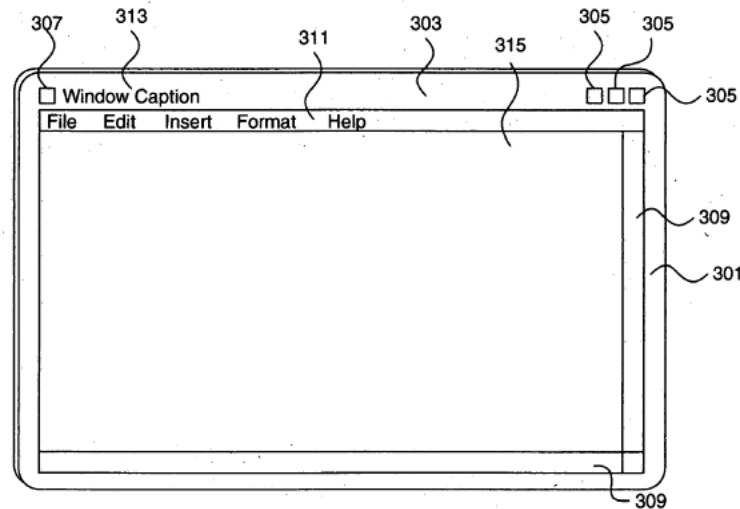


FIG. 3

Hanggie provides that both the window and its contents are active in 3D space. To this end, Hanggie provides:

The CDWM maps mouse hit-test points relative to application-defined, content-local, 3D coordinates, and delivers mouse event notifications to the application. ... Examples of system-managed content objects include the application indicative icon, frame buttons (e.g., minimize, restore, close), caption text, and certain menu bars. Application-managed content objects include those content object(s) to which the application renders its primary visual output, e.g., text by a word processor, numeric grid by a spreadsheet application, or images by a photo editing application.

Id. at [0060]. Thus, not only can the window be interacted with in 3D space (e.g., to maximize the window, to close the window, etc.), but so too can its contents

(e.g., to alter text in a Word® document, to alter numeric entries in an Excel® document, etc.). As such, there is no switching from 2D to 3D or vice versa as everything occurs in 3D space.

Petitioner argues that “Hanggie’s system can support 2D displays of legacy applications as well as 3D displays.” Pet. at 20. It is true that in Hanggie, “[l]egacy support is provided so that the operating system can draw and render windows generated by legacy applications to look consistent with non-legacy application windows.” APPLE1006 at Abstract. In other words, Hanggie uses “shadows, transparency, advanced lighting techniques and other rich visual features” (*id.* at [0026]) to present windows generated by legacy applications (e.g., 2D windows) in a 3D space. This is because, *in Hanggie, everything takes place in 3D space.*

Hanggie does provide that because its 3D GUI requires “processor intensive calculations,” there are times when its CDWM should not be used, “e.g., in systems with low video memory, or with no 3D acceleration hardware. *Id.* at [0092]. However, this is radically different from the claimed and intentional switching back-and-forth between 2D and 3D space, where individual applications can be interacted with in 2D space, and a plurality of images of applications (showing where the user last left off) are presented in 3D space.

Not only does Hanggie not disclose or suggest the claimed invention, but it actually teaches away. In Hanggie, everything is presented in 3D space, using techniques “that allows the user to immediately distinguish between background and foreground content.” *Id.* at [0096]. In situations when Hanggie is not appropriate, “the operating system may enforce legacy drawing mode,” which

Petitioner argues is 2D. *Id.* at [0092] and Pet. at 21. Assuming Petitioner is correct, then Hanggie teaches the ***disabling of 3D*** in such situations, whereas the claimed invention ***presents images in 3D space***, as images are easier to manipulate, skew, etc., in 3D space than actual active applications.

Petitioner further argues that the “frame buttons” in Hanggie—specifically the “maximize” button—enables “selection between 2D and 3D viewing mode.” Pet. at 24. Again, this is not true. In Hanggie, not only is everything presented in 3D space, but the windows themselves are 3D. This can be seen in Figure 3 (reproduced above), where the window has depth in addition to height and width. Thus, maximizing the window would merely enlarge the 3D window—not switch from a 3D space to a 2D space as Petitioner contends.

However, even if Petitioner is correct, Hanggie does not teach the claimed switching, which involves “replacing.” In the ‘868 Patent, individual, active applications are open in 2D space. For each open application, an object having application-specific data is presented in 2D space. For example, if the user opens the application Microsoft Word®, a Word® document (application-specific data) in a window (object) would be presented in 2D space. An image of the object and application-specific data would then be captured and presented (along with other images corresponding to other open applications) in 3D space. Interacting with the image in 3D space would result in switching to 2D space, where the Word® document in the window in 2D space (*i.e.*, an active version of the Word® application) “replaces” the plurality of images in 3D space.

By contrast, clicking on the “maximize” button does not result in the claimed “*replacing*” *an image of an application in 3D space with an active*

version of the application in 2D space. As discussed in Section III, the Examiner only allowed the '048 Patent (*i.e.*, the grandparent patent) after the claims were amended to include the “replacing” step (EX2004 at 17-31), and only allowed the '654 Patent (*i.e.*, the parent patent) after the claims were amended to provide that what is being “replaced” is “said plurality of images within said three-dimensional space with one of said first, second, and third object corresponding to said one of said plurality of applications within a two-dimensional space” (EX2005 at 6-19).

With respect to the above-identified Word® example, switching from 3D to 2D requires ***replacing an image*** of the Word® application ***with an active version*** of the Word® application (*i.e.*, a Word® document in a window). In Hanggie, the window is merely being enlarged, or maximized. As such, Hanggie fails to disclose “replacing” anything with anything, let alone an image with an active application as claimed.

C. Matthews

In Grounds 1b and 2b, Petitioner further relies on U.S. Patent Publication No. 2006/0107229 (“Matthews”), but only with respect to dependent Claims 6-8 and 15-17. APPLE1008. Matthews discloses a 3D GUI that “utilizes a three-dimensional transformation to move a presently displayed work area, for example a desktop with open windows, revealing a background presentation area behind it.” *Id.* at Abstract.

Importantly, Petitioner is only citing Matthews for its disclosure of a 3D space that includes a desktop (dependent Claims 6 and 15), a web browser (dependent Claims 7 and 16), and a second 3D immersive space (*i.e.*, 3D within 3D) (dependent Claims 8 and 17). While Patent Owner disagrees with Petitioner's

characterization of Matthews, because this reference is only being cited with respect to dependent claims, if Grounds 1a and 2a (involving Anthony and Hanggie) are denied, then so too must Grounds 1b and 2b (further involving Matthews). *See, e.g., Callaway Golf Co. v. Acushnet Co.*, 576 F.3d 1331, 1344 (Fed. Cir. 2009) (it is an “irreconcilable inconsistency” to find a dependent claim obvious when the claim from which it depends is found to be nonobvious).

D. Robertson

In Grounds 1c and 2c, Petitioner further relies on U.S. Patent No. 6,414,677 (“Robertson”), but only with respect to dependent Claim 7. APPLE1008. Robertson discloses a 3D GUI that “permits a user to view and organize all objects and to edit or otherwise work on a selected object by, for example, representing, graphically, objects or content with a low resolution image which can be added, moved, or deleted from a simulated three-dimensional environment on a user’s video monitor.” APPLE1009 at 6:32-40.

Importantly, Petitioner is only citing Robertson for its disclosure of a 3D space that includes a web browser (dependent Claim 7). While Patent Owner disagrees with Petitioner’s characterization of Robertson, because this reference is only being cited with respect to a dependent claim, if Grounds 1a and 2a (involving Anthony and Hanggie) are denied, then so too must Grounds 1c and 2c (further involving Robertson). *See, e.g., Callaway Golf Co.*, 576 F.3d at 1344 (Fed. Cir. 2009).

VI. PETITIONER FAILS TO ESTABLISH A REASONABLE LIKELIHOOD OF PROVING ANY CHALLENGED CLAIM UNPATENTABLE

The arguments in this response are preliminary and support denial of the

Petition. SpaceTime3D reserves the right to further address the Petition at a later point in time if necessary, including to submit rebuttal expert testimony.

A. The Petition Is Defective Under 35 U.S.C. § 325(d) Because The Proposed Grounds Are Cumulative Of Grounds Already Considered In Prosecution

The Petition should be rejected because it proposes invalidity grounds based on prior art and arguments cumulative to those previously before the USPTO. 35 U.S.C. § 325(d) provides that “[i]n determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31 [*i.e., inter partes* review], the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.”

This is exactly the case here. The Petition need not be considered because the USPTO has already rejected substantially the same arguments and substantially the same prior art during prosecution of the ‘868 Patent. *See, e.g., Conopco, Inc. dba Unilever v. The Procter & Gamble Co.*, IPR2014-00628, Paper 21 at 5-10 (PTAB Oct. 20, 2014) (denying institution under § 325(d) a Petition that asserted new art but nonetheless presented “substantially the same ... arguments” that “previously were presented to the Office” and noting that “substantially similarity of argument, standing alone, is sufficient reason for a denial under § 325(d)”); *Neil Ziegman, N.P.Z, Inc. v. Stephens*, IPR2015-01860, Paper 11 at 6-14 (PTAB Feb. 24, 2016) (denying institution under § 325(d) based on the cumulativeness of the asserted art and arguments that were considered during the prosecution of the challenged patents).

During prosecution, SpaceTime3D distinguished its invention from several

prior art references, including Sciammarella, Freeman, Prager, Kamiwada, and Iida—even amending the claims to further distinguish over the GUIs described therein. Petitioner is arguing that the ‘868 Patent is invalid over Anthony and Hanggie (Grounds 1a and 2a) (*i.e.*, the only grounds that address the independent claims). But the USPTO already considered and allowed the ‘868 Patent over references that are virtually identical to these references.

For example, Petitioner is citing Anthony for its disclosure of a 3D space having a plurality of items, where each item is *arranged chronologically* (*i.e.*, based in time). However, the same was disclosed in Sciammarella, Freeman, and Prager, where items are *arranged chronologically in 3D space*.

For example, compare Figure 4 of Anthony to Figure 2 of Sciammarella (both reproduced below). Sciammarella, like Anthony, provides for a 3D GUI that presents a plurality of items in a “selected layout and order.” *See, e.g.*, EX2009 at Figure 1 at 28d (showing that the user can “sort 28e” based on “time 28d”). In particular, Sciammarella provides for an “order interface 28” that is “for ***selecting one of four different sequence orders*** that determine arrangement of the thumbnails 23 in the selected layout. ***The four orders include:*** name of data object, type of data object, size of the data file, and ***time the file was stored.***” *Id.* at [0053] (emphasis added).

Patent Owner's Preliminary Response
IPR2023-00344 (U.S. Patent No. 9,696,868)

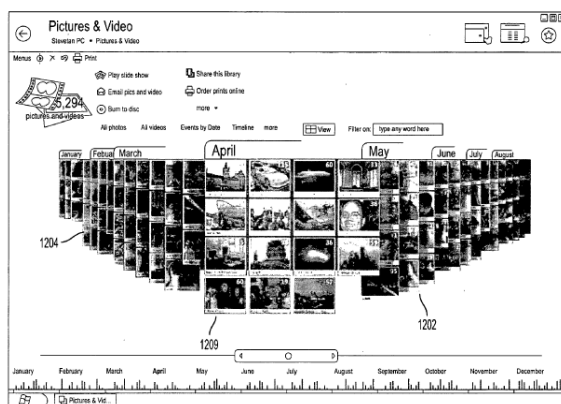


FIG. 4

Figure 4 of Anthony

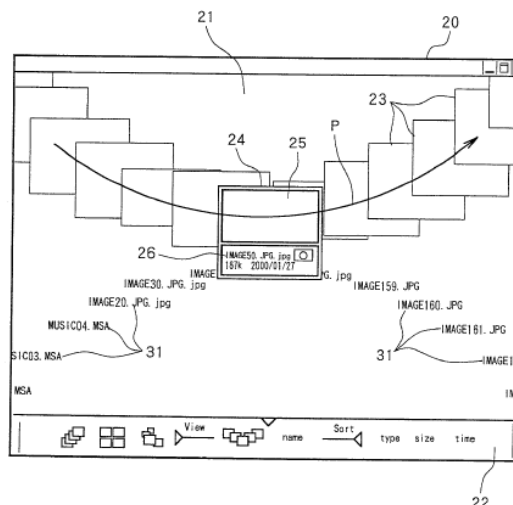


Figure 2 of Sciammarella

The items presented can include “digital image files, digital audio files, text files, executable programs, program files, and movie files,” where the selected file is “the center-most, or focus, thumbnail 25.” *Id.* at [0047-0050]. To edit an item in the 3D stack, “the user can select to launch an application related to the selected data object.” *Id.* at [0090]. In response, the program manager “moves the launched application to the front [of the 3D space].” *Id.* Thus, like Anthony, the items in Sciammarella, which may represent different “files,” are arranged chronologically, and can be edited in 3D space.

The same is true for Freeman and Prager, both of which are reproduced below. In Freeman, the documents (which may include “text, pictures, animations, software programs, or any other type of data”) are “stored in one or more chronological ordered streams.” EX2007 at Abstract.

Patent Owner's Preliminary Response
IPR2023-00344 (U.S. Patent No. 9,696,868)

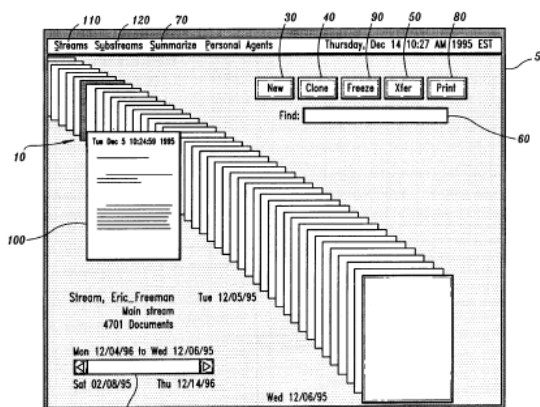


Figure 1 of Freeman

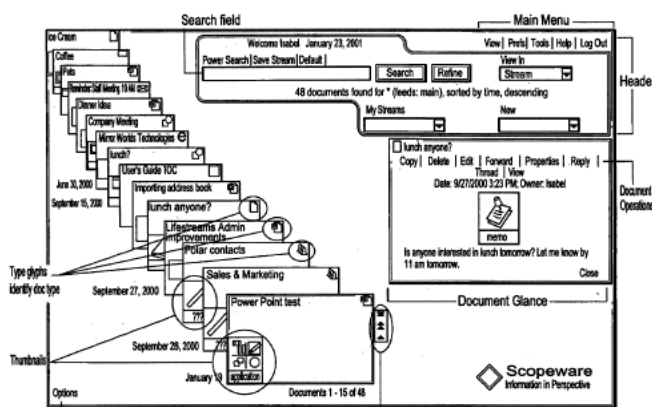


Figure 1 of Prager

In Freeman, a “stream” of documents are presented in 3D space. *See, e.g., id.* at Figure 1 and 4:24 (“A ‘stream’ according to the present invention is ***a time-ordered sequence of documents*** that functions as a diary of a person or an entity’s electronic life.”) (emphasis added). The documents in the stream are “graphical representations” of the actual document, with the document on top of the stream (*i.e.*, the foremost document) being “live” or “active,” so that it can be interacted with as traditionally done on a 2D desktop. *See, e.g., id.* at 5:48-56.

Prager is similar to Freeman in that it discloses a 3D space that includes “a time-ordered stream” where “glance views” can be used to display additional information on documents in the stream. Like Freeman, the “stream” in Prager comprises a plurality of “document representations.” *See, e.g., EX2008* at Figure 1. “[W]hen the user touches a document on the screen with the cursor, a summary of that document with a thumbnail vies [sic] appears immediately ... [as] a dedicated small window besides the receding parade of time ordered documents.” *Id.* at 2:23-34.

As shown in Figure 5 of Prager, “[i]f the user has clicked on a browse card

to fix the glance view as a stationary window, the user can then select any of the visible and available document operations.” *Id.* at 7:43–8:8. If a “document operation” is selected (*e.g.*, Copy, Delete, etc.), then “the system executes the selected operation (command) and the display reflects this at S511.” *Id.* Thus, the 3D space includes both a stream having a plurality of “browser cards” in chronological order and a “document glance” for any selected “browser card,” where the “document glance” can be interacted with to alter its contents.

Both Freeman and Prager were cited several times by the Examiner in rejecting claims in the grandparent and parent patent applications. *See, e.g.*, EX2003 at 87-123 and EX2004 at 69-87, 124-143, and 174-192. However, the claims of the ‘868 Patent were ultimately allowed because the cited references, like Anthony, disclosed 3D GUIs that remained in 3D, *i.e.*, they never switched back-and-forth between 2D and 3D space, where an active application “replaces” a plurality of inactive images.

The Examiner also considered prior art that is very similar to Hanggie, where items are presented and can be edited in 3D space, where individual items can be maximized or enlarged (*e.g.*, to be viewed better, etc.). For example, U.S. Patent Publication No. 2001/0050687 (“Iida”) was cited by the Examiner during prosecution. EX2001 at 23. Iida discloses “a three-dimensional object display program designed to display merchandise and other physical objects in three-dimensional space so as to facilitate user selection.” EX2010 at [0002]. To better view the merchandise, “[i]f there is input from the instruction input unit 21 to change the vantage point by for example advancing into or retreating from the three-dimensional space displayed, then the three-dimensional space data display

unit 20 displays the three-dimensional space data from the new vantage point.” *Id.* at [0050].

In particular, Iida provides that “space 68 can also be enlarged/reduced as needed.” *Id.* at [0083]. This can be seen, for example, in Figures 13 and 14 (reproduced below), where “[t]he vantage point can be moved along the Z-axis by using buttons 75 and 76, so that the vantage point moves toward the front when the button 75 is depressed and the vantage point moves to the rear when the button 76 is depressed.” *Id.* at [0090]. In Figure 14, “the vantage point movement button 75 has been pressed,” thereby zooming out. *Id.* at [0092]. Zooming in can also be accomplished by depressing the vantage point movement button 76.

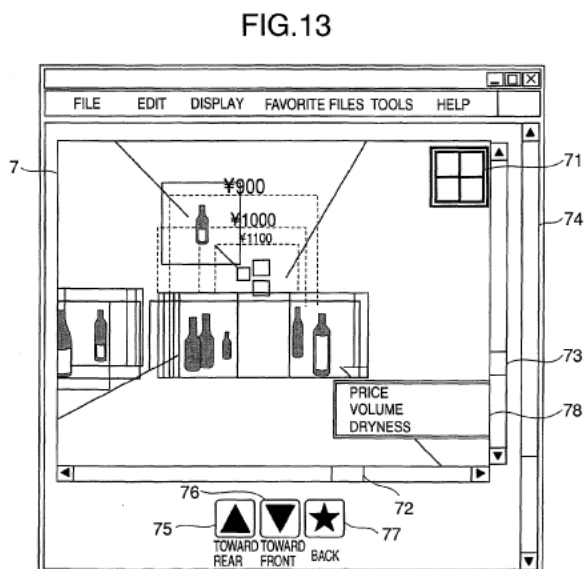


Figure 13 of Iida

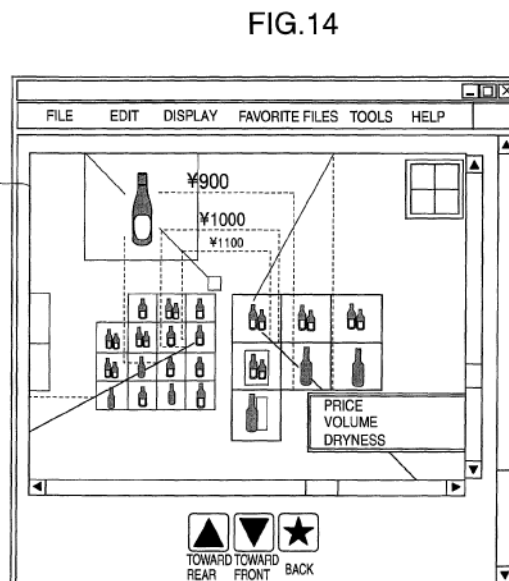


Figure 14 of Iida

Figure 15 (reproduced below) “shows a case in which the product in the center of the three-dimensional space screen 7 is selected and the product detail screen 8 is displayed.” *Id.* at [0083]. As shown, the product detail page includes

the same “frame buttons” that are present in Hanggie (*i.e.*, minimize, maximize, close). Thus, the user could also change their vantage point by, for example, maximizing the product detail page. Iida provides that if the vantage point changes, then “the three-dimensional display unit 20 redraws the three-dimensional space screen 7 according to the changed vantage point.” *Id.* at [0091]; *see also id.* at Figure 12 at S45 (“Three Dimensional Space Redrawn Using Different Vantage Point”). Thus, the Examiner was aware of prior art that disclosed enlarging (or maximizing) a window in 3D space, and that doing such does not constitute switching from 3D to 2D, but merely “redrawing the 3D space.”

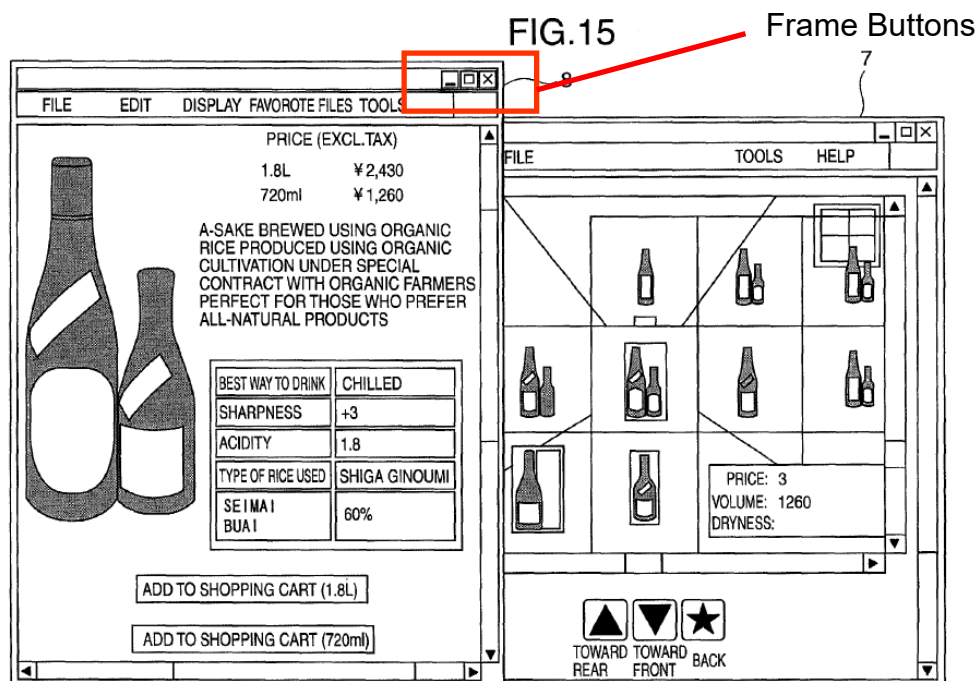
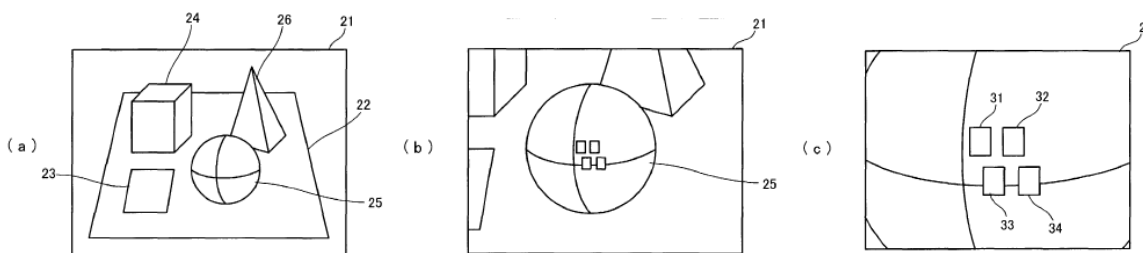


Figure 15 of Iida

The same features were disclosed in U.S. Patent Publication No.

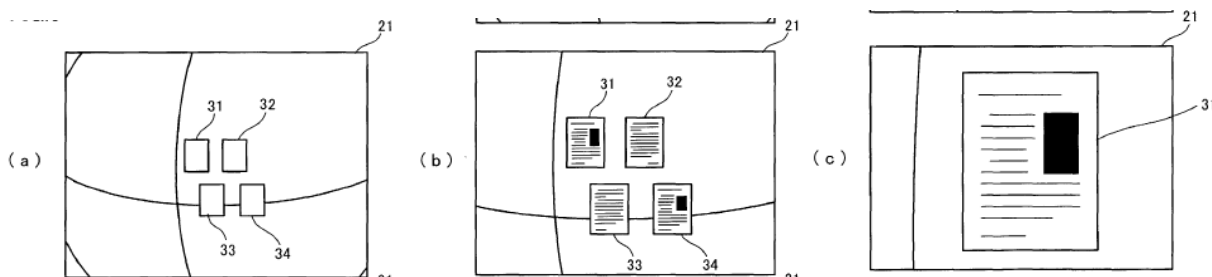
2003/0179231 (“Kamiwada”), which was cited by the Examiner during prosecution. EX2001 at 23. Kamiwada teaches a 3D GUI, or more particularly one where “a display is changed automatically while maintaining link relationship among information objects in a virtual three-dimensional space.” EX2011 at Abstract. In Figures 4a-c (reproduced below), Kamiwada shows an example of “[w]hen the user conducts operation of the input device ... so as to approach the sphere information object 25, the display screen alters as shown in (a) through (c) of FIG. 4. Namely, the sphere information object 25 is enlarged (zoomed in), and the four information objects 31-34 located on the surface of the sphere become visible gradually.” *Id.* at [0042]; *see also id.* at [0044] (“In the display shown in (c) of FIG. 4, the four information objects 31-34 are further enlarged (zoomed in), so that contents of their text are displayed.”).



Figures 4a-c of Kamiwada

“FIG. 5 shows an example of change in display when the viewpoint further approaches from the display 21 shown in (c) of FIG. 4 to one information object on the sphere information object 25.” *Id.* at 0045; *see also id.* at Figures 5a-c, reproduced below. Kamiwada provides that this is an “example of change in display when user conducts operation approaching (zooming in) a specific

information object using a point device (the input device 2) such as a mouse.” *Id.* at [0046].



Figures 5a-c of Kamiwada

This “zooming” can be achieved manually (*e.g.*, step-by-step, as shown in Figures 4-5), or automatically (*e.g.*, by clicking on “document 1” in Figure 11, similar to the “frame button” in Hanggie). *See, e.g., id.* at [0063]. Either way, Kamiwada makes it clear that even though the user is “zooming in” on a single 2D object, the object is still in 3D space. This is because, to allow “browsing” in 3D, “the relative positions of the information objects located in the virtual three-dimensional space [must be] maintained.” *Id.* at [0065].

Clearly, the Examiner was aware of prior art that is virtually identical (in all material respects) to Hanggie, where an item in 3D space can be enlarged or maximized (*e.g.*, to be viewed better, etc.). Because the prior art cited by Petitioner is substantially the same as prior art considered by the Examiner during prosecution of the ‘868 Patent, no new grounds of rejection have been presented, and the Petition should therefore be denied pursuant to 35 U.S.C. § 325(d).

B. Petitioner Fails To Show That The Asserted Prior Art Teaches Or Suggests All Elements Of The Challenged Claims

In each and every asserted ground, Petitioner fails to “specify where each element of the claim is found in the prior art patents or printed publications relied upon.” 37 C.F.R. § 42.104(b)(4); *see also* 35 U.S.C. § 312. This is because Petitioner’s prior art is deficient in several respects. As such, the Petition should be denied. This is especially true since Grounds 1a and 2a are the only grounds that argue invalidity of the independent claims. As such, if Grounds 1a and 2a are denied, Grounds 1b, 2b, 1c and 2c, which only address claims that depend from claims in Grounds 1a and 2a, must be denied as well. *See, e.g.*, 37 C.F.R. § 1.75 (“One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application. ... Claims in dependent form shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.”); *see also Callaway Golf Co.*, 576 F.3d at 1344 (a dependent claim cannot be found obvious when a claim from which it depends is found to be nonobvious, as doing so would be an “irreconcilable inconsistency”).

1. Combining Anthony and Hanggie Does Not Disclose The Claimed Limitations (Grounds 1A and 2A)

Grounds 1a and 2a are Petitioner’s only challenge to the independent claims of the ‘868 Patent, *i.e.*, Claims 1, 10, and 19. Therein, Petitioner argues that Hanggie discloses the claimed switching back-and-forth between 2D and 3D space, and only relies on Anthony for its disclosure of arranging items chronologically in 3D space.

As discussed above, a critical feature of the invention is how applications are

presented to the user in 3D space and how the user then interacts with a particular application in 2D space to modify the application-specific data associated therewith. In the '868 Patent, this is done by switching, back-and-forth, between 3D and 2D space, and replacing active applications in 2D space with images in 3D space, and then replacing images in 3D space with a single, active application in 2D space.

As discussed in the Declaration of Eddie Bakhsh, the inventor of the '868 Patent, it was customary in GUI design for everything to occur in one space. EX2001 at [47]. By way of example, in Microsoft Windows®, everything occurs on a single desktop GUI. The same is true for Anthony and Hanggie, where everything occurs on a single 3D GUI. There is no switching from one space to another. These GUIs are generally designed for personal computers (PCs) having unlimited power and relatively powerful processors (*e.g.*, Pentium). *Id.* However, on mobile devices, having relatively small displays, limited battery life, and limited processing power, it is neither feasible nor efficient to present a plurality of active webpages in a 3D space where items are skewed, manipulated, etc. *Id.*

Thus, SpaceTime3D did what was counterintuitive—requiring switching from a 3D environment, where only images are presented, to a 2D environment, where only active applications are presented. In particular, the user switches from a first environment (a 2D space) where a user can open active applications, to a second environment (a 3D space) where a user can navigate through a plurality of images of open applications and select a particular one, and back to the first environment (a 2D space) where the user can interact with an active version of the selected application. Not only does this require switching from one environment to

the other, but it also requires “replacing” what is presented in each environment (e.g., replacing active applications in 2D space with a plurality of images in 3D space, and replacing a plurality of images in 3D space with an individual, active application in 2D space).

Petitioner relies on Anthony for its disclosure of displaying items in a 3D space based on an “ordering attribute.” In one embodiment, the selected “ordering attribute” is chronological, “e.g., by using a date of creation or date of edit attribute as the ordering attribute.” APPLE1007 at [0042]. However, as Petitioner points out, it is “*data objects*” (e.g., digital photograph images, etc.) that are arranged based on the ordering attribute, not applications. Pet. at 22-23.

Petitioner argues that “a POSITA would have understood and found it obvious that a plurality of application windows could be organized and represented within Anthony’s timeline.” Pet. at 23. Patent Owner disagrees. While Anthony mentions “file type,” it provides that this is an alternate “ordering attribute.” See, e.g., APPLE1007 at [0042] and [0049]. Thus, while a POSITA may have found it obvious to organize files by “file type” (e.g., files created by Excel®, Word®, etc.), this is radically different from arranging files by the date that their “file types” (e.g., Excel®, Word®, etc.) were created or edited.

For example, Claim 1 provides that the plurality of images, which are images of at least a portion of application-specific data (e.g., certain files) are arranged in 3D space “based on a last time that said user one of ... opened said ... application and interacted with [said application].” While doing so would allow a user to identify applications that were last opened or interacted with, allowing the user to easily switch between recently used applications (*i.e.*, an objective of the

claimed invention), it would not allow them to find a particular file from hundreds or thousands of files (*i.e.*, the objective of Anthony). *See, e.g.*, APPLE1007 at [0001]; *see also* EX2001 at [30-31].

In other words, Anthony arranges *all files* based on a particular ordering attribute (*e.g.*, date of creation, file type, etc.) to easily find a particular file. While the claimed invention presents *certain files* (or images thereof) in 3D space, it only does so to illustrate open applications and where the user last left off, with each image being *arranged based on when the corresponding application was last opened or interacted with*. This “visual history” is not to find a particular file (as it would be of little to no value in doing so), but to easily switch from one open application to another. Thus, it would not have been obvious to a POSITA to modify Anthony as Petitioner suggests.

Anthony also does not disclose or suggest a 2D space, or switching back-and-forth between 2D and 3D space. Petitioner agrees but argues that this feature is disclosed in Hanggie. According to Petitioner, Hanggie teaches “control buttons, with the buttons for enabling selection between 2D and 3D viewing modes.” Pet. at 24. In particular, Petitioner argues that the “control buttons” (shown in Figure 3, reproduced below) allow the user to “close, minimize, maximize, or restore a window” and that clicking on the “maximize” button “would result in Anthony’s user interface switching from a 3D timeline view ... to a 2D view of the maximized window.” *Id.* at 26. There are several flaws with this argument.

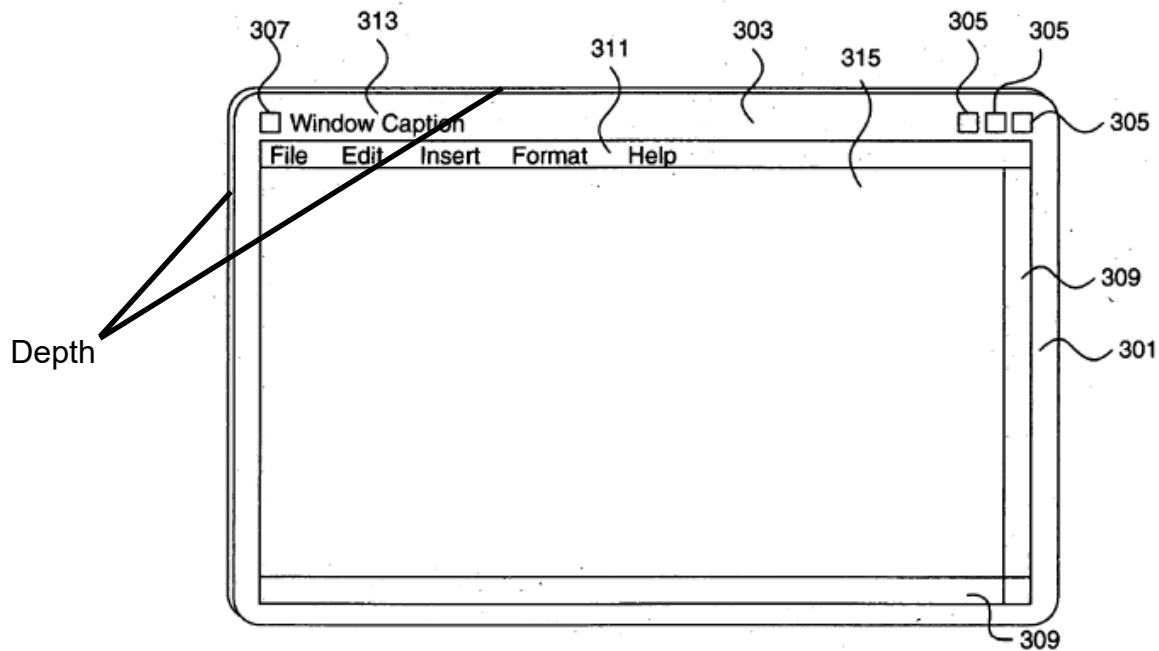


FIG. 3

First, while Hanggie teaches that a window can be “maximized” or enlarged, that is not switching to a 2D space as Petitioner contends. In Hanggie, not only is everything presented in 3D space, but the windows themselves are 3D. This can be seen in Figure 3 (above), where the window has depth in addition to height and width. Thus, maximizing the window would merely enlarge the 3D window—not switch from a 3D space to a 2D space as Petitioner contends. While it is true that both 2D and 3D objects can be presented in 3D space (see EX2012), a 3D object can *only* be presented in 3D space (EX2001 at [35]).

However, even if Petitioner is correct that maximizing a window in 3D space is essentially switching to 2D (it is not), and that it would have been “beneficial to switch from a 3D mode to a 2D mode to reduce graphics processing and thereby conserve battery power” (Pet. at 26-27), *the combination argued by*

Petitioner would not have resulted in the claimed invention.

In the '868 Patent, individual, active applications are open in 2D space. Images of each application (*i.e.*, an object, such as a window, containing application-specific data) are then captured and presented in 3D space, where the images “replace” the active applications. If a user wants to interact with a particular application (*i.e.*, “modify at least a portion of one of said first, second, and third application-specific data”), the user would select a corresponding image in 3D space, which would result in “replacing” the images in 3D space with an active version of the application in 2D space. APPLE1001 at 38:40 – 39:50. Thus, Claim 1 requires three things when switching between 2D and 3D space: (1) switching between ***a plurality of images*** and ***active applications***; (2) ***replacing*** the active applications with the plurality of images, and (3) ***replacing*** the plurality of images (***including the selected image***) with an individual, active application. ***None of these features are present in the combination argued by Petitioner.***

As discussed above, in Hanggie, every item presented in 3D space is active (both the window and its contents). This is true regardless of whether the windows are generated by legacy applications or non-legacy applications. Petitioner agrees, stating that “Hanggie’s CDWM generates a window having content (‘application-specific data’) corresponding to the application file selected by the user” (Pet. at 40) and that it would have been obvious “to modify at least a portion of the application content (‘application specific data’)” (Pet. at 42). “For instance, when using a word processor application or spreadsheet application, it is well known that a user can interact with the application and edit text and images in the application window using the computer’s keyboard, mouse, and/or other input devices.” Pet.

at 42; *see also id.* at 57-58.

However, Petitioner then goes on to argue that the same *active window* is an *image*, and that Hanggie “generates a plurality of images in the form of 3D windows.” Pet. 45. There is absolutely no support for any image being generated in Hanggie, let alone “replacing all objects corresponding to said plurality of applications that are visible in said 2D space with said plurality of images.” APPLE1001 at 39:3-19. As Petitioner admits, “Hanggie’s CDWM generates a window having content (‘application-specific data’) corresponding to the application file selected by the user.” *Id.* at 40. Clearly, this is not an “image,” but an active application that, according to Petitioner, can be interacted with “to modify at least a portion of the application content (‘application-specific data’) ... [f]or instance ... edit[ing] text and images in the application window using the computer’s keyboard, mouse, and/or other input devices.” *Id.* at 42.

Petitioner’s conclusory and unsupported statements that it would have been obvious to generate images and replace all visible applications in 2D space are insufficient when it comes to limitations that are missing from the prior art. In *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (PTAB Aug. 24, 2022) the Board denied institution as the prior art failed to teach or suggest each and every limitation. Petitioner and their expert argued that the missing limitation would have been obvious. *Id.* at 15. The Board stated that “the cited declaration testimony is conclusory and unsupported” and is therefore “entitled to little weight.” *Id.* This is especially true when the “expert testimony is offered not simply to provide motivation to combine prior-art teachings, but rather to supply a limitation missing from the prior art.” *Id.* at 16. This is exactly the case here with

the missing “plurality of images” and “replacing” features.

There is also no “*replacing said plurality of images* within said 3D immersive space *[including the image being interacted with]* with one of said ... plurality of application within said 2D space.” APPLE1001 at 37:40-44 (emphasis added). Petitioner attempts to gloss over this limitation by arguing that “by selecting a maximize button on a window in Anthony’s timeline ... [the] maximized 2D window would then replace the display of the dynamic timeline and any windows within the timeline.” Pet. at 57. However, in doing so they accentuate critical flaws in their argument.

First, the claims do not require replacing *a window* with *a window*, but *a plurality of images* (in 3D space) with *an active application* (in 2D space). Second, while a maximized or enlarged window in Hanggie may prevent the user from seeing other items in 3D space, ***it would not replace the window that is being maximized.*** The claims require “replacing said plurality of images,” ***including the image that is being interacted with.*** This is not accomplished in Petitioner’s claimed combination.

The Examiner indicated that the “replacing” limitation is critical to the claimed invention. As discussed in Section III, the Examiner only allowed the ‘048 Patent (*i.e.*, the grandparent patent) after the claims were amended to include the “replacing” step (EX2004 at 17-31), and only allowed the ‘654 Patent (*i.e.*, the parent patent) after the claims were amended to specify what is being “replaced” (EX2005 at 6-19). Again, Petitioner’s conclusory and unsupported statements are insufficient to supply a limitation that is missing from the prior art. See *Xerox Corp.*, IPR2022-00624, Paper 9 at 15 (PTAB Aug. 24, 2022).

Not only is the feature missing from the prior art, but the references actually teach away from the claimed invention. In both references (Anthony and Hanggie), everything is presented and active in 3D space. It is true that Hanggie identifies situations that may not be suitable for its CDWM. APPLE1006 at [0092] (e.g., “in systems with low video memory, or with no 3D acceleration hardware”). According to Petitioner, this would result in a 2D “legacy drawing mode,” where **3D is disabled**. In contradistinction, the claimed invention **enables 3D** and **presents a plurality of images**, which are easier to manipulate, skew, etc., in 3D space. As such, the cited prior art actually teaches away from the claimed invention. *See, e.g., KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1740 (2007) (“[W]hen the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious.”); *see also In re Francis S. Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994) (“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.”).

In arguing obviousness, Petitioner makes several inaccurate characterizations of the prior art. For example, Petitioner conflates the 2D “legacy drawing mode” with the “maximize” button, arguing that “by selecting the maximize button on a window in Anthony’s timeline, the window would be reconfigured in the legacy mode and display in 2D to occupy all or most part of the screen in a ‘maximize’ capacity.” Pet. at 57.

The maximize button and legacy mode are completely different concepts in

Hanggie and have *nothing* to do with one another. As shown in Figure 3, the “maximize” button, similar to the “close” button, the “file” pulldown, the “edit” pulldown, etc., are merely window properties. Clearly, reverting to legacy drawing mode “in systems with low video memory, or with non 3D acceleration hardware” (APPLE1006 at [0092]) has nothing to do with a window property, like “maximize.”

As Mr. Bakhsh explains, the “maximize” button merely enlarges the window to occupy all, or almost all, parts of a display. EX2001 at [38]; *see also* Pet. at 26 (“[A] POSITA would have understood and found it obvious that a maximize window would occupy all, or almost all, parts of a display.”). It does not change the functionality of the window, nor does it require replacing an inactive image of an application with an active version of the application, as claimed.

Petitioner argues that the suggestion in Hanggie that its CDWM may not be appropriate in certain situations (APPLE 1006 at [0092]) is motivation to go from 2D to 3D and vice versa. Not true. If Petitioner is correct, and “legacy drawing mode” is 2D, then Hanggie teaches that everything is either presented in a 2D environment or everything is presented in a 3D environment—not switching back and forth from one environment to the other. *See* EX2001 at [40].

In light of the foregoing, Petitioner has failed to show that Anthony and Hanggie, either alone or in combination, discloses each and every feature of Independent Claims 1, 10 and 19. The same is true for Claims 2-5, 9, 11-14, 18, or 20. Not only do these claims depend from the foregoing independent claims, but they also include features that are not disclosed in or suggested by Anthony and Hanggie.

For example, Claim 9 requires that, when replacing the plurality of images with an active application, further “enlarging a size of at least said one of said plurality of images before replacing said one of said plurality of images with said one of said first, second, and third objects, thereby simulating movement of said one of said plurality of images in a z-axis of said display.” Petitioner merely argues that this would be obvious because “maximizing a window involves enlarging the size of the window (image) until it covers most if not all the display area of the display screen.” Pet. at 67. Again, it is not a *window* that is enlarged in Claim 9 (and Claims 18 and 20), but the *selected image*. This underscores the flaw in Petitioner’s arguments concerning the independent claims.

The foregoing is true regardless of whether the claimed combination is Anthony in view of Hanggie (Ground 1a) or Hanggie in view of Anthony (Ground 2a) (collectively “HAC”), as Petitioner is relying exclusively on Hanggie’s “maximizing” button for switching from 3D to 2D. *See* Pet. at 26 and 32.

2. Combining Anthony, Hanggie, and Matthews Does Not Disclose The Claimed Limitations (Grounds 1B and 2B)

In Grounds 1b and 2b, Petitioner argues that Claims 6-8 and 15-17 are obvious over Anthony and Hanggie (HAC) in view of Matthews. First, it should be pointed out that Grounds 1b and 2b do not address any independent claim. As such, if the Board denies Grounds 1a and 2a, at least with respect to Claims 1, 10, and 19, then it must (as a matter of law) also deny Grounds 1b and 2b. *See, e.g.,* 37 C.F.R. § 1.75; *see also Callaway Golf Co.,* 576 F.3d at 1344.

Second, Matthews is only cited by Petitioner for its disclosure of three features: (1) “displaying a fourth image on said display device, said fourth image being an image of a desktop having at least one other application,” (2) “where each

one of said plurality of applications comprises a web browser application,” and (3) “displaying at least fourth and fifth images in a second 3D immersive space.” While Patent Owner respectfully disagrees with Petitioner’s characterization of Matthews, it doesn’t make up for the deficiencies of Anthony and Hanggie, as discussed above with respect to Claim 1. In fact, Petitioner does not argue that it does, but only that it teaches the features of dependent Claims 6-8 and 15-17. Because of this, and the serious flaws with HAC (*i.e.*, Grounds 1a and 2a), Grounds 1b and 2b must also be denied.

At the very least, Matthews does not disclose the features of Claims 8 and 17, where the 3D space is a first 3D space within a second 3D space (*i.e.*, 3D within 3D). The claims provide that this is accomplished by generating an image (fourth image) of the plurality of images in the first 3D space. This (fourth) image is then presented in a second 3D space with at least one other image (*e.g.*, a fifth image, which is an image of a fourth application). To interact with the first application, the user would first select the fourth image in the second 3D space, and then the first image in the first 3D space. This 3D within 3D is not disclosed in Matthews.

Petitioner argues these features are shown in Figure 7A (reproduced below along with Petitioner’s annotated version of the same). In particular, Petitioner argues that “the presentation area [401 in Figure 7A] is a second 3D immersive space” and that item 706a is the fifth image and that an imaginary box (drawn by Petitioner) around items 704, 706a, and 760b is the fourth image.

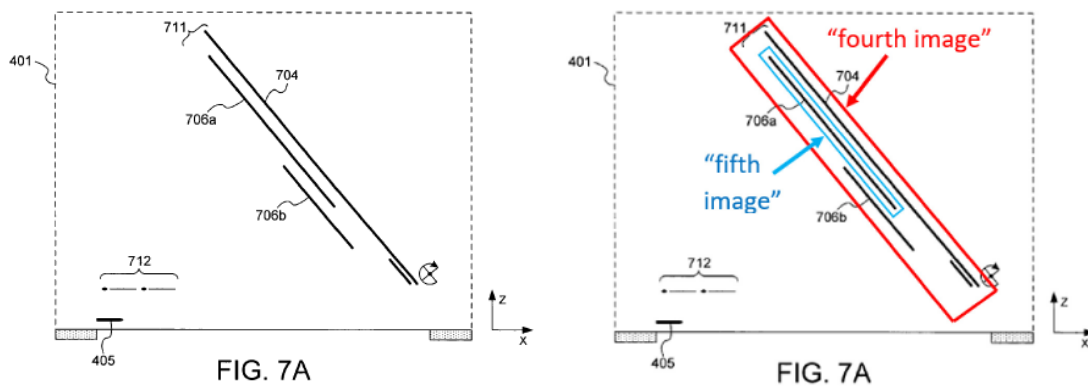


Figure 7A of Matthews

Petitioner's Annotations of Figure 7A

First of all, Matthews provides that “[t]he presentation area 401 is ... a virtual 3D space.” APPLE1008 at [0054]. Matthews does not disclose or suggest any other 3D space, let alone a second 3D space. Second, item 706a is not an image, as Petitioner contends, but a window. *See, e.g., id.* at [0069] (“Here, work area 711 comprises a desktop 704, and open windows 706a and 706b.”). As such, there is no fifth image. There is also no “fourth image” disclosed in Matthews. Petitioner tries to invent one by drawing a box around the open windows in 3D space. However, as this “image” does not exist, there is no support in Matthews for “selecting said fourth image” to go from said second 3D space to said first 3D space, where said plurality of images are presented.

3. Combining Anthony, Hanggie, Matthews, and Robertson Does Not Disclose The Claimed Limitations (Grounds 1C and 2C)

In Grounds 1c and 2c, Petitioner argues that Claim 7 is obvious over Anthony and Hanggie (HAC) in view of Matthews and Robertson. First, it should be pointed out that Grounds 1c and 2c do not address any independent claim. As such, if the Board denies Grounds 1a and 2a, at least with respect to Claims 1, 10,

and 19, then it must (as a matter of law) also deny Grounds 1c and 2c. *See, e.g.*, 37 C.F.R. § 1.75; *see also Callaway Golf Co.*, 576 F.3d at 1344.

Second, Robertson is only cited by Petitioner for its disclosure of one feature, *i.e.*, “where each one of said plurality of applications comprises a web browser application.” While Patent Owner respectfully disagrees with Petitioner’s characterization of Robertson, it doesn’t make up for the deficiencies of Anthony, and Hanggie, as discussed above with respect to Claim 1. In fact, Petitioner does not argue that it does, but only that it teaches the feature of dependent Claim 7. Because of this, and the serious flaws with HAC (*i.e.*, Grounds 1a and 2a), Grounds 1c and 2c must also be denied.

4. Petitioner Fails To Address The Required “Objective Indicia” Of Non-Obviousness

The Federal Circuit has “repeatedly held that ... objective evidence of secondary considerations ... *must* be considered before determining whether the claimed invention would have been obvious” *Apple, Inc. v. ITC*, 725 F.3d 1356, 1365 (Fed. Cir. 2012) (emphasis added); *see also Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1349 (Fed. Cir. 2012). Failing that, the Petition must be denied.

Secondary considerations of nonobviousness, such as commercial success, praise by others, and teaching away, are strong indicators of whether the challenged claims would have been obvious at the time of invention. “Commercial success is relevant because the law presumes an idea would have been brought to market sooner, in response to market forces, had the idea been obvious to persons skilled in the art.” *Merck & Co. v. Teva Pharm. USA*, 395 F.3d 1364, 1376 (Fed. Cir. 2005). The same is true for industry praise. In fact, “praise in the industry for

a patented invention, and specifically praise from a competitor, tends to ‘indicat[e] that the invention was not obvious.’” *Power One, Inc. v. Artesyn Technologies, Inc.*, 599 F.3d 1343, (Fed. Cir. 2010), citing *Allen Archery, Inc. v. Browning Mfg. Co.*, 819 F.2d 1087, 1092 (Fed. Cir. 1987). This is exactly the case here.

In 2007, SpaceTime3D released a product that incorporated features of the claimed invention. The product received praise by technical journals and newspapers. EX2001 at [13-16]. For instance, the *San Jose Mercury News* stated that the product “is the most advanced 3-D navigation system I’ve seen.” *Id.* at [15]. Similarly, *TechCrunch* stated that “[i]t’s difficult to describe the user experience ... [i]t’s pure eye candy.” *Id.* An *TechNewsWorld* stated that “I can already image SpaceTime’s tag line: We don’t do searches – we make search results amazing.” *Id.*

And it was not just the 3D browsing that was praised, but the switching back-and-forth between 3D and 2D space, where images of webpages are presented in 3D space and individual, active webpages are presented in 2D space. As such, there is a “nexus” between the claimed invention and the industry praise. *See, e.g., Merck & Co.*, 395 F.3d at 1376. For example, *TechNewsWorld* stated that “[w]ith SpaceTime, I have an unlimited 3-D space ... [that] lets me alternate between 3-D and 2-D perspectives” EX2001 at [16].

Manufacturers were also impressed by SpaceTime3D’s technology. For example, on February 2, 2008, Samsung sent emails to SpaceTime3D expressing interest in its technology and inviting SpaceTime3D to present its technology at Samsung’s headquarters. EX2001 at [17-24]. While discussions with Samsung broke down, years later, after litigation involving the ‘868 Patent, Samsung

acquired licenses to several SpaceTime3D patents, including the '868 Patent. SpaceTime3D is also in discussions with LG Electronics Inc. over a similar license, the details of which should be finalized before the deadline for the Board's institution decision. *Id.*

"[O]bjective indicia 'may often establish that an invention appearing to have been obvious in light of the prior art was not.'" *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1378 (Fed. Cir. 2012). "These object criteria thus help turn back the clock and place the claims in the context that led to their invention." *Id.* "This built-in protection can help place a scientific advance in the proper temporal and technical perspective when tested years later for obviousness against charges of making only minor incremental improvements." *Id.*

Petitioner fails to address these secondary considerations of non-obviousness and instead relies on improper hindsight by ignoring the express teachings of Anthony and Hanggie, where everything is presented in one 3D space. As such, these references actually teach away from the claimed invention. Secondary indicia of non-obviousness, such as "teaching away," or industry praise and commercial success "are powerful tools for courts faced with the difficult tasks of avoiding subconscious reliance on hindsight." *Mintz*, 679 F.3d at 1378.

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VII. CONCLUSION

For the reasons set forth above, SpaceTime3D respectfully requests that the Board deny the petition for *inter partes* review.

Respectfully submitted,

Date: April 19, 2023

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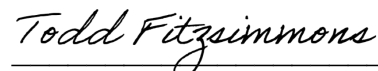
Attorney for Patent Owner

CERTIFICATE OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. §42.24(d) that the foregoing Patent Owner's Preliminary Response to Petition for *Inter Partes* Review of U.S. Patent No. 9,696,868, excluding any table of contents, table of authorities, grounds for standing under §42.104, §42.204, or §42.304, mandatory notices under §42.8, certificates of service or word count, or appendix of exhibits of claim listings, contains 13,999 words according to the word-processing program used to prepare this paper (Microsoft Word).

Respectfully submitted,

Date: April 19, 2023



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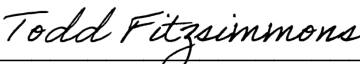
CERTIFICATE OF SERVICE

The undersigned certifies pursuant to 37 C.F.R. §42.6(e) and §42.105 that on April 10, 2023, a true and correct copy of this Preliminary Response to Petition for *Inter Partes* Review of U.S. Patent No. 9,696,868 and all supporting exhibits were served via Priority Mail Express® on the Petitioner at the following correspondence address of record:

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