

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

SPACETIME3D, INC.,
Patent Owner.

IPR2023-00343
Patent 9,304,654 B2

Before HUBERT C. LORIN, DAVID C. McKONE, and MINN CHUNG,
Administrative Patent Judges.

CHUNG, *Administrative Patent Judge.*

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

I. INTRODUCTION

Apple Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–19 (the “challenged claims”) of U.S. Patent No. 9,304,654 B2 (Ex. 1001, “the ’654 patent”). SpaceTime3D, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Pursuant to our authorization (Ex. 3001), the parties filed briefs further addressing the issue of discretion under 35 U.S.C. § 325(d) and the issues relating to the claim term “replacing.” Paper 7 (“Prelim. Reply”); Paper 8 (“Prelim. Sur-reply”).

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). Under 35 U.S.C. § 314(a), institution of an *inter partes* review is authorized when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” After considering the information presented in the Petition, Preliminary Response, Preliminary Reply, and Preliminary Sur-reply, we determine that the information presented establishes that there is a reasonable likelihood that Petitioner would prevail in showing the unpatentability of at least one challenged claim. Accordingly, we institute an *inter partes* review of all challenged claims of the ’654 patent, based on all grounds raised in the Petition.

II. BACKGROUND

A. Real Party-in-Interest

Petitioner identifies itself as the sole real party-in-interest. Pet. 90.
Patent Owner identifies itself as the sole real party-in-interest. Paper 3, 2.¹

B. Related Matters

According to the parties, the '654 patent is the subject of the following district court litigation: *SpaceTime3D, Inc. v. LG Electronics Inc.*, No. 2:22-cv-00049 (E.D. Tex.) and *SpaceTime3D, Inc. v. Apple Inc.*, No. 6:22-cv-00149 (W.D. Tex.) (“District Court Litigation”). Pet. 90; Paper 3, 2. The parties also indicate that the '654 patent was the subject of *SpaceTime3D, Inc. v. Samsung Electronics Co.*, No. 2:19-cv-00372 (E.D. Tex.), which has been terminated. Pet. 90; Paper 3, 2.

Petitioner indicates that the '654 patent was the subject of IPR2020-01419, whereas Patent Owner identifies IPR2020-0418 as related matter. Pet. 90; Paper 3, 2. It appears that the '654 patent was involved in IPR2020-01418, in which the petition was dismissed prior to institution. See IPR2020-01418, Paper 12.

C. The '654 Patent

The '654 patent issued April 5, 2016, from U.S. Patent Application No. 14/503,142, filed September 30, 2014 (“the '142 application”). Ex. 1001, codes (21), (22), (45). The '142 application is a continuation of

¹ Paper 3, as filed, does not include page numbering as required by our rules. For purposes of this decision, we number the first page (the caption page) as page number 1. Although the error here is harmless, the parties are reminded to format all papers and exhibits in accordance with 37 C.F.R. §§ 42.6 and 42.63.

U.S. Patent Application No. 12/751,879, filed on March 31, 2010 (issued as U.S. Patent No. 8,881,048). *Id.* at code (63). The '654 patent also claims the benefit of U.S. Provisional Patent Application No. 60/717,019, filed on September 13, 2005. *Id.* at code (60).

The '654 patent, titled “System and Method for Displaying a Timeline Associated With a Plurality of Applications,” relates to graphical user interfaces for operating and accessing information on a computer, including a three-dimensional (“3D”) interactive computing interface. Ex. 1001, 1:29–32, codes (54), (57). As background, the '654 patent describes that

People currently compute within operating systems that present computer output, such as documents, applications, and operating system's interface in a 2D (two-dimensional) visual display. After initially being loaded into the computer by the boot program, the operating system controls all the other programs in a computer. Typically, the component of the operating system that summons the style in which this output is displayed is called the *GUI or graphical user interface*. A successful GUI will use screen presentations including metaphors that utilize graphic elements such as icons to make an operating system's input and output easier to manage. Most computer operating systems incorporate a GUI that utilizes two-dimensional graphics to capture, process, and output all input from an end user in a 2D form—having height and width only.

Id. at 1:56–2:3 (emphasis added). The '654 patent further describes

We live in a 3D (three-dimensional) world where we see that objects not only have a horizontal position (x) and vertical position (y) but also have depth (z) that is *also known as time*, according to the three-dimensional coordinate system of mathematics. This notion of expressing *depth or time* in a visual computer metaphor is important for the creation of a visual history of the end user's computing sessions.

Id. at 2:14–20 (emphases added). According to the '654 patent,

The navigation window of many desktop operating systems use controls and buttons to allow end users to navigate to other folders and windows in the hierarchical structure of the file system. Often, in navigating to new windows, the new windows replace the display of the current window. Accordingly, it would be very desirable to provide an improved graphical user interface that allows the user to efficiently navigate th[r]ough a *virtual space* wherein groups of windows can be easily organized, stored, and retrieved.

Id. at 2:35–43 (emphasis added).

Against this backdrop, the '654 patent describes embodiments of methods for generating a timeline that includes an icon for each object presented within a virtual space and displaying the timeline within the virtual space, wherein the icons are organized in a linear chronological order according to when the objects were presented within the virtual space. *Id.* at 3:5–10, code (57). In one embodiment,

content output into the 3D GUI application's virtual space is generated by running a helper application, such as eBay Search or Yahoo Images Search. . . . The output preferably comprises a linear map (e.g., drawn on the bottom margin of the virtual space), whereby the 3D GUI is adapted to express the map of stored searches as 3D icons with their names (should the end user mouse-over them) for specific search items expressed as a timeline.

Id. at 28:28–38.

Figure 9 of the '654 patent is reproduced below.

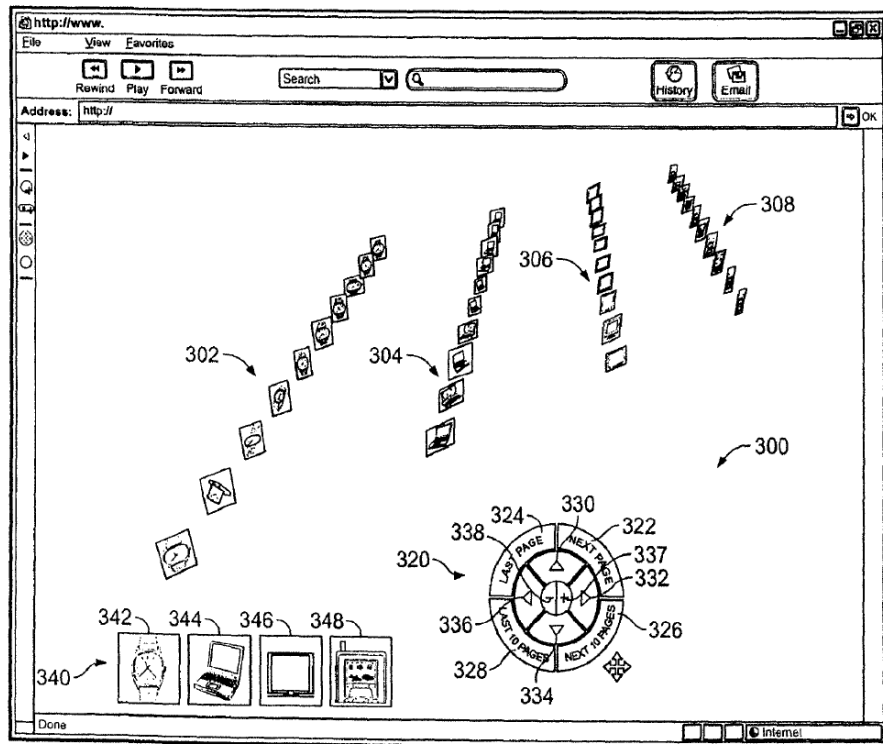


FIG. 9

Figure 9 illustrates an embodiment of a 3D GUI application window. *Id.* at 6:28–29.

The '654 patent describes that

in the embodiment of FIG. 9, one can see three 3D icons (342, 344, 346, 348) in the timeline 340 representing four unique searches (i.e., rolex Daytona, ibm laptop, plasma tv, and treo 650) done with the eBay Search helper application. Each unique search resulted in the creation of its own 3D stacks 302, 304, 306, 308 (each stack showing ten items at a time in this embodiment) as well as their own unique 3D icons plotted in a timeline map 340 at the bottom margin of the 3D virtual space 300. In this embodiment of the invention, should the end user click on any hyperlink or 3D icon, the 3D GUI would visually take the end user to the viewpoint of the first eBay search result item within its 3D stack.

Id. at 28:49–61.

D. Illustrative Claim

Of the challenged claims, claims 1, 10, and 19 are independent.

Claim 1 is illustrative of the challenged claims and is reproduced below with bracketing used by Petitioner (Pet. v–vi).

1. A method for displaying a timeline associated with a plurality of applications and allowing a user to modify an output of one of said plurality of applications by interacting with said timeline, comprising:

[1a] receiving a plurality of inputs from a user, said plurality of inputs comprising at least first, second, and third inputs;

[1b] opening said plurality of applications in response to said plurality of inputs, said plurality of applications comprising at least first, second, and third applications, wherein each one of said plurality of applications is configured to (i) generate an object having application-specific data, (ii) display said object on a display device, and (iii) allow said user to modify at least a portion of said application-specific data by interacting with said object; and

[1c] displaying on said display device said timeline associated with said plurality of applications, comprising;

[1c-1] generating a plurality of images, said plurality of images comprising at least first, second, and third images, wherein said first image is an image of at least a portion of a first object generated by said first application and having first application-specific data, said second image is an image of at least a portion of a second object generated by said second application and having second application-specific data, and said third image is an image of at least a portion of a third object generated by said third application and having third application-specific data; and

[1c-2] displaying said plurality of images in a three-dimensional space on said display device in an order based on a last time that said user one of (i) opened said

first application and interacted with said first object, (ii) opened said second application and interacted with said second object, and (iii) opened said third application and interacted with said third object, such that a first one in said order is displayed in a foreground of said three-dimensional space, a second one in said order is displayed in a background of said three-dimensional space, behind at least said first one in said order, and a third one in said order is displayed in a background of said three-dimensional space, behind at least said second one in said order; and

[1d] allowing said user to modify at least a portion of one of said first, second, and third application-specific data, comprising:

[1d-1] receiving a first interaction from said user with one of said plurality of images corresponding to one of said plurality of applications;

[1d-2] 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 applications within a two-dimensional space in response to said first interaction;

[1d-3] receiving a second interaction by said user with said one of said first, second, and third objects within said two-dimensional space; and

[1d-4] modifying said one of said first, second, and third application-specific data in response to said second interaction.

Ex. 1001, 37:44–38:35.

E. Prior Art and Declaration Evidence

Petitioner cites the following references in its challenge to patentability:

U.S. Patent Application Publication No. 2005/0088447 A1, published Apr. 25, 2005 (Ex. 1006, “Hanggie”);

U.S. Patent Application Publication No. 2005/0091596A1, published Apr. 28, 2005 (Ex. 1007, “Anthony”); and

U.S. Patent Publication Application No. 2006/0107229 A1, published May 18, 2006 (Ex. 1008, “Matthews”).

Petitioner supports its challenge with a declaration from Henry Fuchs, Ph.D. (Ex. 1003, “Fuchs Declaration”). Patent Owner has submitted a declaration from Eddie Bakhsh (Ex. 2001, “Bakhsh Declaration”) in support of Patent Owner’s Preliminary Response.

F. Asserted Grounds of Unpatentability

Petitioner asserts that the challenged claims are unpatentable based on the following grounds (Pet. 4).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 7, 8, 10–13, 15–17, 19	103(a) ²	Anthony, Hanggie
6, 9, 14, 18	103(a)	Anthony, Hanggie, Matthews
1–5, 7, 8, 10–13, 15–17, 19	103(a)	Hanggie, Anthony
6, 9, 14, 18	103(a)	Hanggie, Anthony, Matthews

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103 effective March 16, 2013. Because, based on the record presented, we preliminarily determine that the challenged claims of the ’654 patent have an effective filing date prior to the effective date of the applicable AIA amendment, we refer to the pre-AIA version of § 103.

III. ANALYSIS

A. Discretion Under 35 U.S.C. § 314(a)

We first address the issue of whether we should exercise our discretion to deny institution under 35 U.S.C. § 314(a). Patent Owner asserts that we should exercise our discretion to deny institution under *Fintiv* due, *inter alia*, to the advanced state of the underlying District Court Litigation. See Prelim. Resp. 3–8 (citing *Apple, Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential)).

Our analysis of discretionary denial under *Fintiv* is guided by the USPTO Director’s Memorandum issued on June 21, 2022, titled “Interim Procedure for Discretionary Denials in AIA Post Grant Proceedings with Parallel District Court Litigation” (“Director Memo”). Under the Director Memo, “[c]onsistent with *Sotera Wireless, Inc.*,³ the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.” Director Memo 3; *see also id.* at 9 (“the PTAB will not deny institution of an IPR or PGR under *Fintiv* . . . where a petitioner stipulates not to pursue in a parallel district court proceeding the same grounds as in the petition or any grounds that could have reasonably been raised in the petition.”).

Pursuant to our authorization (Ex. 1027, 17:21–18:1), Petitioner has filed a stipulation, which states:

³ *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A) (“*Sotera*”).

Apple hereby stipulates that if the PTAB institutes IPR2023-00343 based on the grounds and claims listed in the tables in Appendix A, *Apple will not pursue for the instituted claims, in the District Court proceedings, the grounds asserted in the IPR2023-00343 petition or any other ground that could have been reasonably raised in an IPR. Sotera Wireless, Inc. v. Masimo Corp.*, Case IPR2020-0109, Paper 12 (PTAB Dec. 1, 2020).

In so stipulating, Apple seeks to minimize the overlap of issues and avoid multiple proceedings addressing the validity of the challenged claims based on the same grounds. Rather, through this stipulation, Apple expresses its intention to have only the PTAB address any Instituted Grounds of invalidity of claims 1–19 of the '654 Patent.

Ex. 1028, 1 (emphasis added).

Having reviewed Petitioner's stipulation, we find that Petitioner's representation is consistent with *Sotera* and satisfies the condition set forth in the Director Memo for not discretionarily denying institution under *Fintiv* based on a *Sotera*-type stipulation. Accordingly, we decline to exercise our discretion to deny institution under § 314(a) in this proceeding.

B. Discretion Under 35 U.S.C. § 325(d)

Patent Owner contends that we should exercise our discretion to deny institution under 35 U.S.C. § 325(d) because the Petition "proposes invalidity grounds based on prior art and arguments cumulative to those previously before the USPTO" during prosecution of the '654 patent. Prelim. Resp. 30–31.

35 U.S.C. § 325(d) states, in relevant part: "In determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31, 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.” The Board uses a two-part framework for evaluating arguments under § 325(d):

- (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and
- (2) if either condition of first part of the framework is satisfied, 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 Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”). “Previously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent.” *Id.* at 7–8.

“[T]he *Becton, Dickinson* factors provide useful insight into how to apply the framework under 35 U.S.C. § 325(d).” *Id.* at 9 (footnote omitted).

The non-exclusive *Becton, Dickinson* factors are:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;

(e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first paragraph). *Becton, Dickinson* factors (a), (b), and (d) relate to the first part of the *Advanced Bionics* framework, i.e., whether the art or arguments presented in the Petition are the same or substantially the same as those previously presented to the Office. *Advanced Bionics* at 10. Factors (c), (e), and (f) relate to the second part of that framework, i.e., “whether the petitioner has demonstrated a material error by the Office” in its prior consideration of that art or arguments. *Id.* Only if the same or substantially the same art or arguments were previously presented to the Office do we then consider whether petitioner has demonstrated a material error by the Office. *Id.* “At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.* at 9.

Turning first to the issue of whether the same or substantially the same art or arguments were presented previously to the Office, Patent Owner does not allege that the Office previously considered any of the references on which Petitioner relies; instead, Patent Owner contends that the references in the Petition (Anthony and Hanggie) are cumulative of the

references previously presented to the Office, such as Sciammarella,⁴ Freeman,⁵ Prager,⁶ Kamiwada,⁷ and Iida.⁸ Prelim. Resp. 31.

In the Preliminary Reply, Petitioner responds that “the Petition asserts Anthony and Hanggie (with or without Matthews) *as combinations*, not in isolation.” Prelim. Reply 5. Petitioner argues that “[the Patent Owner Preliminary Response] is completely devoid of any discussion pertaining to the combination of Iida or Kamiwada with Sciammarella, Freeman, or Prager.” *Id.* at 4. Petitioner asserts that Patent Owner does not show “the Examiner considered anything resembling the Hanggie-Anthony or Anthony-Hanggie combinations” and, therefore, the asserted ground of the combination of Anthony and Hanggie is not cumulative. *Id.* at 5.

Under the specific facts of this case, we agree with Petitioner’s emphasis on the combined teachings of Anthony and Hanggie in Petitioner’s challenges to the claims of the ’654 patent. To paraphrase an expression, this is one case where the combination of the teachings of the prior art is greater than sum of its parts. As discussed below in Section III.F.3, Petitioner’s proposed combination of Anthony and Hanggie is fundamental to Petitioner’s theory of obviousness, relying on the combined teachings of Anthony and Hanggie in nearly all elements of the challenged claims. Thus,

⁴ U.S. Patent Application Publication No. 2002/0033848 A1 (Ex. 2008, “Sciammarella”).

⁵ U.S. Patent No. 6,725,427 B2 (Ex. 2006, “Freeman”).

⁶ U.S. Patent No. 6,768,999 B2 (Ex. 2007, “Prager”).

⁷ U.S. Patent Application Publication No. 2003/0179231 A1 (Ex. 2010, “Kamiwada”).

⁸ U.S. Patent Application Publication No. 2001/0050687 A1 (Ex. 2009, “Iida”).

we find that our § 325(d) inquiry in this case must consider the combination of Anthony and Hanggie to meaningfully evaluate *Becton, Dickinson* factors under the *Advanced Bionics* framework.

As discussed in Section III.F.3.b below, Petitioner relies on the combination of Anthony and Hanggie as teaching “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 applications within a two-dimensional space in response to said first interaction,” as recited in claim 1. Pet. 51–54. During the prosecution of the ’654 patent (or the ’142 application that led to the ’654 patent), the Examiner did not reject any claims but instead allowed the claims with the Examiner’s amendments, including those underlined in the claim language quoted above. *See* Ex. 1002, 12–20. In view of this record, although the ’654 patent lists on its face a number of prior art references cited by the Examiner, we agree with Petitioner that no combination of prior art substantially similar to the asserted combination of Anthony and Hanggie was considered during the prosecution of the ’654 patent.

In the Preliminary Sur-reply, Patent Owner does not argue the Examiner considered any combinations substantially similar to the asserted combination of Anthony and Hanggie during the prosecution of the ’142 application that led to the ’654 patent. Instead, Patent Owner asserts that several combinations substantially similar to Anthony and Hanggie, e.g., Gottesman and Freeman, were considered by the Examiner during the prosecution of the predecessor or ancestor applications to the ’142 application. Prelim. Sur-reply 4 (citing Ex. 2003, 92; Ex. 2004, 84, 139, 190).

Patent Owner, however, does not explain in any meaningful way the nature of the alleged combinations considered by the Examiner and how those combinations are cumulative. *See* Prelim. Sur-reply 4. “A reference is cumulative when it teaches no more than what a reasonable examiner would consider to be taught by the prior art already before the PTO.” *Regeneron Pharm., Inc. v. Merus N.V.*, 864 F.3d 1343, 1350 (Fed. Cir. 2017). Patent Owner does not explain how the asserted combination of Anthony and Hanggie teaches no more than the alleged combinations considered by the Examiner during the prior prosecution with respect to the teachings of Anthony and Hanggie on which Petitioner relies to meet the limitations of the challenged claims that were not before the Office during the prosecution of the predecessor applications to the ’142 application. *See* Prelim. Sur-reply 4.

Although Patent Owner was not required to submit a Preliminary Sur-reply (*see* Ex. 3001 (“We also grant Patent Owner permission to file a Sur-reply responding to Petitioner’s Reply.”)), once Patent Owner chose to submit a Preliminary Sur-reply, it was required, for any authorized argument and evidence it decided to present in the Sur-reply, to “inclu[de] ‘a detailed explanation of the significance of the evidence including material facts’ pursuant to 37 C.F.R. § 42.22.” *See Parus Holdings, Inc. v. Google LLC*, No. 2022-1269, ___ F.4th ___, 2023 WL 3939532, at *3 (quoting 37 C.F.R. § 42.22) (Fed. Cir. June 12, 2023). Under these circumstances, Patent Owner’s one-sentence, conclusory contention presented for the first time in the Preliminary Sur-reply is insufficient to warrant a meaningful analysis of discretionary denial under § 325(d) based on the alleged substantial similarity of the combinations purportedly considered by the Examiner

during the prosecution of the predecessor applications. *See id.* at *4 (the Board should not be forced to “play arch[a]eologist with the record” (quoting *General Access Solutions, Ltd. v. Sprint Spectrum L.P.*, 811 F. App’x 654, 657 (Fed. Cir. 2020) (unpublished))). Nonetheless, our review of the cited evidence by Patent Owner shows that the claims considered during the prior prosecution were materially different from the challenged claims in this proceeding. *See* Ex. 2003, 92; Ex. 2004, 84, 139, 190. Thus, there is no evidence that any combinations cumulative to the asserted combination of Anthony and Hanggie were considered during the prior prosecution with respect to the teachings of Anthony and Hanggie on which Petitioner relies to meet the limitations of the challenged claims in this proceeding.

Considering the *Becton, Dickinson* factors (a) the similarities and material differences between the asserted art and the prior art involved during examination and (b) the cumulative nature of the asserted art and the prior art evaluated during examination, based on the record presented, we determine no combination of prior art substantially the same as the asserted combination of Anthony and Hanggie was considered during the prosecution of the ’654 patent or during the prosecution of the predecessor applications.

Considering factor (d)—the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art—as noted above, no arguments were presented during the prosecution of the ’654 patent because the Examiner did not reject any claims during the prosecution but instead allowed the claims with the Examiner’s amendments. Ex. 1002, 12–20. Thus, based on the record presented, we determine that in its

reliance on the combination of Anthony and Hanggie, Petitioner does not present the same or substantially the same arguments previously presented to the Office.

Because neither condition of the first part of the *Advanced Bionics* two-part framework is satisfied, we need not proceed to the second part of the framework with respect to the ground based on the combination of Anthony and Hanggie. *See Advanced Bionics*, 10. Thus, § 325(d) is not implicated by Petitioner's reliance on the combination of Anthony and Hanggie in the Petition.

Turning next to the ground based on the combination of Anthony, Hanggie, and Matthews, Patent Owner does not assert Matthews or the combination of Anthony, Hanggie, and Matthews is substantially the same as any references or combination of references presented during prosecution. Prelim. Resp. 30–39; Prelim. Sur-reply 1–7. Nor does Patent Owner argue the same or substantially the same arguments previously were presented to the Office. Prelim. Resp. 30–39; Prelim. Sur-reply 1–7.

Based on the record presented and under the specific facts and circumstances of this case, we determine that § 325(d) is not sufficiently implicated here such that § 325(d)'s statutory purpose would be undermined by instituting on all challenges. Accordingly, we do not exercise our discretion to deny the Petition under 35 U.S.C. § 325(d).

C. Level of Ordinary Skill in the Art

The level of ordinary skill in the pertinent art at the relevant time is a factor in how we construe patent claims. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). It is also one of the factors

we consider when determining whether a patent claim is obvious over the prior art. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To assess the level of ordinary skill, we construct a hypothetical “person of ordinary skill in the art,” from whose vantage point we assess obviousness and claim interpretation. *See In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). This legal construct “presumes that all prior art references in the field of the invention are available to this hypothetical skilled artisan.” *Id.* (citing *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1993)).

Citing testimony from Dr. Fuchs, Petitioner asserts that a person of ordinary skill in the art (“POSITA”) as of September 13, 2005 (the earliest possible priority date of the ’654 patent) would have had “at least a Bachelor’s degree in electrical engineering, computer science, or a similar discipline, and at least two years of experience in the field working with 2D and 3D graphical user interfaces.” Pet. 10 (citing Ex. 1003 ¶¶ 31–32). Petitioner further states that “[s]uperior education could compensate for a deficiency in work experience, and vice-versa.” *Id.* (citing Ex. 1003 ¶¶ 31–32).

Although Patent Owner acknowledges Petitioner’s statement, Patent Owner does not dispute Petitioner’s articulation of the level of ordinary skill. Prelim. Resp. 20 (citing Pet. 10). Nor does Patent Owner propose a definition of its own at this time. *Id.* Instead, Patent Owner states: “at least the inventor of the ’654 Patent, E. Eddie Bakhach, is a POSITA, and [Patent Owner] reserves the right to further address this issue at a later point in time if necessary.” *Id.*

For purposes of this Decision, based on our review of the '654 patent, the types of problems and solutions described in the '654 patent, and the cited prior art, we adopt and apply Petitioner's definition of the level of ordinary skill in the art. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

D. Claim Construction

In an *inter partes* review, we construe a patent claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2022). In applying such standard, claim terms are generally given their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art, at the time of the effective filing date of the patent application and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

The parties agree that the claim terms “3D space” and “two-dimensional (2D) space” should be construed as “a virtual space defined by a three-dimensional coordinate system” and “a finite graphical area defined

by a two-dimensional coordinate system,” respectively. Pet. 10–11 (citing Ex. 1005,⁹ 6); Prelim. Resp. 21 (citing Ex. 2011,¹⁰ 7–19).

Petitioner notes that the parties dispute in the underlying District Court Litigation whether the preambles of the challenged independent claims are limiting. Pet. 11 (citing Ex. 1005, 7). Petitioner states that, to the extent the preambles are found limiting, the Petition addresses how the preambles are met by the asserted prior art references. *Id.* Patent Owner responds that we need not determine whether the preambles are limiting because “the prior art cited by Petitioner is so thoroughly deficient that the issue is rendered irrelevant.” Prelim. Resp. 21–22. We need not determine whether the preambles are limiting at this stage of the proceeding because, as discussed below in Sections III.F.3 and III.F.4 below, we find Petitioner shows sufficiently for purposes of institution that the combination of Anthony and Hanggie satisfies the preambles recited in the challenged independent claims.

Based on the record presented, we need not construe any claim term for purposes of this Decision. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

⁹ Petitioner’s Opening Claim Construction Brief, *SpaceTime3D, Inc. v. Apple Inc.*, No. 6:22-cv-00149 (W.D. Tex.).

¹⁰ Claim Construction Order, *SpaceTime3D, Inc. v. Samsung Electronics Co.*, No. 2:19-cv-00372 (E.D. Tex.).

E. Relevant Principles of Law

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham*, 383 U.S. at 17–18.

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)); accord *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1366–67 (Fed. Cir. 2012) (holding that “some kind of motivation must be shown from some source, so that the [trier of fact] can understand why a person of ordinary skill would have thought of either combining two or more references or modifying one to achieve the patented [invention]”). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

We analyze the asserted grounds based on obviousness with the principles identified above in mind.

F. Asserted Obviousness over Anthony and Hanggie

Petitioner asserts that claims 1–5, 7, 8, 10–13, 15–17, and 19 are unpatentable under § 103(a) over the combination of Anthony and Hanggie. Pet. 11–75.

In the Petition, Petitioner identifies “Anthony in view of Hanggie” as a separate ground from “Hanggie in view of Anthony.” Pet. 4. Nonetheless, Petitioner states that “both the combination of Hanggie and Anthony, and the combination of Anthony and Hanggie, would have resulted in the same features being combined in a similar manner to yield a combined system.” *Id.* at 34–35 (citing Ex. 1003 ¶ 79). Petitioner further explains that “although separate combinations [based on Anthony and Hanggie] are identified in this Petition, the mapping of the prior art references to the Challenged Claims . . . is the same under both combinations.” *Id.* at 35 (citing Ex. 1003 ¶ 79). Petitioner also presents its unpatentability contentions together for both grounds based on Anthony and Hanggie. *Id.* at 11–75. Patent Owner similarly addresses both grounds based on Anthony and Hanggie together. Prelim. Resp. 40–52.

Based on the record presented, for purposes of this Decision, we consider both grounds based on Anthony and Hanggie together, as presented in the Petition. *See In re Mouttet*, 686 F.3d 1322, 1333 (Fed. Cir. 2012) (“where the relevant factual inquiries underlying an obviousness determination are otherwise clear, characterization by the examiner of prior art as ‘primary’ and ‘secondary’ is merely a matter of presentation with no legal significance,” although “there may be some cases in which relevant

factual determinations inhere in such characterization of prior art references”).¹¹

I. Overview of Anthony (Ex. 1007)

Anthony describes a three-dimensional (3D) view of a data collection in a timeline to display files and folders. Ex. 1007, Abstr.

¹¹ To be clear, to the extent there exist material differences between the two grounds based on Anthony and Hanggie, we do not modify Petitioner’s grounds presented in the Petition. *See VLSI Tech. LLC v. Intel Corp.*, 53 F.4th 646, 654 (Fed. Cir. 2022) (“the petition defines the scope of the IPR proceeding and that the Board must base its decision on arguments that were advanced by a party and to which the opposing party was given a chance to respond”) (citing *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1336 (Fed. Cir. 2020); *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016)). Although we refer to the two grounds as a ground of obviousness based on Anthony and Hanggie in this Decision, this does not change Petitioner’s grounds, as presented in the Petition. *See Sirona Dental Sys. GmbH v. Institut Straumann AG*, 892 F.3d 1349, 1356 (Fed. Cir. 2018) (“The Board did not change theories simply because the petition did not use the exact words [used by the Board to describe the unpatentability contentions].”) (citing *Rambus Inc. v. Rea*, 731 F.3d 1248, 1255 (Fed. Cir. 2013) (“[T]he Board is not required to recite and agree with the examiner’s rejection *in haec verba* in order to ensure that the PTO has provided adequate notice.”)).

Figure 4 of Anthony is reproduced below.

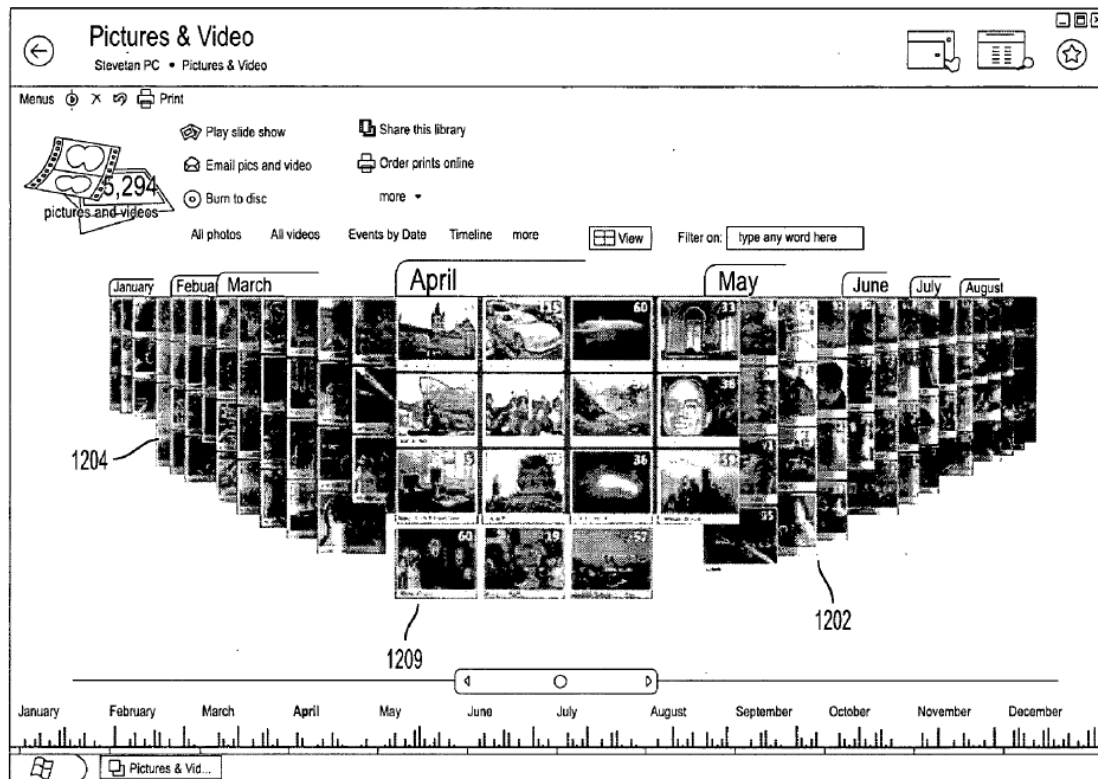


FIG. 4

Figure 4 of Anthony shows an exemplary dynamic timeline view of items stored on a computer. *Id.* ¶¶ 17, 42.

According to Anthony, a dynamic timeline view allows a user to view a set of items arranged chronologically and presented in a 3D GUI environment. *Id.* ¶ 43. Anthony describes that the 3D dynamic timeline view “allow[s] a user to freely navigate documents, files, or other data objects in a chronological manner, and allow[s] the user to change the point of focus to an arbitrary location on a timeline.” *Id.* ¶ 44. For example, “based on the number of items in a set on which the user is focused (e.g., the number of photographs taken in August 2003), the system may adjust the

dynamic timeline view in order to provide an improved browsing experience.” *Id.*

Figure 6 of Anthony is reproduced below.

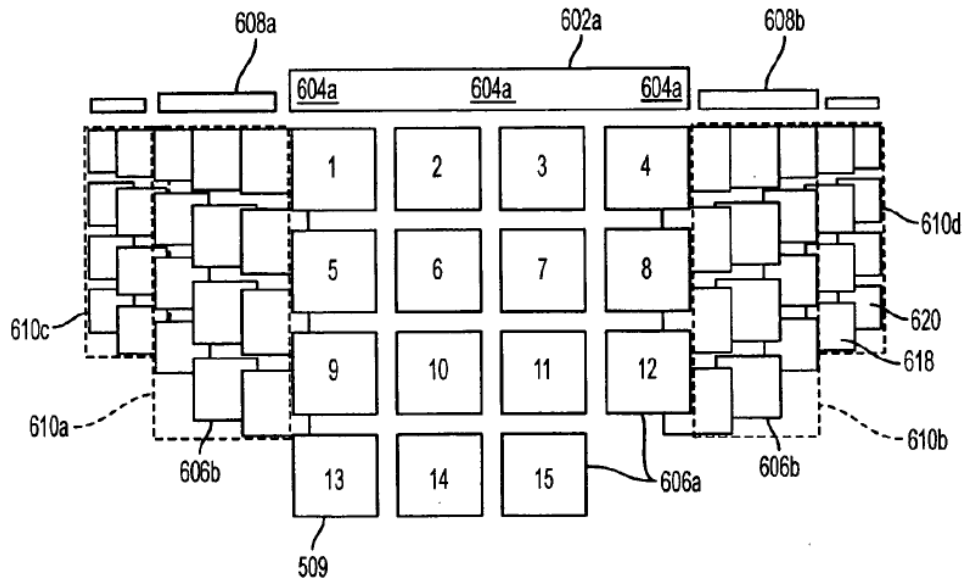


FIG. 6

Figure 6 illustrates a presentation of items in a focal group and various non-focal groups in an embodiment of Anthony. *Id.* ¶ 46.

Referencing Figure 6, Anthony describes that focal group 509 “may be made up of an array of focal group icons 606a (the numbered rectangular boxes) that represent items in the focal group 509.” *Id.* Anthony further describes that “[i]f an icon is a folder, double clicking on the folder will open the folder in a new dynamic timeline view . . . to show the items stored in it.” *Id.* ¶ 47. According to Anthony,

the views provided by the GUI are similar to what one would see if a conceptual camera moved along the files and folders placed in the timeline 500. In one aspect of the present invention, the conceptual camera is always positioned such that all of the items in the focal group 509 can be seen. Thus, the 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. ¶ 50.

Anthony further describes that animation may be used to transition from one focal group to another, using various 3D graphics technologies, such as DirectX and/or DirectX3D technologies. *Id.* ¶ 58. A user may change a focal group by using an actuating method, such as clicking on a non-focal group on the timeline or a new position in the histogram. *Id.* ¶ 59.

Figure 13 of Anthony is reproduced below.

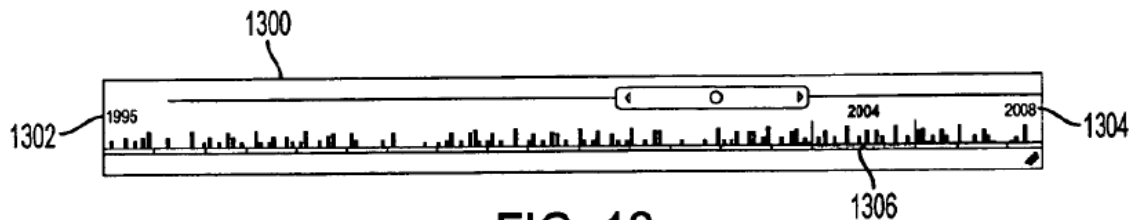


FIG. 13

Figure 13 illustrates histogram 1300 in an embodiment of Anthony. *Id.* ¶ 71.

Anthony describes that

the histogram may be laid out in a series of columns where there is a single column for each histogram interval. Each column may have a height associated with it, indicating an amount of data falling within that interval. In one embodiment, a series of bars 1306 are used to represent the number of files in the interval represented by the column relative to the number of files in other intervals.

Id. ¶ 72.

Anthony describes that histogram 1300 may be used to change the focal group displayed in a dynamic timeline view. *Id.* ¶ 78. According to

Anthony, “[i]n the case of a dynamic timeline view, clicking a column may cause the system to change the focal group from the current focal group (if different from the newly selected focal group) to the new focal group, optionally using animation as described above.” *Id.*

Anthony further describes that a jog control, shown as a scrolling bar in Figure 13 reproduced above, may also be used to scroll through the intervals of the dynamic timeline view. *Id.* ¶ 81. According to Anthony, “[w]hen the jog control is moved in a direction, the system responds by causing the conceptual camera that is focused on the focal group to begin moving along the dynamic timeline view as described in the section on Focal Group Animation above.” *Id.*

2. Overview of Hanggie (Ex. 1006)

Hanggie describes a 3D compositing desktop window manager (“CDWM”) for managing and rendering the desktop onto a single or multiple computer displays. Ex. 1006 ¶¶ 1, 15, Abstr. Hanggie describes that “[b]y taking advantage of the graphics rendering engine’s advanced texturing, lighting, and 3D capabilities . . . , the CDWM can compose a window 501 . . . within the 3D desktop environment.” *Id.* ¶ 83. Hanggie further describes that “[a]pplication window 301 may include various regions and components . . . including buttons 305 (e.g., used to restore, maximize, minimize, close the window, etc.), an indicative icon 307, scrollbars 309, menu bar 311, and window caption text 313.” *Id.* ¶ 58.

3. Analysis of Cited Art as Applied to Claim 1

Petitioner contends that the combination of Anthony and Hanggie teaches or suggests all elements of claim 1 and that a person of ordinary skill in the art would have been motivated to combine Anthony and Hanggie to obtain the subject matter of claim 1. Pet. 23–54. Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 40–52. At this stage of the proceeding, Patent Owner’s dispute mostly focuses on the limitation Petitioner identifies as limitation [1d-2] of claim 1, i.e., the “replacing” limitation. *See id.*

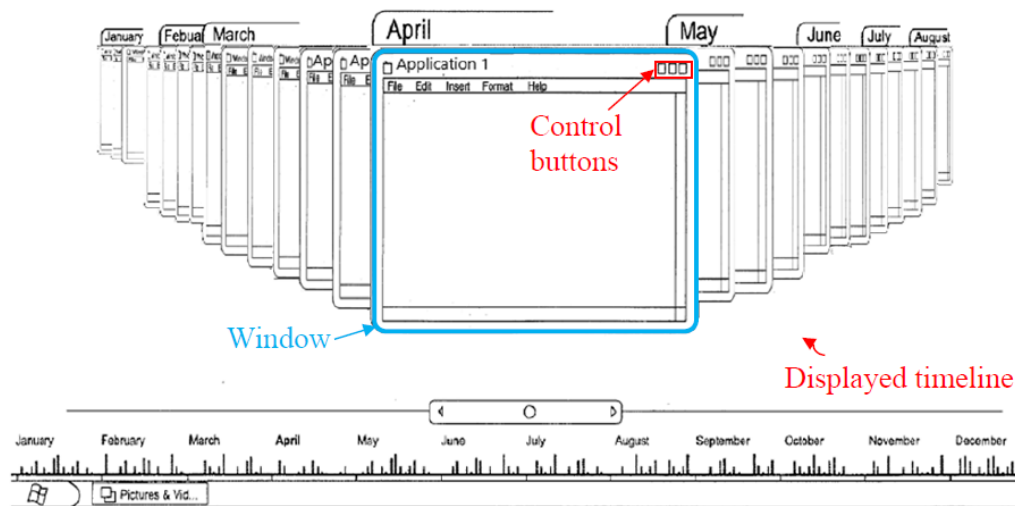
a. Overview of Petitioner’s Proposed Combinations of Anthony and Hanggie

In its proposed combination of Anthony and Hanggie, Petitioner relies on Anthony for its teaching of displaying a timeline depicting a plurality of items in focal groups. Pet. 23–24 (citing Ex. 1007, Fig. 4).¹²

¹² As discussed above, Petitioner states that “both the combination of Hanggie and Anthony, and the combination of Anthony and Hanggie, would have resulted in the same features being combined in a similar manner to yield a combined system.” Pet. 34–35 (citing Ex. 1003 ¶ 79). Petitioner further explains that “although separate combinations [based on Anthony and Hanggie] are identified in this Petition, the mapping of the prior art references to the Challenged Claims . . . is the same under both combinations.” *Id.* at 35 (citing Ex. 1003 ¶ 79). Thus, unless otherwise noted specifically, our discussion of Petitioner’s combination of Anthony and Hanggie in this Decision applies equally to the proposed combination of Hanggie and Anthony.

Petitioner therefore contends that it would have been obvious to combine the teachings of Anthony and Hanggie “such that the focal group windows depicted in Anthony’s FIG. 4 are replaced by application windows that are similar to those shown in Hanggie’s FIG. 3, and that incorporate several of the features described by Hanggie.” Pet. 24 (citing Ex. 1003 ¶ 63).

A figure illustrating Petitioner’s proposed combination is reproduced below.



Pet. 25. The figure reproduced above shows Dr. Fuchs’s illustration of Petitioner’s proposed combination of Anthony and Hanggie. Ex. 1003 ¶ 63; Pet. 24–25 (citing Ex. 1003 ¶ 63).¹³

Referencing the Dr. Fuchs-prepared figure reproduced above and citing the testimony of Dr. Fuchs, Petitioner asserts that

¹³ Petitioner presents the same figure illustrating Petitioner’s proposed combination of Hanggie and Anthony, relying on the combination of the same features as the combination of Anthony and Hanggie. Pet. 32–33.

consistent with Anthony's teachings, the POSITA would have found it obvious to organize the plurality of application windows within a dynamic timeline and, consistent with Hanggie's teachings, each of the plurality of application windows would feature a window caption and control buttons, with the buttons enabling selection between 2D and 3D viewing modes.

Pet. 25 (citing Ex. 1007 ¶¶ 42, 43, 11, Fig. 4, Abstr.; Ex. 1006 ¶ 58, Fig. 3; Ex. 1003 ¶ 64). Petitioner further contends that a person of ordinary skill in the art would have found it obvious to combine the teachings of Anthony and Hanggie to:

(1) implement one or more windows corresponding to one or more applications as displayed focal group windows in Anthony's timeline; (2) implement control buttons 305 on application windows within the timeline that would allow a user to restore, maximize, minimize, or close the windows; and (3) implement a control selection through which a user can switch between 2D and 3D viewing of the application windows.

Id. at 23 (citing Ex. 1003 ¶¶ 60–61).

b. Petitioner's Assertions Regarding Elements of Claim 1

(i) Preamble and Limitation [1c]

Addressing the preamble of claim 1, Petitioner cites to its discussion of the proposed combination of Anthony and Hanggie and argues that the combination of Anthony and Hanggie teaches a method for displaying a timeline of application windows. Pet. 35 (citing Pet. §§ V.A.1–V.A.4).¹⁴ Petitioner further argues that the windows can be associated with a plurality of applications, such as Microsoft Word, Excel, or Windows folders. *Id.* (citing Ex. 1007 ¶ 49; Ex. 1003 ¶ 85). Petitioner asserts, therefore, that the

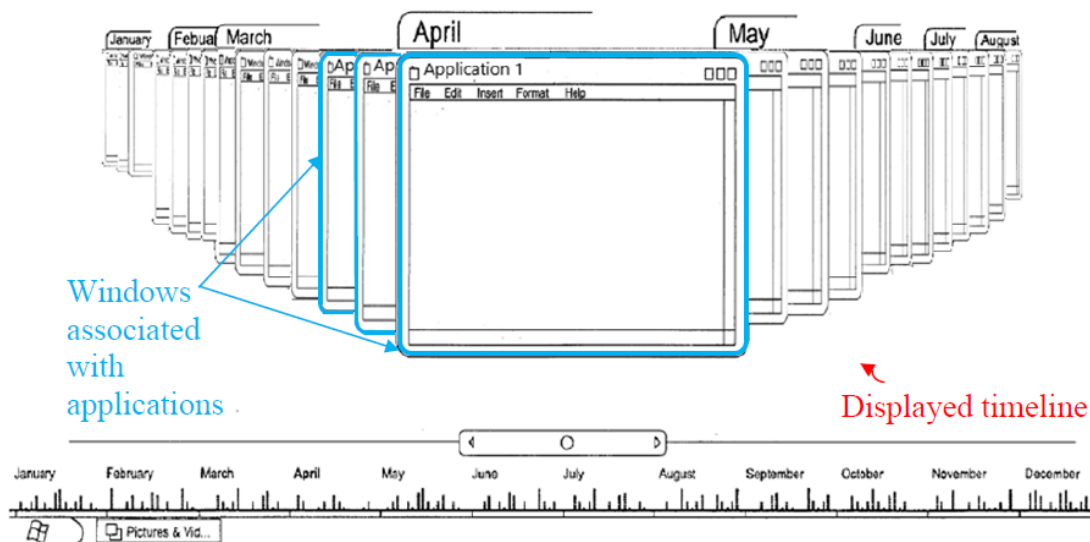
¹⁴ We understand Petitioner to cite to Sections VI.A.1–VI.A.4 of the Petition. See Pet. 11–31.

combination of Anthony and Hanggie teaches “[a] method for displaying a timeline associated with a plurality of applications,” as recited in the preamble of claim 1. *Id.*

Petitioner further asserts that the combination of Anthony and Hanggie similarly teaches “displaying on said display device said timeline associated with said plurality of applications,” as recited in claim 1 (limitation [1c]). Pet. 45 (citing Ex. 1003 ¶ 98).

(ii) Limitation [1c-1]

A second figure illustrating Petitioner’s proposed combination is reproduced below.



Pet. 45. The figure reproduced above shows Dr. Fuchs’s second illustration of Petitioner’s proposed combination of Anthony and Hanggie. Ex. 1003 ¶ 98; Pet. 45 (citing Ex. 1003 ¶ 98).

Referencing the second Dr. Fuchs-prepared figure reproduced above and citing the testimony of Dr. Fuchs, Petitioner contends that the combination of Anthony and Hanggie teaches “generating a plurality of

images, said plurality of images comprising at least first, second, and third images,” as recited in claim 1, because, as illustrated in the second Dr. Fuchs-prepared figure reproduced above (three windows associated with applications, annotated in blue), the GUI of the combination “would ***generate a plurality of images in the form of 3D windows that respectively correspond to the three 2D windows.***” Pet. 46 (citing Ex. 1006 ¶¶ 26, 57, 58, 59, Fig. 3; Ex. 1003 ¶ 99). Petitioner further asserts that Hanggie discloses that the application can generate an application window and attach any number of content objects to the application window. *Id.* (citing Ex. 1006 ¶¶ 49–50, 87–92). Citing the testimony of Dr. Fuchs, Petitioner argues that a person of ordinary skill would have understood that

for each of the three 3D application windows that is generated and displayed, the respective first, second, or third *application window is an image of at least a portion of an object* (e.g., 2D window) generated by said the respective application and having respective application-specific data (e.g., application data, application content object).

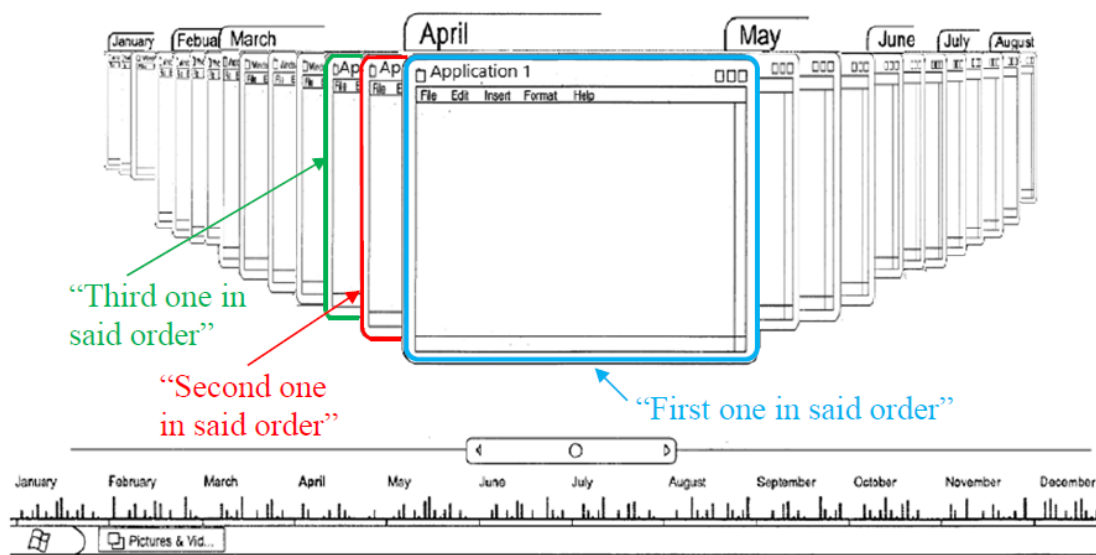
Id. at 48 (emphasis added) (citing Ex. 1003 ¶ 102). Thus, Petitioner asserts that the combination of Anthony and Hanggie teaches

generating a plurality of images, said plurality of images comprising at least first, second, and third images, wherein said first image is an image of at least a portion of a first object generated by said first application and having first application-specific data, said second image is an image of at least a portion of a second object generated by said second application and having second application-specific data, and said third image is an image of at least a portion of a third object generated by said third application and having third application-specific data;

as recited in limitation [1c-1] of claim 1. *Id.* at 45–48.

(iii) Limitation [1c-2]

Next addressing limitation [1c-2], Petitioner presents another figure prepared by Dr. Fuchs illustrating Petitioner's proposed combination, which is reproduced below.



Pet. 50. The figure reproduced above shows Dr. Fuchs's third illustration of Petitioner's proposed combination of Anthony and Hanggie. Ex. 1003 ¶ 104; Pet. 49–50 (citing Ex. 1003 ¶ 104).

Referencing the third Dr. Fuchs-prepared figure reproduced above and citing the testimony of Dr. Fuchs, Petitioner asserts that “Anthony explains that the multiple windows (**‘images’**) can be arranged according to a particular ‘ordering attribute,’ which may be based on chronologically in time ‘e.g., by using a date of creation or date of edit attribute as the ordering attribute.’” Pet. 48–49 (citing Ex. 1007 ¶ 42). Petitioner further contends that

It would have been obvious to a POSITA that the last date of edit of a window, in some cases, corresponds to the last time a user opened and interacted the window associated with an

application. Accordingly, each of HAC's 3D windows (*"plurality of images"*) are *displayed in an order based on a last time that the user opened and interacted with the window associated with an application.*

Id. at 49 (citing Ex. 1003 ¶ 104).

Referencing the third Dr. Fuchs-prepared figure reproduced above, Petitioner further argues that

As shown in the combination figure below, *the three windows can be displayed in an order from the foreground to behind the background* such that "a first one in said order is displayed in a foreground of said 3D immersive space, a second one in said order is displayed in a background of said 3D immersive space behind at least said first one in said order, and a third one in said order is displayed in said background of said 3D immersive space behind at least said second one in said order."

Pet. 49 (emphasis added) (citing Ex. 1003 ¶ 104).

Thus, Petitioner asserts that the combination of Anthony and Hanggie teaches or suggests limitation [1c-2] reciting

displaying said plurality of images in a three-dimensional space on said display device in an order based on a last time that said user one of (i) opened said first application and interacted with said first object, (ii) opened said second application and interacted with said second object, and (iii) opened said third application and interacted with said third object, such that a first one in said order is displayed in a foreground of said three-dimensional space, a second one in said order is displayed in a background of said three-dimensional space, behind at least said first one in said order, and a third one in said order is displayed in a background of said three-dimensional space, behind at least said second one in said order.

Pet. 48–50.

(iv) Limitations [1a] and [1b]

Turning next to limitation [1a] reciting “receiving a plurality of inputs from a user, said plurality of inputs comprising at least first, second, and third inputs,” Petitioner asserts that the combination of Anthony and Hanggie teaches limitation [1a] because Anthony and Hanggie disclose that user inputs can be received through input devices such as a keyboard, a pointing device, or a stylus. Pet. 39–40 (citing Ex. 1007 ¶ 38 (describing input devices including keyboard 162, pointing device 161, and stylus input device 193), Fig. 1; Ex. 1006 ¶ 5, Fig. 1A; Ex. 1003 ¶ 91).

Addressing limitation [1b], Petitioner contends that the combination of Anthony and Hanggie teaches “opening said plurality of applications in response to said plurality of inputs” because Anthony discloses that “[i]f an icon 606a in the focal group 509 represents a file, double-clicking the file will cause the system to attempt to open the file” (Pet. 40 (quoting Ex. 1007 ¶ 47)) and Hanggie discloses receiving requests to create a window and attach a content object (*id.* (citing Ex. 1006 ¶¶ 50, 51, 88)).

Petitioner further asserts that when a user double-clicks on an application file, Hanggie discloses generating an application window (the recited “object”) “having content (***‘application-specific data’***) corresponding to the application file selected by the user.” Pet. 41 (citing Ex. 1006 ¶¶ 5, 15, 49–50, 60, Abstr.; Ex. 1003 ¶ 95). Petitioner argues that in Hanggie “[a] user may choose to display the window in a legacy drawing mode, which is 2D, when desired (e.g., to preserve power) by making such a selection via a user control.” *Id.* at 41–42 (citing Ex. 1006 ¶¶ 42, 92). According to Petitioner, in Hanggie content related to the applications can include “e.g., text by a word processor, numeric grid by a spreadsheet

application, or images by a photo editing application.” *Id.* at 42–43 (citing Ex. 1006 ¶ 60).

Citing the testimony of Dr. Fuchs, Petitioner contends that “[i]t would have been obvious to a POSITA and well known in the art, that a user can interact with 2D windows to modify at least a portion of the application content (‘application-specific data’).” Pet. 43 (citing Ex. 1003 ¶ 96). Petitioner argues that “[f]or 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.” *Id.* (citing Ex. 1003 ¶ 96).

Thus, Petitioner asserts that the combination of Anthony and Hanggie teaches or suggests limitation [1b] reciting

opening said plurality of applications in response to said plurality of inputs, said plurality of applications comprising at least first, second, and third applications, wherein each one of said plurality of applications is configured to (i) generate an object having application-specific data, (ii) display said object on a display device, and (iii) allow said user to modify at least a portion of said application-specific data by interacting with said object.

Pet. 41–44.

(v) Limitation [1d]

Turning next to limitation [1d] reciting “allowing said user to modify at least a portion of one of said first, second, and third application-specific data,” Petitioner contends Hanggie teaches that each “window may be comprised of a base content object (i.e., the frame) and a collection of one or more child content objects. Each content object may be defined by a unique

set of content attributes, and can be configured to optionally receive keyboard and mouse events.” Pet. 50 (citing Ex. 1006 ¶ 60). Citing the testimony of Dr. Fuchs, Petitioner further asserts that

It was well known in the art that “content objects[] 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” were *modifiable by the user* through the input devices, e.g., *modifying text in a word processor application* through a user selection of a key on a keyboard.

Id. at 50–51 (emphases added) (citing Ex. 1006 ¶ 60; Ex. 1003 ¶ 105).

Thus, Petitioner asserts that the combination of Anthony and Hanggie teaches or suggests limitation [1d] of claim 1. Pet. 50–51.

(vi) Limitations [1d-1] and [1d-2]

Addressing limitation [1d-1], Petitioner contends that Hanggie discloses 3D windows that include buttons 305 that can be “used to restore, maximize, minimize, close the window, etc.” Pet. 51 (citing Ex. 1006 ¶ 58, Fig. 3; Ex. 1003 ¶ 107). Petitioner asserts that the user selecting the maximize button for a 3D window in the combined GUI of Anthony and Hanggie teaches “receiving a first interaction from said user with one of said plurality of images corresponding to one of said plurality of applications,” as recited in limitation [1d-1] of claim 1. *Id.* at 51–52 (citing Ex. 1003 ¶ 108).

Petitioner further contends that when a user selects the maximize button for a window, the combined GUI of Anthony and Hanggie “would have allowed the user to view the window in a ‘maximum’ capacity such that it occupies all or almost all parts of the computer display.” Pet. 52 (citing Ex. 1003 ¶ 108); *see also id.* at 26–27 (“with expectations

surrounding the Microsoft Windows environments described by each of Anthony and Hanggie, a POSITA would have understood and found it obvious that a maximized window would occupy all, or almost all, parts of a display” (citing Ex. 1003 ¶ 67)). Citing the testimony of Dr. Fuchs, Petitioner argues that it would be obvious to a person of ordinary skill in the art to display the maximized window *as a 2D window* to “allow the user to more intuitively and easily interact with the window.” *Id.* at 52–53 (citing Ex. 1006 ¶ 92; Ex. 1003 ¶ 108).

Petitioner argues that a person of ordinary skill in the art would have been motivated to implement the maximize control button in this manner because “it would not be necessary to expend computing resources on rendering the 3D timeline while a window is in a maximized state” and switching from a 3D mode to a 2D mode would “reduce graphics processing and thereby conserve battery power.” Pet. 27–28 (citing Ex. 1003 ¶ 69). Thus, Petitioner asserts that “using the maximize button to switch to a 2D viewing of the window” would have been obvious. *Id.* at 53 (citing Ex. 1003 ¶ 108).

Petitioner asserts that, in the proposed combination of Anthony and Hanggie, by selecting a maximize button on a 3D window in the timeline, “the window would be reconfigured in the legacy mode and displayed in 2D to occupy all or most parts of the screen in a ‘maximum’ capacity.” Pet. 53 (citing Ex. 1003 ¶ 108). According to Petitioner, “[s]uch a maximized 2D window would then *replace* the display of the dynamic timeline and any windows within the timeline.” *Id.* (emphasis added) (citing Ex. 1003 ¶ 108).

Thus, Petitioner asserts that the combination of Anthony and Hanggie teaches or suggests “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 applications within a two-dimensional space in response to said first interaction,” as recited in limitation [1d-2] of claim 1. Pet. 51–53.

(vii) Limitations [1d-3] and [1d-4]

Turning next to limitation [1d-3] reciting “receiving a second interaction by said user with said one of said first, second, and third objects within said two-dimensional space,” Petitioner contends that the combination of Anthony and Hanggie teaches or suggests this limitation because Hanggie discloses receiving text input from a user with a maximized word processing application window. Pet. 54 (citing Ex. 1006 ¶ 88). Citing the testimony of Dr. Fuchs, Petitioner further argues “[i]t would also have been obvious to a POSITA that when a user would like to interact with multiple 2D windows, the computer would have received multiple user interactions for the user to interact with the multiple windows (e.g., second and third objects) in the 2D space.” *Id.* (citing Ex. 1003 ¶ 111).

Lastly, addressing limitation [1d-4] reciting “modifying said one of said first, second, and third application-specific data in response to said second interaction,” Petitioner asserts that the combination of Anthony and Hanggie teaches or suggests this limitation because “[a]s is known in the art, in response to a user entering a key on a keyboard when interacting with a Microsoft® Word® application window, application-specific data, such as the text content in the window is modified to reflect the input key” and application-specific data in the multiple 2D windows discussed above “would have been modified similar to the single window example.” Pet. 54 (citing Ex. 1003 ¶ 111).

(viii) Reasons to Combine Anthony and Hanggie

As discussed above in an overview of Petitioner's proposed combination of Anthony and Hanggie (Section III.F.3.a), Petitioner asserts, referencing the Dr. Fuchs-prepared figure reproduced above, that

consistent with Anthony's teachings, the POSITA would have found it obvious to organize the plurality of application windows within a dynamic timeline and, consistent with Hanggie's teachings, each of the plurality of application windows would feature a window caption and control buttons, with the buttons enabling selection between 2D and 3D viewing modes.

Pet. 25 (citing Ex. 1007 ¶¶ 42, 43, 11, Fig. 4, Abstr.; Ex. 1006 ¶ 58, Fig. 3; Ex. 1003 ¶ 64). Petitioner further contends that a person of ordinary skill in the art would have found it obvious to combine the teachings of Anthony and Hanggie to:

(1) implement one or more windows corresponding to one or more applications as displayed focal group windows in Anthony's timeline; (2) implement control buttons 305 on application windows within the timeline that would allow a user to restore, maximize, minimize, or close the windows; and (3) implement a control selection through which a user can switch between 2D and 3D viewing of the application windows.

Id. at 23 (citing Ex. 1003 ¶¶ 60–61).

Addressing the reasons to combine Anthony and Hanggie, Petitioner asserts that a person of ordinary skill in the art would have been motivated to organize and represent application windows in this manner because, among other reasons,

A POSITA would . . . have recognized that implementing Hanggie's control buttons 305 in Anthony's focal group windows such that the user could close, minimize, maximize, or restore a window when desired by selecting a corresponding button would be consistent with user expectations, would be

convenient to the user, and would assist the user in interacting with applications represented within the timeline. For example, control buttons of this nature would have been understood to provide a user with more control over the information displayed within the timeline and application windows, and to allow the user to view or interact with a particular window only when desired.

Pet. 26 (citing Ex. 1006 ¶ 56, Fig. 3; Ex. 1003 ¶ 66).

As discussed above, Petitioner also argues that a person of ordinary skill in the art would have been motivated to implement the maximize control button to display the maximized window as a 2D window—i.e., to switch to a 2D viewing of the maximized window—because doing so would have “allow[ed] the user to more intuitively and easily interact with the window” (Pet. 52–53 (citing Ex. 1006 ¶ 92; Ex. 1003 ¶ 108)) and because a person of ordinary skill in the art would have understood that switching from a 3D mode to a 2D mode would “reduce graphics processing and thereby conserve battery power” (*id.* at 27–28 (citing Ex. 1003 ¶ 69)).

Petitioner further contends that the combination would have been foreseeable and predictable because Anthony and Hanggie are directed to similar systems and use the same or similar software for rendering 3D graphics. Pet. 28 (citing Ex. 1003 ¶ 71). Petitioner explains

For instance, . . . Anthony’s computer system, as depicted in Anthony’s FIG. 1, is highly similar to Hanggie’s computer system shown in Hanggie’s FIG. 1A (e.g., compare Hanggie and Anthony’s system memory 130, hard disk drive 141, processing unit 120, monitor 191/184). Further, Anthony and Hanggie both disclose using the same or similar 3D Graphics software such as Direct3D®, or OpenGL® to enable 3D viewing of objects (*see* Anthony’s ¶[0043] (“The 3D environment may be implemented utilizing graphics technology such as DirectX®, Direct3D®, OpenGL®, GDI, a media integration layer, or some other

presentation platform as is known in the art. In some embodiments, 3D objects (which contain 3D properties) may be utilized to provide the 3D effect”) and Hanggie’s ¶[0047] (“The 3D Graphics Interface 195 may include a ... graphics service such as Direct3D®, OpenGL®, or the like.”)[)].

Id. at 28–29 (citing Ex. 1003 ¶ 71). Petitioner further asserts that “the combination of Hanggie’s teachings with Anthony’s would yield the predictable results of Anthony’s system providing standard captions and control buttons for application windows represented within its 3D timeline, and being able to switch between 3D and 2D interface modes.” *Id.* at 28 (citing Ex. 1003 ¶ 70).

Petitioner argues, therefore, a person of ordinary skill in the art would have combined Anthony and Hanggie in the manner proposed with a reasonable expectation of success because “doing so would have involved nothing more than combining prior art elements according to known methods to yield predictable results.” Pet. 28 (citing Ex. 1003 ¶ 70).

c. Patent Owner’s Arguments Regarding Elements of Claim 1 and Our Analysis

Patent Owner presents several arguments asserting that the combination of Anthony and Hanggie does not teach all elements of claim 1. Prelim. Resp. 40–52. As discussed above, Patent Owner’s arguments mostly focus on the limitation Petitioner identifies as limitation [1d-2] of claim 1, i.e., the “replacing” limitation. *See* Prelim. Resp. 40–52; Prelim. Sur-reply 7–10. We address each of Patent Owner’s arguments in turn.

First, Patent Owner asserts that the combination of Anthony and Hanggie does not teach the “replacing” limitation because claim 1 requires “switching from a 3D space to a 2D space,” whereas in Anthony and

Hanggie “everything occurs on a single 3D GUI” and “[t]here is no switching from one space to another.” Prelim. Resp. 41. Patent Owner similarly argues that “[c]laim 1 requires switching from 3D space to 2D space, where an individual application replaces the plurality of images.” Prelim. Sur-reply 8. Citing the Bakhsh Declaration, Patent Owner asserts that Hanggie does not teach the “replacing” limitation because “[Hanggie’s] ‘maximize’ button merely enlarges the window to occupy all, or almost all, parts of a display” and “does not change the functionality of the window”—i.e., “[t]here is no switching from 3D to 2D” in Hanggie. Prelim. Resp. 47 (citing Ex. 2001 ¶ 33). In the cited paragraph of his Declaration, Mr. Bakhsh opines that

In Hanggie, not only is everything presented in 3D space, but the windows themselves are 3D. This can be seen in Figure 3, 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.*

Ex. 2001 ¶ 33 (emphasis added).

Claim 1, however, does not recite “switching from a 3D space to a 2D space.” Instead, the “replacing” limitation recites “*replacing* said plurality of *images* within said three-dimensional space *with* one of said . . . *objects corresponding to said one of said plurality of applications* within a two-dimensional space.” Ex. 1001, 38:25–29 (emphases added).

As discussed above, Petitioner relies on the multiple 3D windows in the dynamic timeline of the combination of Anthony and Hanggie as teaching the recited “plurality of images within said three-dimensional space.” Pet. 48–49. Petitioner also relies on the maximized window of an application displayed in a 2D mode in the combination of Anthony and

Hanggie as teaching the recited “one of said . . . objects corresponding to said one of said plurality of applications within a two-dimensional space.” *Id.* at 41–42, 52–53. As also discussed above, Petitioner asserts that it would have been obvious to implement the maximize button of the combined GUI of Anthony and Hanggie to switch from a 3D viewing mode to a 2D viewing mode and display the maximized window in a 2D mode of the window. *Id.* at 53. Petitioner argues that selecting a maximize button on a 3D window in the combined GUI of Anthony and Hanggie teaches or suggests the “replacing” limitation because all or most parts of the display of the 3D windows in the timeline (the recited “plurality of images within said three-dimensional space”) would be occupied or replaced (the recited “replacing said plurality of images within said three-dimensional space”) with the maximized window displayed in 2D (the recited “one of said . . . objects corresponding to said one of said plurality of applications within a two-dimensional space”). *Id.* Thus, at least based on the plain language of the claim, Petitioner’s mapping appears to meet the claim language of the “replacing” limitation.

Turning to the Specification, Patent Owner asserts that “the ‘654 Patent makes clear that, in one embodiment, ‘the end user can toggle or switch between 2D and 3D.’” Prelim. Resp. 49 (quoting Ex. 1001, 21:34–56). Patent Owner argues that “[i]t is this feature that is claimed in the ‘654 Patent and missing from Hanggie”—i.e., switching between a 2D space and a 3D space. *Id.*

The portion of the Specification cited by Patent Owner is reproduced below.

When the viewpoint of the end user within a virtual space has caused the webpage to be drawn in skew, there will often be a distortion in shape of the normal distribution toward one side or the other. In such a case, the 3D GUI system utilizes the Bind to the HUD feature whereby *clicking an icon* or bottom (*analogous to the minimize in windows operating system environment*) *triggers a change to the viewpoint* of the end user *within the virtual space* so that the webpage is directly in an end user's visual field, thereby making it easier to interact with. In one embodiment, this is accomplished by revealing *the 2D version of the webpage* that was initially hidden or drawn off screen and positioning it in a layer that is in front of the 3D virtual space such that the end user can interact with this layer in 2D. Furthermore, the end user has the freedom to unbind to the hud or hide the 2D webpage again that was initially hidden or drawn off screen by clicking the appropriate button (again, analogous to the minimize button in the windows operating system environment). As such, *an end user can toggle or switch between 2D and 3D for any selectively captured computing output and information (webpages, applications, documents, desktops or anything that can be visualized on a computer) that was drawn within a 3D virtual space* at will by using this technique.

Ex. 1001, 21:34–56 (emphases added).

In contrast to Patent Owner's argument that the cited paragraph shows that the claim requires switching between a 2D space and a 3D space, Petitioner argues that the cited paragraph of the Specification instead "describes switching viewpoints" to toggle between the 2D and 3D versions of a webpage and, therefore, is consistent with Petitioner's position that the Anthony-Hanggie's switching from a 3D viewing mode to a 2D viewing mode to display the maximized window in a 2D mode meets the "replacing" limitation. Pet. 53.

Based on the record presented, for purposes of institution, we find Petitioner’s position to be more persuasive. Reading the entire paragraph as a whole, we view the cited paragraph as describing a user clicking on an icon (or a windows control) to “trigger[] a change to the viewpoint of the end user within the virtual space” and display “the 2D version of the webpage . . . such that the end user can interact with this layer in 2D.” Ex. 1001, 21:34–47. Similarly, the cited paragraph describes that “an end user can toggle or switch between 2D and 3D for any . . . webpages, applications,” etc., “that was drawn within a 3D virtual space.” *Id.* at 21:42–56. We find no disclosure of “switching from a 3D space to a 2D space” in the cited paragraph. Moreover, even if it did, Patent Owner does not point to description containing lexicography, disavowal, or another basis to limit the otherwise broader claim language to such an example in the Specification.

Patent Owner’s quotation of “the end user can toggle or switch between 2D and 3D” from the Specification (to support its argument that the claim requires switching between a 2D space and a 3D space) appears out of context of the cited paragraph, which describes switching between the display of the 2D and 3D *versions of a webpage* or application, not switching between a 2D space and a 3D space. More importantly, Patent Owner does not explain adequately why the cited paragraph of the Specification supports interpreting the “replacing” limitation as requiring “switching from a 3D space to a 2D space.”

Based on the current record, we preliminarily agree with Petitioner that, to the extent the cited paragraph of the Specification describes an embodiment of the “replacing” feature recited in the claim, the cited

paragraph supports Petitioner's position and does not support Patent Owner's position on the "replacing" limitation.

In the Preliminary Sur-reply, Patent Owner argues that it is "***not construing*** the 'replacing' limitation but ***merely summarizing*** its relationship to other claim limitations" to conclude "[c]laim 1 requires switching from 3D space to 2D space." Prelim. Sur-reply 8. Again, Patent Owner does not explain adequately why the "replacing" limitation's "relationship to other claim limitations" requires "switching from 3D space to 2D space," which is not recited in the claim or described in the Specification.

Based on the record presented, we preliminarily determine that claim 1 does not require "switching from 3D space to 2D space." Thus, for purposes of institution, Patent Owner's argument does not undermine Petitioner's persuasive showing.

Next, Patent Owner argues that claim 1 requires "(1) switching from ***a plurality of inactive images*** to an ***individual, active application***; and (2) ***replacing*** the plurality of images (including the image that is being interacted with) with an individual, active application," but "***[n]either of these features are present in the combination***" of Anthony and Hanggie argued by Petitioner. Prelim. Resp. 45.

In the Preliminary Reply, Petitioner responds that the terms "*inactive* images" and "*active* application" are not recited in the claim and that Patent Owner does not explain sufficiently why claim 1 should be construed to add the terms "inactive" and "active" not recited in the claim. Prelim. Reply. 8–9.

In addition, Petitioner asserts that the combination of Anthony and Hanggie teaches or suggests the “replacing” limitation even under Patent Owner’s proposed claim construction that requires “replacing said plurality of *inactive* images . . . with an *individual, active* application.” Prelim. Reply 8–10. According to Petitioner,

As explained in the Petition, Anthony’s system (including when combined with Hanggie) teaches displaying various types of items that include “a visual representation of a file, folder, virtual folder, or any other data object that may be stored in an operating system and/or file system, for example, icons, thumbnails, and the like.”

Id. at 9 (citing Pet. 10–12; Ex. 1007 ¶¶ 42, 36, 38). Petitioner argues that a person of ordinary skill in the art would have understood that Anthony-Hanggie’s displayed windows or focal groups would have included or represented “a plurality of *inactive or active items* depending on the data type or application.” *Id.* at 9–10 (emphasis added).

Petitioner further asserts that, as explained in the Petition, when Anthony’s dynamic timeline displays inactive images in 3D in the form of *inactive* application windows with control buttons, it would have been obvious to a person of ordinary skill in the art that “selection of a maximize button corresponding to a particular application window would cause that window to *replace* the [inactive] images previously displayed in 3D with a 2D window that is *active* to receive user inputs.” Prelim. Reply 10 (emphases added) (citing Pet. 35–54; Ex. 1003 ¶¶ 106–112). Petitioner further explains

As one example, a plurality of inactive web browser windows may be displayed as images in HAC’s dynamic 3D timeline. And, upon user selection of the maximize button for one of the web browser windows, the selected window is maximized and

displayed in 2D space such that the associated browser can receive subsequent user inputs, and such that the maximized window replaces the 3D space and associated images.

Id. (citing Ex. 1003 ¶¶ 40, 129). Thus, Petitioner contends that the combination of Anthony and Hanggie teaches or suggests the “replacing” limitation even under Patent Owner’s proposed claim construction. *Id.*

In the Preliminary Sur-reply, Patent Owner does not respond to Petitioner’s argument. Instead, Patent Owner argues that “[c]laim 1 requires switching from 3D space to 2D space.” Prelim. Sur-reply 7–8. Patent Owner’s argument is unpersuasive for the reasons discussed above.

Patent Owner next argues that in the combination of Anthony and Hanggie “*maximizing a window* would not result in going from an inactive image of an application to an active version of the application, as claimed.” Prelim. Resp. 46 (emphasis added). Patent Owner asserts that “[i]nstead, *it would merely result in enlarging the active window that was presented in 3D space.*” *Id.* Patent Owner argues that

there is no “*replacing said plurality of images* within said three-dimensional space *[including the image being interacted with]* 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 the first interaction.”

Id. (citing Ex. 1001, 37:44–38:35).

Patent Owner’s argument is unavailing because Patent Owner does not address Petitioner’s proposed combination of Anthony and Hanggie. As discussed above, in the proposed combination of Anthony and Hanggie, Petitioner *modifies* the teachings of Hanggie and combines them with Anthony such that when a user selects the maximize button for a 3D window in Anthony’s timeline, the maximized window is displayed *as a 2D window*

to “allow the user to more intuitively and easily interact with the window.” Pet. 52–53 (citing Ex. 1006 ¶ 92; Ex. 1003 ¶ 108). Petitioner further explains that, in the proposed combination of Anthony and Hanggie, by selecting a maximize button on a 3D window in the timeline, “the window would be reconfigured in the legacy mode and displayed in 2D to occupy all or most parts of the screen in a ‘maximum’ capacity.” *Id.* at 53 (citing Ex. 1003 ¶ 108). According to Petitioner, “[s]uch a maximized 2D window would then *replace* the display of the dynamic timeline and any windows within the timeline.” *Id.* (emphasis added) (citing Ex. 1003 ¶ 108).

Patent Owner’s argument is unpersuasive because a finding of obviousness cannot be overcome “by attacking references individually where the rejection is based upon the teachings of a combination of references.” *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1050 (Fed. Cir. 2019) (quoting *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986)). In addition, “KSR does not require that a combination *only unite old elements* without changing their respective functions.” *ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1219 (Fed. Cir. 2016) (emphasis added) (citing *KSR*, 550 U.S. at 416); *see also Google LLC v. Ji-Soo Lee*, 759 F. App’x 992, 997 (Fed. Cir. 2019) (“Our obviousness framework permits modifying one reference and combining it with a second reference.” (citing *Smith & Nephew, Inc. v. Rea*, 721 F.3d 1371, 1380 (Fed. Cir. 2013))) (non-precedential).

Next, Patent Owner argues that the maximized window in the combination of Anthony and Hanggie does not teach the “replacing” limitation because “while a maximized window in Hanggie may prevent the user from seeing other items in 3D space, *it would not replace the window*

that is being maximized.” Prelim. Resp. 51. Patent Owner similarly argues the maximized window does not teach the “replacing” limitation because “while the window may get bigger, *it does not replace itself.*” Prelim. Sur-reply 10 (emphasis added).

At this stage of the proceeding, we find Patent Owner’s argument unavailing because the “replacing” limitation recites “*replacing said plurality of images within said three-dimensional space with one of said . . . objects corresponding to said one of said plurality of applications within a two-dimensional space*” (Ex. 1001, 38:25–29 (emphases added)), not replacing a 3D image with a 2D version of the image itself.

Patent Owner also asserts that the combination of Anthony and Hanggie does not teach “generating a plurality of images,” as recited in claim 1, because “Hanggie’s . . . window having content (‘application-specific data’)” is “not an ‘image,’ but an active application.” Prelim. Resp. 50.

Petitioner, however, relies on Hanggie’s application window as teaching the recited “object,” not the recited “plurality of images.” As discussed above with respect to limitation [1b], Petitioner asserts that when a user double-clicks on an application file, Hanggie discloses generating an application window (the recited “object”) “having content (‘**application-specific data**’) corresponding to the application file selected by the user.” Pet. 41 (citing Ex. 1006 ¶¶ 5, 15, 49–50, 60, Abstr.; Ex. 1003 ¶ 95); *see also id.* at 50–51 (discussing that the application-specific content object data of Hanggie’s application window (the recited “object”) are modifiable by a user). As also discussed above with respect to limitation [1c-2], Petitioner

relies on the 3D windows in Anthony’s timeline as teaching the recited “plurality of images within said three-dimensional space.” *Id.* at 48–49.

Thus, Patent Owner’s argument is unavailing because it does not address Petitioner’s proposed combination of Anthony and Hanggie. In addition, Patent Owner’s argument is unpersuasive because a finding of obviousness cannot be overcome “by attacking references individually where the rejection is based upon the teachings of a combination of references.” *Bradium*, 923 F.3d at 1050.

d. Conclusion Regarding Anthony and Hanggie as Applied to Claim 1

Having reviewed Petitioner’s and Patent Owner’s arguments, and the evidence of record, we are persuaded that Petitioner sufficiently establishes, for purposes of institution, that the combined teachings of Anthony and Hanggie account for all elements of claim 1,¹⁵ and that a person of ordinary skill in the art would have been motivated to combine the teachings, as proposed by Petitioner, with a reasonable expectation of success.

4. Analysis of Cited Art as Applied to Independent Claims 10 and 19

Petitioner asserts that independent claim 10 is a system claim that recites device components performing the same or similar functions recited in claim 1. Pet. 66–72. Petitioner similarly argues that the preamble of claim 10 is a system preamble corresponding to the method preamble of claim 1. *Id.* at 66. For the preamble and functions recited in claim 10,

¹⁵ We determine that Petitioner establishes sufficiently for purposes of institution that the combination of Anthony and Hanggie teaches the preamble of claim 1 and, therefore, need not decide at this stage whether the preamble is a limitation. *See Vivid Techs.*, 200 F.3d at 803.

Petitioner cites to and relies on its analysis of claim 1 discussed above. *Id.* at 66, 71–72. Regarding independent claim 19, Petitioner also cites to and relies on its analysis of claim 1 discussed above, arguing that claim 19 either recites the same or similar limitations recited in claim 1 or recites “information on a plurality of applications” instead of “a timeline associated with a plurality of applications” recited in claim 1. *Id.* at 73–75.

Patent Owner similarly argues independent claims 1, 10, and 19 together and does not respond specifically to Petitioner’s challenges to claims 10 and 19 beyond Patent Owner’s arguments advanced with respect to claim 1 discussed above. *See* Prelim. Resp. 40–51.

As for the device recitations of claim 10, i.e., a “display device,” an “input device,” a “processor,” and a “memory device,” Petitioner provides detailed analysis showing where it contends each of these device limitations is taught in the combination of Anthony and Hanggie, which we find sufficiently persuasive on the current record and at this stage of the proceeding. *See* Pet. 66–71.

Based on the record before us, we are persuaded that Petitioner sufficiently establishes, for purposes of institution, that the combined teachings of Anthony and Hanggie account for all elements of independent claims 10 and 19,¹⁶ and that a person of ordinary skill in the art would have been motivated to combine the teachings, as proposed by Petitioner, with a reasonable expectation of success.

¹⁶ We determine that Petitioner establishes sufficiently for purposes of institution that the combination of Anthony and Hanggie teaches the preambles of claims 10 and 19 and, therefore, need not decide at this stage whether the preambles are limiting. *See Vivid Techs.*, 200 F.3d at 803.

5. *Analysis of Cited Art as Applied to Dependent Claims 2–5, 7, 8, 11–13, and 15–17*

a. *Claims 8 and 17*

Claim 8 depends from claim 1 and recites

The method of claim 1, wherein said step of replacing said plurality of images with one of said first, second, and third objects, further comprises 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 device.

Ex. 1001, 39:9–15. Claim 17 depends from claim 10 and recites essentially the same limitations as claim 8. *Compare id.* at 39:9–15, *with id.* at 40:64–41:3.

Regarding claim 8, Petitioner contends that “[i]t would have been obvious to a POSITA that 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” and that “[i]n gradually[] increasing its size to cover the display area, the computer simulates movement of said one (window whose maximize button has been selected) of said plurality of images in a z-axis of said display device.” Pet. 65–66 (citing Ex. 1003 ¶ 129). As for claim 17, Petitioner cites to and relies on its analysis of claim 8 discussed above. *Id.* at 73.

Patent Owner asserts Petitioner’s argument is flawed because “it is not a *window* that is enlarged in Claim 8 (and Claim 17), but the *selected image*.” Prelim. Resp. 52.

Contrary to Patent Owner’s argument, Petitioner in fact argues enlarging the size of the recited “image” when a maximize button is selected

in the combination of Anthony and Hanggie. As discussed above, in the proposed combination of Anthony and Hanggie, the 3D windows in Anthony's timeline (the recited "image") would feature application windows with control buttons as taught by Hanggie. Pet. 24–25, 51–52. Addressing claim 8, Petitioner states "[a]s explained in [1d-1], a maximize button is included on each window (*image*) corresponding to the first, second, and third applications." *Id.* at 65 (emphasis added) (citing Ex. 1006 ¶ 58, Fig. 3). Petitioner further argues that "[i]t would have been obvious to a POSITA that 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." *Id.* (emphasis added).

Thus, Patent Owner's argument is unavailing because it does not address Petitioner's proposed combination of Anthony and Hanggie. In addition, Patent Owner's argument is unpersuasive because a finding of obviousness cannot be overcome "by attacking references individually where the rejection is based upon the teachings of a combination of references." *Bradium*, 923 F.3d at 1050.

Based on the record before us, we are persuaded that Petitioner sufficiently establishes, for purposes of institution, that the combined teachings of Anthony and Hanggie account for all elements of dependent claims 8 and 17.

b. Claims 2–5, 7, 11–13, 15, and 16

Claims 2–5 and 7 depend from claim 1 and claims 11–13, 15, and 16 depend from claim 10. Petitioner provides detailed analysis showing where it contends each limitation of dependent claims 2–5, 7, 11–13, 15, and 16 is taught in the combination of Anthony and Hanggie, which we find

sufficiently persuasive on the current record and at this stage of the proceeding. Pet. 55–65, 72–73.

Patent Owner does not respond specifically to Petitioner’s challenge to these dependent claims beyond Patent Owner’s arguments advanced with respect to independent claims 1 and 10 discussed above. *See* Prelim. Resp. 51–52.

Based on the record before us, we are persuaded that Petitioner sufficiently establishes, for purposes of institution, that the combined teachings of Anthony and Hanggie account for all elements of dependent claims 2–5, 7, 11–13, 15, and 16.

6. *Objective Indicia of Nonobviousness*

As part of our obviousness analysis, we also consider whether objective indicia of nonobviousness (i.e., secondary considerations) may lead to a conclusion that the challenged claims would not have been obvious. *See, e.g., Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538–39 (Fed. Cir. 1983) (instructing that evidence of secondary considerations, when present, must always be considered in determining obviousness).

Objective evidence of nonobviousness “is only relevant to the obviousness inquiry ‘if there is a nexus between the claimed invention and the [objective indicia of nonobviousness].’” *In re Affinity Labs of Tex., LLC*, 856 F.3d 883, 901 (Fed. Cir. 2017) (quoting *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312 (2006)). A “nexus” is a legally and factually sufficient connection between the objective evidence and the claimed invention such that the objective evidence should be considered in the determination of obviousness. *Henny Penny Corp. v. Frymaster LLC*,

938 F.3d 1324, 1332 (Fed. Cir. 2019); *see In re Paulsen*, 30 F.3d 1475, 1482 (Fed. Cir. 1994). A presumption of nexus arises where “the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000))); *accord Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 723 F.3d 1363, 1372 (Fed. Cir. 2013) (explaining that a “presumption of a nexus” exists where a product is “coextensive” with a patent claim). If, however, the patented invention is only a component of the commercial embodiment, the patentee is not entitled to a presumption of nexus. *Fox Factory*, 944 F.3d at 1374. In addition, “[a] patent claim is not coextensive with a product that includes a ‘critical’ unclaimed feature that is claimed by a different patent and that materially impacts the product’s functionality.” *Id.* at 1374–75. But, “[a] finding that a presumption of nexus is inappropriate does not end the inquiry into secondary considerations;” rather, “the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is ‘the direct result of the unique characteristics of the claimed invention.’” *Id.* at 1374 (quoting *In re Huang*, 100 F.3d 125, 140 (Fed. Cir. 1996)). Patent Owner bears the burden of establishing that a nexus exists between the evidence of secondary considerations and the patented invention. *Id.* at 1373.

Patent Owner presents arguments and evidence related to objective indicia of nonobviousness. Prelim. Resp. 53–55. In support, Patent Owner relies on the Bakhsh Declaration. *Id.* (citing Ex. 2001 ¶¶ 13–24).

Patent Owner discusses, primarily, objective indicia of nonobviousness in the form of industry praise received by “technical journals and newspapers.” Prelim. Resp. 53 (citing Ex. 2001 ¶¶ 13–15). According to Patent Owner, “there is a ‘nexus’ between the claimed invention and the industry praise. . . . 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’” *Id.* at 54 (quoting Ex. 2001 ¶ 16). However, *TechNewsWorld* (Exhibit E to the Bakhsh Declaration) does not clearly identify the claimed invention or any of its features. *See* Ex. 2001 ¶ 16, pp. 83–85 (Ex. E). It simply describes “[a]n innovative three-dimensional search program” and a “browser.” *Id.* at 83–85 (Ex. E). A nexus between the *claimed invention* and the industry praise is not sufficiently shown.

Similarly, Patent Owner states that “Samsung sent emails to SpaceTime3D expressing interest in its technology and inviting SpaceTime3D to present its technology at Samsung’s headquarters.” Prelim. Resp. 54 (citing Ex. 2001 ¶¶ 17–24). However, it is unclear from reading the emails (Ex. 2001, Exs. F–J) that they are referring to the claimed invention. All they mention is SpaceTime “technology and solutions.” *See* Ex. 2001 ¶¶ 17–23, pp. 86–98 (Exs. F–J).

Patent Owner further contends that “Samsung acquired licenses to several SpaceTime3D patents, including the ‘654 Patent” and that “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.” Prelim. Resp. 54 (citing Ex. 2001 ¶ 24). However, there is insufficient information about the license on this record,

making it difficult at this stage to ascertain whether this amounts to evidence of commercial success, as Patent Owner appears to suggest. *Id.*

We have considered the evidence of industry praise and commercial success, but find it insufficiently developed at this stage of the proceeding to have sufficient weight to preclude a finding of a reasonable likelihood of success on this ground.

7. Conclusion

Based on our consideration of the record before us, and for the reasons shown above, we determine that Petitioner establishes sufficiently that the combination of Anthony and Hanggie teaches or suggests all elements of claims 1–5, 7, 8, 10–13, 15–17, and 19. We also determine that the evidence of objective indicia of nonobviousness is insufficiently developed at this stage of the proceeding to outweigh Petitioner’s evidence of unpatentability for purposes of institution. Accordingly, we determine that Petitioner establishes a reasonable likelihood of prevailing in showing that claims 1–5, 7, 8, 10–13, 15–17, and 19 are unpatentable under § 103(a) over the combination of Anthony and Hanggie.

G. Asserted Obviousness over Anthony, Hanggie, and Matthews

In this asserted ground of obviousness, Petitioner adds the teachings of Matthews to the combination of Anthony and Hanggie and challenges dependent claims 6, 9, 14, and 18 as obvious over the combination of Anthony, Hanggie, and Matthews. Pet. 75–84.

Claims 6 and 9 depend from claim 1 and claims 14 and 18 depend from claim 10. Petitioner asserts that the combination of Anthony, Hanggie, and Matthews teaches or suggests the additionally recited limitations of

claims 6, 9, 14, and 18. *Id.* at 78–84. Petitioner provides detailed analysis showing where it contends each limitation of dependent claims 6, 9, 14, and 18 is taught in Matthews alone or in combination with Anthony and Hanggie, which we find sufficiently persuasive on the current record and at this stage of the proceeding. *Id.* Citing the testimony of Dr. Fuchs, Petitioner also explains persuasively that person of ordinary skill in the art would have combined Matthews with Anthony and Hanggie because doing so would merely involve combining prior art elements according to known methods to yield predictable results. *Id.* at 78 (citing Ex. 1003 ¶ 84).

Patent Owner does not respond specifically to Petitioner’s challenge to these dependent claims beyond Patent Owner’s arguments advanced with respect to independent claims 1 and 10 discussed above. *See* Prelim. Resp. 52–53.

As discussed above in Section III.F.6, we have considered the evidence of industry praise and commercial success, but find it insufficiently developed at this stage of the proceeding to outweigh Petitioner’s evidence of unpatentability for purposes of institution.

Based on the record before us, we determine that Petitioner establishes a reasonable likelihood of prevailing in showing that claims 6, 9, 14, and 18 are unpatentable under § 103(a) over the combination of Anthony, Hanggie, and Matthews.

IV. CONCLUSION

For the foregoing reasons, taking into account the arguments and evidence presented in the Preliminary Response, Preliminary Reply, and Preliminary Sur-reply, we conclude that the information presented in the Petition establishes a reasonable likelihood that Petitioner would prevail in

proving that at least one challenged claim of the '654 patent is unpatentable. Accordingly, we institute an *inter partes* review of all challenged claims based on the grounds asserted in the Petition.

At this stage of the proceeding, we have not made a final determination as to the patentability of any of the challenged claims. Our final determination will be based on the record as fully developed during trial.

V. ORDER

In consideration of the foregoing, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review is hereby instituted as to claims 1–19 of the '654 patent on all grounds presented in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, commencing on the entry date of this Decision.

IPR2023-00343
Patent 9,304,654 B2

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