

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE INC. and APPLE INC.,
Petitioners,

v.

JONGERIUS PANORAMIC TECHNOLOGIES, LLC,
Patent Owner.

Case IPR2013-00191
Patent 6,563,529 B1

Before KARL D. EASTHOM, JONI Y. CHANG, and
MICHAEL R. ZECHER, *Administrative Patent Judges*.

CHANG, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Google Inc. and Apple Inc. (collectively “Google”) filed a Petition on March 15, 2013, requesting an *inter partes* review of claims 1–6, 10–15, 17–19, 21, 23–25, 27, and 28 of U.S. Patent No. 6,563,529 B1 (Ex. 1001; “the ’529 patent”). Paper 6 (“Pet.”). In response, Jongerius Panoramic Technologies, LLC (“JPT”) filed a Preliminary Response. Paper 11 (“Prelim. Resp.”). Taking into account JPT’s Preliminary Response, we determined that the information presented in the Petition demonstrated that there was a reasonable likelihood that Google would prevail with respect to claims 1–6, 10–15, 17–19, 21, 23–25, 27, and 28. Pursuant to 35 U.S.C. § 314, we instituted this trial as to all the challenged claims. Paper 12 (“Dec.”).

After institution, JPT filed a Patent Owner Response (Paper 28, “PO Resp.”), and Google filed a Reply to the Patent Owner Response (Paper 32, “Pet. Reply”). JPT also filed a Motion to Amend Claims (Paper 29 “Mot. Amend”); Google filed an Opposition to JPT’s Motion to Amend Claims (Paper 33, “Pet. Opp.”); and JPT then filed a Reply to Google’s Opposition (Paper 40, “PO Reply”). Oral hearing was held on April 3, 2014.¹

We have jurisdiction under 35 U.S.C. § 6(c). This final written decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons set forth below, we conclude that Google has shown by a preponderance of the evidence that claims 1–6, 10–15, 17–19, 21, 23–25, 27, and 28 of the ’529 patent are unpatentable. JPT’s Motion to Amend Claims is denied.

¹ A transcript of the oral hearing is included in the record as Paper 69.

A. Related Proceeding

Google indicates that the '529 patent is asserted in *Jongerius Panoramic Technologies, LLC. v. Google, Inc.*, No. 12-03798-YGR (N.D. Cal.). Pet. 4.

B. The '529 patent

The '529 patent relates to computer-simulated or virtual touring of scenes. Ex. 1001, Abs. The '529 patent describes an interactive system for displaying both a detailed view of an area and a map of the area simultaneously. *Id.* Figure 4 of the '529 patent is reproduced below:



As depicted by Figure 4 of the '529 patent, the computer display has two sections, left section 40 showing the detailed view and right section 38 showing the map. *Id.* at 3:12–15, 5:12–15. The map is a top view of the area and includes compass rose 10 to show geographical directions and dot 30 to show the position of the camera from which the panoramic image has been taken. *Id.* at 5:1–5. Viewed area 36 is highlighted to show visually the

area of section 40. *Id.* at 5:8–11, 20–22. Whenever the user changes the field of view in section 40, the highlighted section shown in section 38 will change automatically and simultaneously to show the new field of view. *Id.* at 6:13–16.

C. Illustrative Claim

Of the challenged claims, claims 1, 10, 17, and 23 are independent claims. Claim 1 is illustrative and reproduced as follows:

1. A method for displaying a detailed view of an area within a territory, taken from a predetermined location within said territory, and indicating the area and direction in which said detailed view is taken from within said territory, comprising:

providing a display that can display a map of a territory and a *detailed view of an area within said territory*, said detailed view being taken from a predetermined location within said territory,

displaying said map of said territory on said display,

displaying said detailed view, as taken from said predetermined location within said territory, as an image on said display,

providing *an input means* for a human operator to change the angular direction and area of said detailed view as seen from said location within said territory,

using said input means to change said angular direction and said area of said detailed view, thereby to move virtually through said territory,

indicating on said map said angular direction and said area of said detailed view, thereby providing, on said map, an indication of said angular direction and said area of said detailed view as seen from said location within said territory,

causing any change in said angular direction and said area of said detailed view to be simultaneously indicated by a corresponding change in said indication on said map, such that both said detailed view and said indication on said map change substantially simultaneously,

thereby to create a highly interactive display, which allows a human operator to better understand, by looking at said map, the area and direction of said detailed view.

Ex. 1001, 10:11–44 (emphases added).

D. Prior Art Relied Upon

Google relies upon the following prior art references:

Chan	US 6,346,938 B1	Feb. 12, 2002	(Ex. 1005)
Prouty	US 6,097,393	Aug. 1, 2000	(Ex. 1020)

Wilbert O. Galitz, *The Essential Guide to User Interface Design* (Ch.1; Ex. 1009), 13–50 (Ch. 2; Ex. 1010), 91–148 (Step 3; Ex. 1011), 486–514 (Step 9; Ex. 1012) (Wiley Computer Publishing 1997) (“Galitz”).

Shou-Kang Wei et al., *Color Anaglyphs for Panorama Visualizations*, 19 COMMUNICATION AND INFORMATION TECHNOLOGY RESEARCH TECHNICAL REPORT (1998) (Ex. 1006) (“Wei”).

Patrick Naughton & Herbert Schildt, *Java 1.1: The Complete Reference* xxv–xxvi (McGraw-Hill, 2nd Ed. 1998) (Preface; Ex. 1013), 3–16 (Ch. 1; Ex. 1014), 17–39 (Ch. 2; Ex. 1015), 269–304 (p.) (Ex. 1016), 559–584 (Ch.18; Ex. 1017), 585–619 (Ch.19; Ex. 1018), 621–663 (Ch. 20) (Ex. 1019) (“Naughton”).

Jason Dykes et al., *Virtual Environments for Student Fieldwork Using Networked Components*, 13(4) INTERNATIONAL JOURNAL OF GEOGRAPHICAL INFORMATION SCIENCE 397–416 (1999) (Ex. 1007) (“Dykes”).

E. Grounds of Unpatentability

We instituted the instant trial based on the following grounds of unpatentability:

Claims	Basis	References
1, 4–6, 17, 23, 28	§ 102(e)	Chan
1, 4, 5, 17, 21, 23, 27	§ 102(b)	Wei
10, 13–15	§ 103(a)	Chan and Naughton
2, 3, 11, 12, 18, 19, 24, 25	§ 103(a)	Chan, Galitz, and Naughton
15, 21, 27	§ 103(a)	Chan and Prouty
2, 3, 10–15, 18, 19, 21, 24, 25	§ 103(a)	Wei and Naughton
6, 28	§ 103(a)	Wei and Dykes

II. ANALYSIS

A. Claim Construction

Consistent with the statutory language and legislative history of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), we interpret claims using the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In the Decision on Institution, we set forth the claim constructions for three claim terms and four means-plus-function elements under 35 U.S.C. § 112, ¶ 6.² Dec. 7–15. Specifically, we applied the following claim constructions in the Decision on Institution:

Claim Terms	Claim constructions
Detailed view	A detailed display of data or an image from a given perspective or location. Dec. 8.
Synchronizer	Software or computer code that runs on a computer to perform the recited functions. Dec. 9.
The origin	The position from which the detailed view is taken. Dec. 9.

Means-Plus-Function Claim Elements	Corresponding Structures
Detail display means for displaying a detailed view of an area within a territory, as seen from a point within said territory, and for enabling a user to change the origin, area, and angular direction of said area shown in said detailed view	A microprocessor programmed to perform the algorithms of (a) outputting all or part of an image for display (e.g., lines 193–336 of pmvr.java); (b) changing the all or part of the image displayed in response to user input (e.g., lines 403–433, 480–515 and 552–575 of pmvr.java); and an image viewer. Ex. 1001, 4:25–39, 5:45–50, 59–67, 6:45–63, 7:34–67, 8:1–36, 9:1–21; Dec. 12.

² Section 4(c) of the AIA re-designated 35 U.S.C. § 112, ¶ 6, as 35 U.S.C. § 112(f). Pub. L. No. 112-29, 125 Stat. 284, 296–307 (2011). Because the '529 patent has a filing date before September 16, 2012 (effective date), we will refer to the pre-AIA version of 35 U.S.C. § 112 in this decision.

Means-Plus-Function Claim Elements	Corresponding Structures
Map display means for displaying a map of said territory and indicating the origin, area, and angular direction of said area within said territory, as shown in said detailed view	A microprocessor programmed to perform the algorithms of (a) outputting all or part of an image for display (<i>e.g.</i>, lines 19 – 226 of floorplan.java); (b) rendering on the image a graphical indication of the origin, area, and angular direction shown in the detailed view (<i>e.g.</i>, lines 189–219 of floorplan.java); and an image viewer. Ex. 1001, 4:60–67, 5:1–11, 50–58, 7:20–55; Dec. 11–12.
Input means for a human operator to change the angular direction and area of said detailed view as seen from said location within said territory	A mouse or keyboard. Ex. 1001, 1:39–42, 4:31–36; Dec. 14–15.
Synchronization means for changing, in said map, the origin, area, and angular direction of said territory shown in said detailed view, said changing occurring in response to and in correspondence with changes in the origin, area, and angular direction of said territory shown in said detailed view, or for changing said detailed view in response to and in correspondence with changes in the origin, area, and angular direction of said detailed view of said area of said territory shown in said map	A microprocessor programmed to perform the algorithm of (a) upon detecting a change to the detail display causing the map display means to render on the map display a graphical indication of the origin, area, and angular direction corresponding to the new detailed display (<i>e.g.</i>, lines 290–316 of pmvr.java and 147–157 of floorplan.java), or (b) upon detecting a change to the map display causing the detail display means to change all or part of the image displayed (<i>e.g.</i>, lines 122–130 of pmvr.java and lines 267–272 of floorplan.java). Ex. 1001, 8:25–27; Dec. 13–14.

The parties do not contest our interpretations for the claim terms “synchronizer” and “the origin,” as well as the means-plus-function claim elements identified above. However, JPT proposes a different claim construction for the claim term a “detailed view” and Google disagrees with JPT’s proposed construction. PO Resp. 6; Pet. Reply 3. We have reviewed the parties’ arguments and supporting evidence, and discern no reason to modify the claim constructions set forth in the Decision on Institution. We address JPT’s arguments regarding the claim term a “detailed view” below.

Claim 1 recites “providing a display that can display a map of a territory and a *detailed view* of an area within a territory . . . displaying said detailed view . . . as an image on said display.” Ex. 1001, 10:16–24 (emphasis added). JPT asserts that the claim term “detailed view” should be construed as “part of a *panoramic image* that is constructed from one or more *photographs or video* taken from a location within a territory.” PO Resp. 6 (citing Ex. 2008 ¶ 17) (emphases added). Google responds that JPT’s proposed claim construction improperly would import limitations from the Specification into the claims. Pet. Reply 3. We agree with Google that JPT’s claim construction is unreasonably narrow.

There is a “heavy presumption” that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). An inventor may rebut the presumption by providing a definition of the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Here, JPT has not alleged that the inventor of the ’529 patent acted as his own lexicographer and provided a special definition in the

Specification for the claim term a “detailed view” that is different from its recognized meaning to one with ordinary skill in the art.

As Google points out, the Specification of the ’529 patent is not limited to *photographs or video* images. Pet. Reply 4. Indeed, the Specification of the ’529 patent indicates that one of the objectives for the disclosed invention is “to provide an improved *virtual image* viewing and panning system.” Ex. 1001, 2:30–31 (emphasis added). It also provides an example, in the Background section, that uses “a *virtual camera*,” and defines the term “virtual” as “computer-simulated.” Ex. 1001, 1:36–37, 2:7–25. As Google notes, JPT’s expert witness, Dr. Michael Neff, stated that “a *virtual image* is a synthetic image,” and it is “an image that does not exist in the *real world*.” *Id.* (citing Ex. 1026, 11:4–5) (emphasis added). Therefore, in light of the Specification of the ’529 patent, one of ordinary skill in the art would not have excluded *virtual images* from the term “detailed view,” or limited the term “detailed view” to only photographs or video taken from a location within a territory.

Accordingly, we decline to import the limitations—“part of a *panoramic image* that is constructed from one or more *photographs or video* taken from a location within a territory”—from a preferred embodiment disclosed in the Specification into the claims, as urged by JPT. *See Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1354 (Fed. Cir. 2012) (“While claim terms are understood in light of the specification, a claim construction must not import limitations from the specification into the claims.”); *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1371 (Fed. Cir. 2003) (Even in cases where a patent describes only a single embodiment, courts have rejected the

contention that the claims of the patent must be construed as being limited to that embodiment.).

In the context of the claimed subject matter and the Specification of the '529 patent, the term “view” ordinarily is understood as “the display of data or an image from a given perspective or location.” See MICROSOFT COMPUTER DICTIONARY 497 (3rd ed. 1997) (Ex. 3001) (defining “view” as “n. 1. The display of data or an image from a given perspective or location.”). Therefore, in light of the Specification, we construe the claim term a “detailed view” broadly, but reasonably, as a detailed display of data or an image from a given perspective or location.

B. Principles of Law

To establish anticipation, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). While the elements must be arranged or combined in the same way as in the claim, “the reference need not satisfy an *ipsissimis verbis* test,” i.e., identity of terminology is not required. *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009); *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990). “A reference anticipates a claim if it discloses the claimed invention such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention.” *In re Graves*, 69 F.3d 1147, 1152 (Fed. Cir. 1995). This means prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *Paulsen*, 30 F.3d at 1480. Moreover, “it

is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826 (CCPA 1968).

A patent 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 said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

In that regard, an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *see Translogic*, 504 F.3d at 1259. A prima facie case of obviousness is established when the prior art, itself, would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976). The level of ordinary skill in the art may be reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

We analyze the instituted grounds of unpatentability in accordance with the above-stated principles.

C. Grounds of Unpatentability based on Chan, by itself or in Combination with Other References

1. Claims 1, 4–6, 17, 23, and 28—Anticipated by Chan

Google asserts that claims 1, 4–6, 17, 23, and 28 are unpatentable under 35 U.S.C. § 102(e) as anticipated by Chan. Pet. 10–18. In support of this asserted ground of unpatentability, Google provides detailed explanations as to how each claim limitation is met by Chan, as well as the Declaration of Dr. Michael S. Braasch. *Id.* (citing Ex. 1003 ¶¶ 59–78).

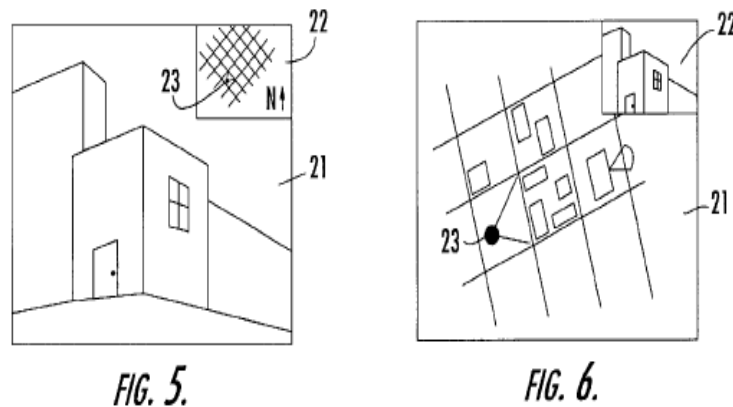
JPT counters that Chan does not disclose all of the claim limitations recited in independent claims 1, 17, and 23. PO Resp. 4–15. As support, JPT proffers the Declaration of Dr. Neff. *Id.* (citing Ex. 2008 ¶¶ 17–33). Claims 4–6 depend from claim 1, and claim 28 depends from claim 23.

Upon consideration of the parties’ contentions and supporting evidence, we determine that Google has demonstrated by a preponderance of evidence that claims 1, 4–6, 17, 23, and 28 are anticipated by Chan. In our analysis below, we address JPT’s arguments presented in the Patent Owner Response, focusing on the disputed claim limitations.

Chan

Chan relates to computer-simulated or virtual touring of scenes. Ex. 1005, Abs. Specifically, Chan describes a digital-image processing system for displaying simultaneously views of a three-dimensional (3D) image and a map of a geographic scene. *Id.* at 1:8–16, 1:40–49. The system provides a user interface for navigating within the in-scene view of the 3D image—e.g., “street level” movement through an urban scene. *Id.* at 1:49–67, 2:9–11.

Figures 5 and 6 of Chan are reproduced below:



As shown in Figure 6, inset viewport 22 shows a 3D view of an urban scene (a detailed view), and main viewport 21 shows a map of the same scene (a map view). *Id.* at 5:28–31. In Figure 5, the views are switched—insert viewport 22 displays a map and main viewport 21 displays a 3D view of the urban scene. *Id.* at 5:25–27. Location 23 is the user's position from which the scene has been taken. *Id.* at 9:4–14. The in-scene view represents what would be seen by a user located in the 3D scene, showing how a person is able to view his or her surroundings within the in-view scene. *Id.* at 2:38–49. The user may change the location and orientation in the scene, using either a joystick or mouse. *Id.* at 2:11–12, 3:37–49.

Detailed view

Claim 1 recites “a detailed view of an area within a territory, said detailed view being taken from a predetermined location with said territory.” Claims 17 and 23 each recite “a display for displaying a detailed view of an area within a territory as seen from a point within said territory.”

In its Petition, Google asserts that Chan's in-scene view of a geographic scene discloses the “detailed view” claim features. Pet. 11–12,

15, 17. JPT counters that Chan does not disclose “a detailed view of an area of a territory, as seen from a point within said territory,” as recited in claims 17, 23, and 28. PO Resp. 5–7, 11, 15. According to JPT, Chan does not disclose a “detailed view” because Chan does not describe “*a panoramic image that is constructed from one or more photographs or video taken from a location within that territory.*” *Id.* at 6, 11 (emphases added). Google responds that, under a proper claim construction, Chan discloses a “detailed view” when disclosing “an in-scene view . . . [of a] 3D perspective of the virtual world.” Pet. Reply 4 (citing Ex. 1005, 9:6).

As discussed above, we decline to adopt JPT’s overly narrow proposed claim construction, importing limitations—“a panoramic image that is constructed from one or more photographs or video taken from a location within a territory”—from the Specification into the claims. Rather, in light of the Specification, we construe the claim term a “detailed view” broadly, but reasonably, as the detailed display of data or an image from a given perspective or location.

Chan describes a digital-image processing system for displaying simultaneously views of a 3D image and a map of a geographic scene, such as an urban scene at the street level. Ex. 1005, 1:8–2:12, Figs. 5–6. In particular, the 3D image of the urban scene, shown in main viewport 21 of Figure 5 of Chan, displays an in-scene view (a detailed view), representing what would be seen by a user located in the 3D urban scene (an area within a territory). *Id.* at 2:38–49, Fig. 5. Applying the proper claim construction, we determine that Chan’s in-scene view of a 3D image of a geographic scene discloses a “detailed view of an area within a territory,” as recited in claims 1, 17, and 23. Ex. 1005, 1:45–49, 9:4–8 (“The in-scene view . . .

closely approximates how an upright human would typically view his/her surroundings within the 3D scene”); Figs. 5–7.

JPT also argues that Chan’s in-scene view is not “taken from a predetermined location within said territory,” as required by claim 1. PO Resp. 11–13. In particular, JPT alleges that Chan’s focus is to create views of a 3D scene from any location within the scene and is not limited to predefined locations. *Id.* (citing Ex. 2008 ¶¶ 24–25). JPT further contends that Chan’s user interface, allowing a user to manipulate the user’s location within the 3D scene “relates to a location of the user icon after an arbitrary input by the user, and not to a location from which an image was taken and subsequently displayed in the in-scene view.” *Id.* at 12–13.

Google responds that the record does not support JPT’s position that the claimed “predetermined location” is “a location from which an image was taken and subsequently displayed in the in-scene view.” Pet. Reply 4–5. According to Google, “Chan clearly discloses a location determined in advance, stating that the user icon is placed ‘at a predetermined location . . . within the 3D scene.’” *Id.* at 5 (citing Ex. 1005, 3:39–46).

After considering the parties’ arguments and the evidence before us, we are not persuaded by JPT’s arguments, as they are not commensurate with the scope of the claim. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (It is well established that limitations not appearing in the claims cannot be relied upon for patentability.). Notably, JPT asserts that the claim term “predetermined” means “determined in advance.” Prelim. Resp. 13. Nevertheless, JPT attempts improperly to import additional limitations—“a location from which an image was taken and subsequently displayed in the in-scene view”—from the Specification into the claims. PO Resp. 13. We

decline to import those limitations into the claims in the absence of an express definition set forth in the Specification. Rather, in light of the Specification, we construe the claim term a “predetermined location” broadly, but reasonably, as “a location determined in advance.”

Applying the proper claim construction, we agree with Google that Chan’s in-scene view of a geographic 3D image is taken from a location determined in advance within the scene. Indeed, Chan discloses that the user may navigate through a view, using either the joystick or mouse to manipulate the user’s location and orientation *within the scene*. Ex. 1005, 3:36–47; 17:62–18:34; Figs. 21–23. More importantly, Chan states that “[a]dvantages of this user icon transition mechanism include the fact that only a single press/drag/release mouse operation is required to position the user icon at a *predetermined location . . . within the 3D scene, orient the user icon, set the viewing direction, and set the look-at point to another point* on a target surface within the scene.” *Id.* (emphasis added).

In view of the foregoing, we conclude that Google has demonstrated sufficiently that Chan describes the “detailed view” claim features.

Synchronizer

Claim 17 recites “a synchronizer for changing, in said map, the origin, area, and angular direction of said area [] within said territory shown in said detailed view in response to and in correspondence with changes in said origin, area, and angular direction of said territory shown in said detailed view.” Claim 23 recites a similar feature, and claim 28 depends from claim 23.

JPT alleges that Chan does not disclose “a synchronizer,” as recited in claims 17, 23, and 28. PO Resp. 7–10, 15. In particular, JPT argues that Chan merely describes reconfiguring the display by switching the in-scene view and the map view between the viewports. *Id.* JPT also contends that Chan’s disclosure concerning the use of input device values to place the user icons within the in-scene view does not describe any synchronization, because the input device values are not used to place the user icon in the map view. *Id.* at 8–9 (citing Ex. 1005, 11:38–41).

Google responds that Chan’s disclosure of a “synchronizer” is not limited to “toggling of images” between the two views. Pet. Reply 2. Google points out that both views are updated synchronously during interpolation, as the “interpolation occurs when *two camera views* are simultaneously updated in step 805 in response to receiving ‘new inputs from the user’ at steps 806–807 [as shown in Figure 8].” *Id.* (citing Ex. 1005, 11:35–41, Fig. 8) (emphasis added by Google); see Pet. 13–14.

We agree with Google. Indeed, Chan discloses that, in addition to switching views between the viewports, the user may navigate through a view to manipulate the user’s location and orientation within the scene. Ex. 1005, 3:36–39. A user may change the location and orientation of a user virtual representation icon—a software-generated object that represents the user’s location and orientation within the 3D scene. *Id.* at 2:12–16. For example, pushing forward on the joystick moves the user icon location forward in the scene. *Id.* at 11:5–10. As the user manipulates the icon, the *interpolation* mechanism creates the 3D scene and defines the overview map and in-scene presentations of the image to the respective viewports. *Id.* at 2:16–22. As Google points out (Pet. Reply 2), Dr. Neff explains that “one

camera is the high [map] view, one camera that is the in-scene view, and they basically interpolate between those views,” and “that interpolation is synchronized.” Ex. 1026, 45:17–19.

Figure 8 of Chan illustrates a flow chart of the overall operation of the image viewer, and is reproduced below.

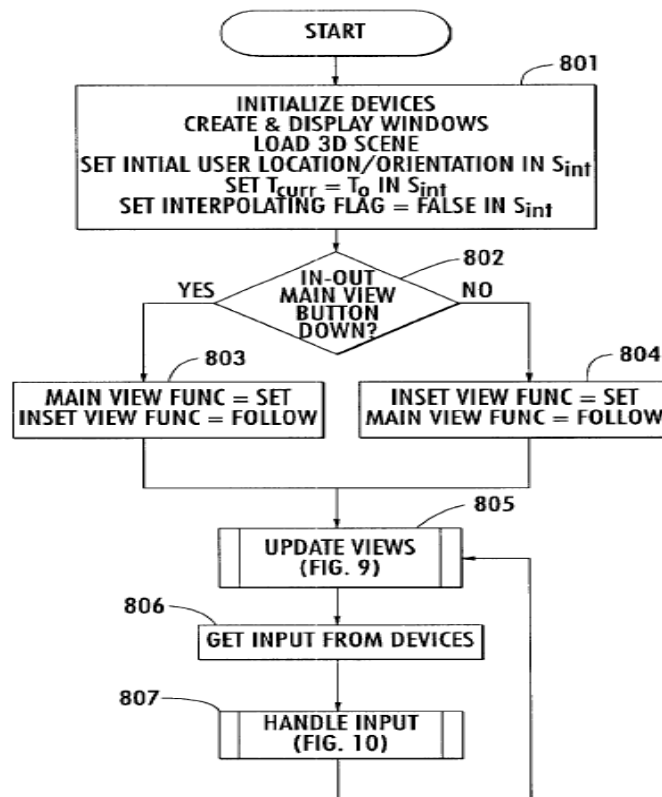


FIG. 8.

As shown in Figure 8 of Chan (step 803), the main view is assigned the SET interpolation function, and the inset view interpolation function is set to FOLLOW. *Id.* at 11:1–3. The FOLLOW function for the inset view causes the user’s location and orientation *in the map view* to be calculated based on the location of the user icon in the in-scene view. *Id.* at 11:14–19. *Both views* are updated simultaneously in response to receiving the new

inputs from the user at steps 806–807. *Id.* at 11:34–41. Therefore, the evidence before us, including the disclosure of Chan, supports Google’s position that *both views are updated synchronously* during interpolation.

JPT also argues that the two views are out of synchronization, because Chan states that “[t]he user’s viewpoint *will not change* within the window *until the operation is complete*.” PO Resp. 8 (quoting Ex. 1005, 3:45–48) (emphases added by JPT). That argument is unpersuasive because that operation is merely a single press/drag/release mouse operation used by the user to position the user icon at a predetermined location. Ex. 1005, 3:42–45. As Google points out, once that mouse operation is complete, “the interpolation operation *synchronously* computes ‘a new location and orientation . . . *for each camera* by the interpolation function.’” Pet. Reply 3 (quoting Ex. 1005, 11:47–49, Fig. 8 (step 805), Fig. 9) (emphases added by Google). Moreover, we observe that the Specification of the ’529 patent uses a similar mouse operation to change the views simultaneously. Ex. 1001, 5:25–37. In addition, as noted above, Chan allows a user to use a *joystick* to submit inputs when navigating within the in-scene view (e.g., pushing forward on the joystick to move the user icon location forward in the scene), and both views are updated *synchronously* during interpolation in response to the user’s input. Ex. 1005, 11:5–20, 11:34–41.

Upon consideration of the parties’ contentions and evidence, we determine that Google has demonstrated by a preponderance of evidence that Chan describes a synchronizer, as recited in claims 17, 23, and 28.

Changing angular direction and area of the detailed view

Claim 1 recites “providing *an input means for* a human operator to change the angular direction and area of said detailed view as seen from said location with said territory, using said input means to *change said angular direction and said area* of said detailed view, thereby to move virtually through said territory.” Dr. Neff testifies that given “that the location is fixed, the second feature of changing the area clearly refers to the ability to zoom in or out from the current location.” Ex. 2008 ¶ 25, p. 22. Based on Dr. Neff’s testimony, JPT asserts that Chan does not describe this claim limitation, because Chan does not have a zooming feature. PO Resp. 14.

Google disagrees with JPT’s claim construction that requires a zooming feature, because the Specification of the ’529 patent does not limit a “change in area” to a “zoom.” Pet. Reply 5–6. Google argues that, even if the claim requires such a feature, Chan discloses zooming and changing angular direction and area. *Id.* (citing Ex. 1005, 8:65–9:3, 17:62–65).

At the outset, we agree with Google that the disputed claim limitation does not require a zooming feature. Neither Dr. Neff nor JPT points out where the Specification of the ’529 patent discloses a zooming feature. Nor do we find one in the Specification.

We observe that the disputed limitation includes a means-plus-function element—“input means for a human operator to change the angular direction and area of said detailed view as seen from said location within said territory.” We identified, in the Decision on Institution, the corresponding structure for the recited function—permitting a human operator to change the angular direction and area of the detailed view as seen

from the location within the territory—to be *a mouse or keyboard*. Dec. 14–15 (citing Ex. 1001, 1:39–42, 4:31–36). Therefore, the means-plus-function claim element covers a mouse or keyboard, “and equivalents thereof”—a device whose purpose is to allow a user to give input to a computer system. See 35 U.S.C. § 112, ¶ 6.

The disputed claim limitation also recites a method step—“using said input means to change said angular direction and said area of said detailed view, thereby to move virtually through said territory.” Neither the “input means” nor this method step requires a zooming feature. Consequently, we discern no requirement of a zooming feature in the disputed claim limitation.

Applying the proper claim construction, we determine that Google’s position that Chan discloses the disputed claim limitation is supported by the evidence before us. As discussed above, Chan’s system permits a user to navigate through a view to *manipulate the user’s location and orientation* within a scene using a *joystick or a mouse*. Ex. 1005, 3:36–39, 9:50–52, 17:62–65. The user also may use the joystick handle to change the altitude of the overview map viewpoint, which provides magnification and demagnification actions, allowing the user to “*zoom into*” or “*zoom out*” of the scene. *Id.* at 8:65–9:3. Moreover, Chan indicates that changing the user’s location will *cause the map view to pan*—changing the area covered by the map view. *Id.* at 8:63–65. The user also may change the viewing elevation in the in-scene view using a joystick. *Id.* at 9:42–49. Given those disclosures of Chan, we are not persuaded by JPT’s argument that Chan does not describe the “changing angular direction and area” claim features.

In view of the foregoing, we conclude that Google has shown sufficiently that Chan describes the disputed claim limitation.

Conclusion

For the foregoing reasons, we determine that Google has demonstrated by a preponderance of evidence that claims 1, 4–6, 17, 23, and 28 are unpatentable under 35 U.S.C. § 102(e) as anticipated by Chan.

2. Claims 10 and 13–15—Obvious Over Chan and Naughton

Google asserts that claims 10 and 13–15 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Chan and Naughton. Pet. 36–39. As support, Google explains how the combination of Chan and Naughton collectively teaches each claim limitation and provides a rationale for combining the references. *Id.* Google directs our attention to Dr. Braasch’s Declaration to support its contentions. *Id.* (citing Ex. 1003 ¶¶ 148–158).

JPT counters that the combination of Chan and Naughton does not teach or suggest “detail display means for displaying a detailed view of an area within a territory” and “synchronization means for changing, in said map, the origin, area, and angular direction of said territory shown in said detailed view,” as recited in claim 10. PO Resp. 28–30. As support, JPT proffers the Declaration of Dr. Neff. *Id.* (citing Ex. 2008 ¶¶ 47–48). However, JPT essentially reiterates the same arguments presented with regard to independent claims 1, 17, and 23. We have addressed those arguments in our analysis above regarding the anticipation ground of unpatentability based on Chan as to claims 1, 4–6, 17, 23, and 28, and determined those arguments to be unavailing. For instance, we rejected JPT’s arguments that are predicated on its overly narrow claim construction

of the claim term a “detailed view,” because it improperly imports limitations—“a panoramic image that is constructed from one or more photographs or video”—from the Specification into the claims.

Rationale to combine

JPT further alleges that Google fails to articulate a rationale to combine Chan and Naughton. PO Resp. 29 (citing Ex. 2008 ¶ 50). Google responds that the Petition sets forth a sufficient rationale to combine the references and that it is supported by Dr. Braasch’s testimony. Pet. Reply 13; Pet. 36–38; Ex. 1003 ¶¶ 148–158. Indeed, Dr. Braasch testifies that one of ordinary skill in the art would have coded Chan’s software modules using the software programming language Java, including certain Java capabilities (e.g., multithreading in Java and the synchronized modifier that is built into Java). Pet. 38; Ex. 1003 ¶¶ 152–157. According to Dr. Braasch, those Java capabilities were well-known at the time of the invention, as evidenced by Naughton’s disclosure. *Id.* Dr. Braasch further testifies that using those Java capabilities to code Chan’s software modules to achieve synchronization would have allowed the use of separate threads for the in-scene view and the map view, ensuring that resources shared between two synchronized modules would have been managed properly. *Id.* We credit Dr. Braasch’s testimony as it is consistent with the technical disclosure of Chan and Naughton.

Neither JPT nor Dr. Neff explains adequately why coding Chan’s software modules for synchronization using those Java capabilities would have been beyond the level of ordinary skill, or why one with ordinary skill in the art would not have had a reasonable expectation of success in

combining the technical disclosures. Given the evidence on this record, we are persuaded that it would have been obvious to code Chan's software modules for synchronizing the in-scene view and the map view of a geographic scene using the software programming language Java, including the synchronized modifier and multithreading capabilities of Java, in light of Naughton's disclosure. See *KSR*, 550 U.S. at 417 (2007) ("[W]hen a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious.").

Analogous art

JPT further argues that one of ordinary skill in the art would not have combined Chan and Naughton because Chan is non-analogous art. PO Resp. 29 (citing Ex. 2008 ¶ 49). We are not persuaded by that argument, because the technical field of computer-simulated or *virtual touring* is not limited to panoramic images of a *real physical environment*, and Chan is reasonably pertinent to the problem addressed by the '529 patent, at least with respect to adding a dynamic map view to computer-simulated or virtual tours.

A prior-art reference is considered to be analogous if it is either:

- (1) from the same field of endeavor, regardless of the problem addressed; or
- (2) reasonably pertinent to the particular problem with which the inventor is concerned, regardless of the field of endeavor. See *In re Clay*, 966 F.2d 656, 658–59 (Fed. Cir. 1992). "A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." *Id.*

at 659. In that regard, “[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one.” *KSR*, 550 U.S. at 417.

Here, Dr. Neff testifies that Chan is not from the same field of endeavor as the claimed invention, as it is specifically directed to rendering rasterized projections of 3D models, and “not ‘*viewing panoramic images*’ to present a virtual tour of ‘*real physical environments*’ as is the ’529 patent.” Ex. 2008 ¶ 49 (emphases added). However, that characterization of the ’529 patent’s field of endeavor is overly narrow and is not consistent with the Specification of the ’529 patent.

As described in the Specification of the ’529 patent, its field of endeavor is not limited to viewing *panoramic images* and navigating through virtual tour of *real physical environments*. In fact, the Specification of the ’529 patent indicates that one of the objectives for the disclosed invention is “to provide an improved *virtual image* viewing and panning system.” Ex. 1001, 2:30–31 (emphasis added). It also provides an example, in the Background section, that uses “a *virtual camera*,” and defines the term “virtual” as “computer-simulated.” Ex. 1001, 1:36–37, 2:7–25. Dr. Neff testifies that “a virtual image is a synthetic image,” and it is “an image that does not exist in the real world.” Ex. 1026, 10:25–11:5. Moreover, none of the independent claims of the ’529 patent recites panoramic images of *real physical environments*.

As such, we decline to adopt Dr. Neff’s overly narrow definition of the ’529 patent’s field of endeavor. Rather, we observe that the ’529 patent’s field of endeavor is computer simulated or virtual touring. Ex. 1001, 2:30–58. The particular problem the patentee intended to address

was to provide a dynamic map view for the computer-simulated or virtual tours. *Id.* at 1:37–2:26.

Chan relates to computer simulated or virtual touring of scenes, describing a digital-image processing system for displaying simultaneously views of a 3D image and a map of a geographic scene. Ex. 1005, 1:8–2:12, 3:37–49, 5:25–31, Figs. 5–6. Chan’s system provides a user interface for navigating within the in-scene view and the map view of the scene. *Id.* at 1:49–67, 2:9–37. Therefore, Chan is from the same field of endeavor as the ’529 patent, and Chan is reasonably pertinent to the patentee’s problem, at least with respect to providing a dynamic map view for virtual tours. Accordingly, we determine that Chan is analogous art.

Conclusion

Claims 13, 14, and 15 depends from independent claim 10. JPT has not raised any additional argument with regard to dependent claims 13, 14, and 15 other than those addressed above. *Id.* at 30.

For the foregoing reasons, we determine that Google has demonstrated by a preponderance of evidence that claims 10 and 13–15 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Chan and Naughton.

3. Claims 2, 3, 11, 12, 18, 19, 24, and 25—Obvious over Chan, Galitz, and Naughton; and Claims 15, 21, and 27—Obvious over Chan and Prouty

Google asserts that claims 2, 3, 11, 12, 18, 19, 24, and 25 are unpatentable under 35 U.S.C. § 103(a) over the combination of Chan, Galitz, and Naughton. Pet. 39–41. Google also asserts that claims 15, 21, and 27

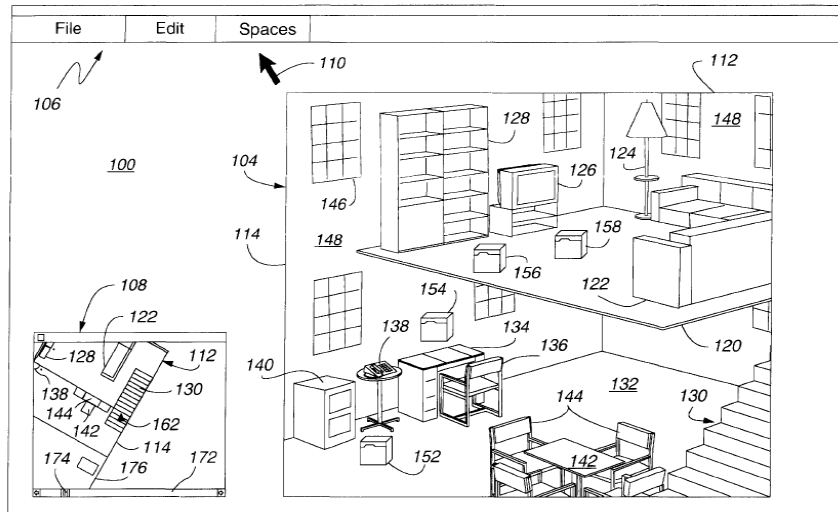
are unpatentable over the combination of Chan and Prouty. *Id.* at 41–43. Google relies upon Dr. Braasch’s Declaration for support. *Id.* at 39–43 (citing Ex. 1003 ¶¶ 159–167).

JPT counters that the combinations of cited prior art reference do not disclose all of the claim limitations of the challenged claims. PO Resp. 30–33. JPT also directs our attention to Dr. Neff’s Declaration. *Id.* (citing Ex. 2008 ¶¶ 54, 56, 58–59). However, JPT essentially reiterates the same arguments presented with regard to independent claims 1, 10, 17, and 23. *Id.* We have addressed those arguments in our analysis above regarding the grounds of unpatentability based, at least in part, on Chan as to independent claims 1, 10, 17, and 23, and determined those arguments to be unavailing.

As to claims 15, 21, and 27, JPT further maintains that there is no rationale to combine the technical disclosures of Chan and Prouty. *Id.* at 32–33 (citing Ex. 2008 ¶¶ 60–61). We are not persuaded by JPT’s argument and supporting evidence. Rather, we observe that Chan’s disclosure is not limited only to *outside* scenes and, in light of Prouty, it would have been obvious to one with ordinary skill in the art to replace an *outside* scene with an *inside* scene when navigating through the inside of a building.

Prouty describes a 3D graphical resource management system. Ex. 1020, Abs. Figs. 1, 7. Figure 1 of Prouty, reproduced below, illustrates a computer screen display of a computer 3D graphical system.

Fig. 1



As depicted in Figure 1 of Prouty, the computer monitor screen simultaneously displays both main view window 104, depicting a 3D interior area of a floor plan and a room of a building (the detailed view), and view box window 108, showing a top plan view of the interior area (the map view). Ex. 1020, 7:30–67, 9:29–49. Prouty’s computer system allows users to navigate through the interior area using input devices, such as a keyboard, mouse, or joystick. *Id.* at 8:36–63.

Although Chan’s preferred embodiment shows an urban scene, Chan’s digital image processing system is capable of displaying other scenes and, therefore, it is not limited to outside scenes. Ex. 1005, 1:39–49, Figs. 5–7. Google relies upon Prouty to describe a 3D-graphical system that allows a user to display *a floor plan or interior area of a building*. Pet. 41–43; Ex. 1020, 7:34–35, Fig. 1. Dr. Braasch testifies that “in looking for ways to manipulate the map in an exterior setting, it would have been obvious try the same thing as *inside* a building in view of Prouty.” Ex. 1003 ¶ 167.

Given the evidence on this record, we determine that Google has demonstrated sufficiently that it would have been obvious to one of ordinary skill in the art to use Chan's digital image processing system to display and navigate through *a floor plan or interior area of a building*, in light of Prouty, so that a user may familiarize himself or herself with the floor plan or interior area of the building. *See KSR*, 550 U.S. at 417 (2007) (The simple substitution of one known element for another is likely to be obvious if it does no more than yield predictable results.).

Conclusion

For the foregoing reasons, we determine that Google has demonstrated by a preponderance of evidence that claims 2, 3, 11, 12, 18, 19, 24, and 25 are unpatentable over the combination of Chan, Galitz, and Naughton, and that claims 15, 21, and 27 are unpatentable over the combination of Chan and Prouty.

D. Grounds of Unpatentability based on Wei, by itself or in Combination with Other References

Claims 1, 4, 5, 17, 21, 23, and 27—Anticipated by Wei

Google asserts that claims 1, 4, 5, 17, 21, 23, and 27 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Wei. Pet. 18–25. In its Petition, Google explains how each claim limitation is met by Wei and directs our attention to Dr. Braasch's Declaration. *Id.* (citing Ex. 1003 ¶¶ 79–107).

In response, JPT argues that Wei does not describe all of the limitations recited independent claims 1, 17, and 23, citing Dr. Neff's Declaration for support. PO Resp. 15–27 (citing Ex. 2008 ¶¶ 27–46).

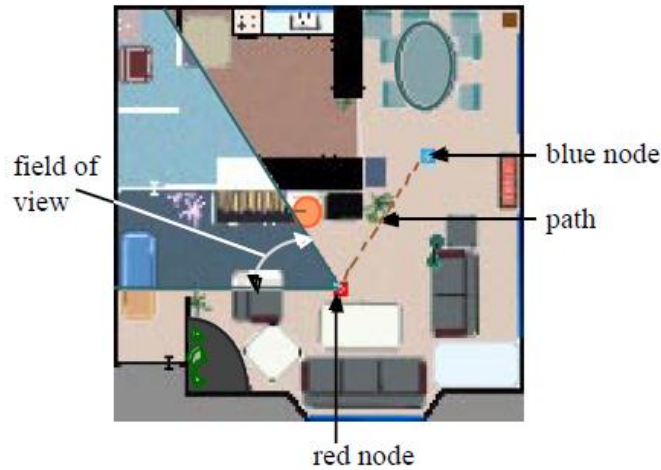
Claims 4 and 5 depend from claim 1; claim 21 depends from claim 17; and claim 27 depends from claim 23.

We have reviewed Google's Petition, JPT's Patent Owner Response, and Google's Reply, as well as the parties' supporting evidence discussed in those papers. Given the evidence before us, we determine that Google has demonstrated by a preponderance of evidence that claims 1, 4, 5, 17, 21, 23, and 27 are anticipated by Wei. In our analysis below, we address JPT's arguments presented in the Patent Owner Response, focusing on the disputed claim limitations.

Wei

Wei describes a real-time interactive player for navigating in a panoramic scene (a detailed view). Ex. 1006, 1, Abs. Specifically, the interactive player is a navigation tool for exploring a photo-realistic 3D world in 360° panoramic view, allowing the user to interact dynamically within the panoramic scene. *Id.* at 10, 13. The interactive player has several basic functions—horizontal and vertical panning, zooming, and hopping between multi-nodes within the panoramic-scene viewport. *Id.*

The interactive player also includes a graphical directional indicator (a dynamic map view) to help the user explore the panoramic scene more effectively. *Id.* at 11–14, Fig. 4.7. Figure 4.7 of Wei, reproduced below, illustrates a directional indicator.



As depicted in Figure 4.7 of Wei, the directional indicator shows the user's current position and viewing direction in the panoramic scene, as well as where the user can go next in the scene. *Id.* at 11. More specifically, the red node represents the user's current position in the panoramic scene (i.e., the origin, the position from which the panoramic scene is taken). *Id.* at 6, 14. The projection from the red node (the highlighted triangular area on the left side) indicates the current viewing direction and field of view of the panoramic scene that is displayed simultaneously in the viewport. *Id.* at 14. The field of view synchronously rotates as the panoramic view horizontally moves around (panning) in the viewport. *Id.* The directional indicator further displays the path and inactive node (shown in Figure 4.7 as a blue node), where the user can change his or her position to in the panoramic scene. *Id.*

Displaying a map and a detailed view

In its Patent Owner Response, JPT alleges that Wei does not describe “a display that can display a map of a territory *and* a detailed view of an area within said territory,” as recited in claim 1. PO Resp. 23–25 (emphasis

added by JPT). JPT also contends that Wei fails to disclose displaying the detailed view and the map view *simultaneously*, because Wei's directional indicator only appears "as needed," and it is not always present. *Id.* at 16–17, 23–25 (citing Ex. 1006, 14). JPT further argues that it is unclear where, how, or when the directional indicator is displayed. *Id.* at 24–25. According to JPT, "it is reasonable to assume that the two viewports would be on different displays," because Wei discloses that the directional indicator should not contain any controls used for the navigation flow or take over the role of the panoramic-scene viewport, and the directional indicator appears to be a 2D view, not a 3D anaglyphic image. *Id.* at 17–18, 20, 24–25 (citing 2008 ¶ 40).

Google responds that Wei's directional indicator is a component of the player, specifically an enhancement or a new feature to the player. Pet. Reply 11. According to Google, Wei discloses displaying the panoramic view and the directional indicator on the same display, as "it would make no sense to have a dedicated display for the sole purpose of displaying a [directional indicator] that appears when needed." *Id.*

Having considered the evidence on this record, we are not persuaded by JPT's arguments. JPT's arguments narrowly focus on the statement in Wei that the directional indicator "appears as needed" (Ex. 1006, 14). JPT's arguments are predicated on the incorrect assumption that the disputed claim language requires both the map and detailed view be displayed simultaneously *all the time*. PO Resp. 15–18, 23–25. To the contrary, the claim language does not set forth such a requirement. Therefore, JPT's arguments again are not commensurate with the scope of the claims.

Moreover, we are not persuaded by Dr. Neff’s testimony that Wei “does not reveal the need to show the map view and area view on the same display, as indicated in claim 1” (Ex. 2008 ¶ 40) and JPT’s assertion that Wei’s directional indicator “may not be present at all” (PO Resp. 17), because they ignore the stated benefits of a directional indicator (a dynamic map view) in Wei—guiding the user exploring the new panoramic world *more effectively* and showing the *current exploring status* of the panoramic scene to the viewer *dynamically*. Ex. 1006, 13–14. Neither JPT nor Dr. Neff explains sufficiently why users would not need such a useful navigation tool, especially given that JPT acknowledges those same benefits and needs for a dynamic map view showing the current exploring status of a panoramic scene in the Specification of the ’529 patent. Ex. 1001, 1:64–2:7 (“help the individual to understand fully the field of view, direction, and relation of the detailed views to the overall layout”).

We observe that the disclosure of Wei supports Google’s position that the directional indicator and the panoramic scene are displayed on the same computer monitor or display. Wei discloses a real-time interactive player that includes a computer, a computer monitor (a display), image processing software, a mouse, and a keyboard. Ex. 1006, 1–3, 13, 15. The directional indicator is one of the three *new features that are part of the interactive player*, and not some other separate device. *Id.* at 1, Abs. (“In addition to the standard functions provided in the player, *three new features are equipped to the player* (i.e. a new driving method, manipulable objects embedded in the stereo panorama and a *directional indicator*).” (emphases added)). Contrary to JPT’s assumption that “the two viewports would be on different displays” (PO Resp. 18, 25), nothing in Wei indicates that a second

computer monitor or display is required to implement the new features, including the directional indicator. In fact, Wei specifically states that the only extra hardware needed to implement the new features is a pair of 3D eyeglasses. *Id.* at 2, 5–6.

We also are not persuaded by JPT’s argument and Dr. Neff’s testimony that the directional indicator must be on a different display. JPT and Dr. Neff narrowly focus on a single statement in Wei—the directional indicator “should not contain any controls used for the navigation flow, or even take over the role of the view port where the world is explored” (Ex. 1006, 14)—to substantiate their positions. PO Resp. 25; Ex. 2008 ¶ 40. That statement does not indicate that the directional indicator cannot be *displayed* on the same computer monitor as the panoramic scene. Rather, it merely explains that the user mainly *navigates* through the panoramic-scene viewport, such as manipulating the objects shown in the panoramic scene. Ex. 1006, 13.

We disagree with JPT’s assumption that the directional indicator is a 2D image and, therefore, it cannot be on the same display as the panoramic scene. PO Resp. 25. Nothing in Wei indicates that the directional indicator must be shown as a 2D image, and cannot be a 3D-anaglyphic image. Even if the directional indicator is shown as a 2D image, JPT does not explain adequately why a 2D image cannot be displayed with a 3D-anaglyphic image on the same computer monitor. JPT’s argument rests on the unsupported assumption that a pair of 3D eyeglasses cannot be used to view a display that is showing both a 2D image and a 3D-anaglyphic image.

The disclosure of Wei does not support JPT’s assertion that the panoramic scene and the directional indicator are not displayed

simultaneously. PO Resp. 16–17. As discussed above, the directional indicator helps the user to navigate through the panoramic scene more effectively by displaying the top view (a map) of the entire 360° panoramic scene. *Id.* at 11, 13–14, Fig. 4.7. The directional indicator also displays the user’s current position, as well as the current viewing direction and field of view of the panoramic scene, thereby showing the current exploring status of the panoramic scene *dynamically*. *Id.* More importantly, Wei states:

The projection emitted from the red node indicates the current viewing direction and field of view, also *it is rotating synchronously as the horizontal panning in the view port of the player*. To indicate the connectivity between nodes, the path is plotted in [dash]-line. User can only hop to the connected node if the path is covered by the emitting projection from the current node, i.e. *user should see where she/he is hopping to in the view port*. All inactive nodes [are] represented by blue node, *when user jump to other node, the color of nodes are updated as specified*.

Id. at 14 (emphases added). That disclosure of Wei confirms that a change of the user’s current position, angular direction, and area of the panoramic scene is indicated *simultaneously* in the directional indicator.

For the foregoing reasons, we determine that Google has demonstrated sufficiently that Wei discloses the “display” claim features.

Whether Wei is enabling prior art

JPT argues that Wei lacks sufficient detail regarding the directional indicator to be considered an enabling reference. PO Resp. 24–25, n.3. In particular, JPT alleges that “Wei provides no discussion that would permit a person of ordinary skill in the art to carry out the invention, namely, to construct a display that includes a detailed view and a map that change in a

simultaneous and corresponding fashion as a user changes the field of view.”
Id.

Google responds that “Wei is a technical paper targeted at an audience familiar with traditional panorama visualization techniques.” Pet. Reply 7. Google points out that “Wei’s citations to multiple other prior art publications further enables the target audience to find explanations of the techniques used in Wei, if desired, making Wei an enabling reference.” *Id.* According to Google, as shown in Wei and other prior art of record, a person of ordinary skill in the art would have been “able to implement the described co-located map and detailed view with synchronized changes between the two.” *Id.* (citing Ex. 1005–1009).

Having considered the parties’ arguments and the evidence before us, we agree with Google that Wei is an enabling prior art reference. Prior art publications and patents are presumed to be enabled. *In re Antor Media Corp.*, 689 F.3d 1282, 1287–88 (Fed. Cir. 2012); *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1355 (Fed. Cir. 2003). JPT does not proffer persuasive evidence to support its assertion that Wei is a non-enabling prior art reference. Nor does JPT explain adequately the basis for its non-enablement assertion. *Cf. In re Morsa*, 713 F.3d 104, 110 (Fed. Cir. 2013) (“Once an applicant makes a non-frivolous argument that cited prior art is not enabling, however, the examiner must address that challenge.”).

Dr. Braasch testifies that a person of ordinary skill in the art at the time of the invention “would have had knowledge of maps, images, and software for designing a user interface conducive to image presentation, manipulation and synchronization,” and “would also have at least (a) a

Bachelor of Science degree in a field such as computer science, electrical engineering, and/or a similar field or (b) at least 2 years of experience in graphics processing or a similar field.”³ Ex. 1003 ¶¶ 17–18. On this record, we determine Dr. Braasch’s testimony concerning the understanding of one of ordinary skill in the art to be credible. Thus, the ordinary skill level in the art at the time of the invention was quite advanced.

We further recognize that Wei’s target audience is not the general public, but rather those that are familiar with the traditional panorama visualization techniques. *See, e.g.*, Ex. 1006, Abs. (“Traditional panorama visualization techniques give only the single eye’s depth cues to the audience of the 3D world navigation”), 1 (“There are at least two techniques applicable with modern computer devices, one is the shutter stereoscope, and the other is the anaglyph technique.”). Throughout its disclosure, Wei cites to prior publications concerning digital image processing and virtual navigation environment to help readers understand where to find more explanations as to the particular technique or implementation steps. *See, e.g., id.* at 2, 6, 15.⁴

³ Dr. Braasch holds a Ph.D. in Electrical Engineering from Ohio University and has more than 12 years of experience in the field of image mapping software and manipulation and display software technology. Ex. 1003, ¶¶ 4–14. At the time of his Declaration, Dr. Braasch was employed by Ohio University as a Professor of Engineering in the School of Electrical Engineering and Computer Science. *Id.* We, therefore, conclude that Dr. Braasch is qualified to testify as to the understanding of one of ordinary skill in the art of providing a dynamic map view for virtual tours.

⁴ *See, e.g.*, Bend Jähne, *Digital Image Processing: Concepts, Algorithms, and Scientific Applications* (Springer-Verlag 2nd ed., 1993); Shenchang Eric

JPT again narrowly focuses on a single statement in Wei—the directional indicator “should not contain any controls used for the navigation flow, or even take over the role of the view port where the world is explored” (Ex. 1006, 14)—to substantiate its position. PO Resp. 24–25, n.3. JPT’s argument ignores the stated benefits of displaying a directional indicator (a dynamic map view) simultaneously with the panoramic view and the directional indicator’s synchronization features (Ex. 1006, 13–14).

In fact, Wei provides detailed information as to how one of ordinary skill in the art could implement the new panorama visualization technique on a computer and a computer monitor. *Id.* at 1–13. For instance, Wei discusses how the real-time re-projection of an environment map is used to visualize a surrounding scene and to create interactive walk-through, and how manipulable objects embedded in the panoramic scene are implemented in the interactive player. *Id.* at 11, 13. In regard to the directional indicator, Wei further discloses the following:

Like manipulable objects embedded feature, it requires more labor work from the panorama maker. For example, the maker needs to *prepare a map (i.e. top view of panoramas)*, finds out the reference node positions in the panorama image, calculates the registration points between connected nodes, specify the starting node and its initial viewing direction, and so on.

Id. at 14 (emphases added). JPT does not explain sufficiently why—given the detailed information and considerable guidance disclosed in Wei—one of ordinary skill in the art could not have constructed *a display* that includes

Chen, *QuickTime® VR – An Image-Based Approach to Virtual Environment Navigation*, In Proc. SIGGRAPH’ 95, 29–38 (1995).

a detailed view and a map showing changes simultaneously, as recited in claim 1, without undue experimentation.

The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). JPT does not identify with sufficient specificity what experimentation is needed. In fact, neither JPT nor its expert witness makes any assessment of the level of experimentation that would be required for one ordinary skill in the art to make and use the claimed invention. In view of the foregoing, JPT has not demonstrated adequately that Wei is non-enabling prior art.

Synchronizer

Claim 23 recites “a *synchronizer* for changing, in said map, said point, said area, and said angular direction of said area within said territory indicated by said detailed view in response to and in correspondence with changes in said point origin, said area, or said angular direction as shown in said detailed view.” Claim 17 recites similar limitations.

JPT takes the position that Wei does not describe a synchronizer because Wei’s directional indicator does not function as the claimed synchronizer. PO Resp. 18–21, 27. In particular, JPT argues that the directional indicator does not allow for exploring or navigating the panoramic scene, and it does not change “in said map, said point . . . in response to and in correspondence with changes in said point origin . . . as shown in said detailed view,” as recited in claim 23. *Id.* JPT also asserts that Wei’s system does not have the ability to manipulate the image of the detailed view, or control the angular direction. *Id.* at 20, 22, 26. JPT further

submits that Wei does not describe the ability to indicate simultaneously in the map any change in the angular direction and area of the detailed view. *Id.* at 23, 26.

Google first points out that a specific device labeled a “synchronizer,” is not required. Pet. Reply 7–8. Google maintains that Wei discloses the “synchronizer” claim features, because Wei describes an interactive player that includes a directional indicator and that runs in software that performs the synchronization function. *Id.* Google points out that Wei describes input devices (e.g., a keyboard and a mouse) that the interactive player uses to change the angular direction and area of the panoramic scene through panning, hopping, and zooming. *Id.* at 11–12. According to Google, both panning and hopping between nodes constitute a change in origin. *Id.* at 9–10. Google further notes that Wei’s directional indicator shows the projection that indicates the current viewing direction and rotates synchronously as the panoramic scene horizontally moves around (panning) in the viewport. *Id.* at 10.

After reviewing the evidence on this record, we are not persuaded by JPT’s arguments. Rather, we agree with Google that Wei describes the “synchronizer” claim features. JPT’s arguments narrowly focus on the functionalities of Wei’s new directional indicator feature, and ignore other features and functionalities of Wei’s interactive player—including the basic functions, such as panning, zooming, and hopping between multi-nodes within the panoramic scene.

Notably, Wei’s interactive player includes a computer with image processing software, a monitor, a mouse, and a keyboard. Ex. 1006, 1–3, 13, 15. The interactive player is programed to allow a user to perform the

following basic functions: (1) interact dynamically with the panoramic scene; (2) walk through and explore the panoramic scene, including controlling the viewing direction, horizontal and vertical panning, and zooming in and out (i.e., changing the angular direction and area of the panoramic scene); and (3) hop to a different position or node in the panoramic scene (i.e., changing the origin of the panoramic scene). *Id.* at 6, 10, 13–14.

Wei's interactive player includes a new directional indicator feature. *Id.* at 1, Abs. The directional indicator shows a map of the panoramic scene, displaying *dynamically* the current exploring status—e.g., the user's current position, field of view, and viewing direction of the panoramic scene shown in the viewport. *Id.* at 14, Fig. 4.7. In other words, the directional indicator shows, on the map, the point of origin, angular direction, and area of the panoramic scene. Moreover, the projection emitted from the user's current position (the red node illustrated in Figure 4.7 of Wei) *rotates synchronously* as the panoramic scene horizontally moves around (panning) in the viewport, thereby indicating simultaneously changes in the angular direction and area of the panoramic scene. *Id.*

We are not persuaded by JPT's argument that “[t]here is no discussion anywhere in Wei about *changing the origin of the user from the viewport* when viewing the 3D anaglyphic panorama.” PO Resp. 20 (emphasis added); *see id.* at 21–22, 27. As noted above, Wei specifically describes an interactive player that allows the user to *interact dynamically with the panoramic scene*. Ex. 1006, 10. Wei's interactive player has several basic functions, including horizontal and vertical panning, zooming in and out, and *hopping between multi-nodes in the panoramic scene* as shown in the

viewport. *Id.* at 10–11. Contrary to JPT’s assertion that hopping between nodes is shown only in the directional indicator, not in the panoramic-scene viewport (PO Resp. 21, n.2), Wei’s interactive player clearly permits a user to hop between multi-nodes within *the panoramic-scene viewport* using the basic functions as noted above. Ex. 1006, 10–11. Accordingly, Wei’s interactive player enables a user to change the origin of panoramic-scene viewport, and indicates simultaneously the new origin in the directional indicator. *Id.* at 14.

We also are not persuaded by JPT’s argument that it is impossible for Wei’s directional indicator to indicate any changes in angular direction and area of the detailed view, because the directional indicator appears only “as needed.” PO Resp. 23. As articulated previously, we have rejected that argument, as it is predicated on the incorrect premise that the claim language requires the map view be displayed *all the time*, and the directional indicator “may not be present at all.”

We further are not persuaded by JPT’s argument that Wei allows the user to control the rate of spinning, but not to change the angular direction. PO Resp. 26. The disclosure of Wei does not support JPT’s assumption (*id.*) that Wei abandoned the conventional feature—the feature that allows the user to control “the viewing direction via toggling the mouse over the view port to simulate the camera panning and types the specified keys in the keyboard for other actions, such as zoom in, zoom out, hopping[,] *etc.*” (Ex. 1006, 13)—in favor of the auto-spinning feature. Contrary to JPT’s view that the conventional feature is a different system that has been replaced by the auto-spinning feature, the auto-spinning feature merely is an enhancement or a new *additional feature* to the interactive player. Ex. 1006,

10–11. Nothing in Wei indicates the auto-spinning feature replaces the interactive player’s basic functions—panning, zooming, and hopping between multi-nodes—so that users can utilize only the auto-spinning feature and not the conventional features and basic functions. *Id.* at 13 (“It preserves the conventional interaction rules . . . with *one more option* allowing camera panning in the desired direction continuously without further mouse toggling.” (emphases added)).

Upon consideration of the parties’ contentions and evidence before us, we determine that Google has demonstrated sufficiently that Wei discloses the “synchronizer” claim features.

Conclusion

For the foregoing reasons, we determine that Google has demonstrated by a preponderance of evidence that claims 1, 4, 5, 17, 21, 23, and 27 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Wei.

Claims 2, 3, 6, 10–15, 18, 19, 21, 24, 25, and 28—Obviousness Grounds of Unpatentability Based in Part on Wei

Google asserts that claims 2, 3, 10–15, 18, 19, 21, 24, and 25 are unpatentable over the combination of Wei and Naughton, and that claims 6 and 28 are unpatentable over the combination of Wei and Dykes. Pet. 43–47. For each ground of unpatentability, Google explains how the combination of the cited prior art references describes the claim limitations and provides a sufficient rationale for combining the references. *Id.* Google also provides the Declaration of Dr. Braasch to support its positions. *Id.* (citing Ex. 1003 ¶¶ 168–176).

With respect to claims 10–15, JPT counters that the combination of Wei and Naughton fails to teach or suggest the detail display means, map display means, and synchronization means, as recited in independent claim 10, because Wei does not describe any means for changing the origin in the detailed view and any means for changing the angular direction and area in the directional indicator. PO Resp. 34–35 (citing Ex. 2008 ¶¶ 62, 64–66). In essence, JPT presents the same arguments with regard to independent claims 1, 17, and 23.

We, however, have addressed those arguments in our analysis above regarding the anticipation ground of unpatentability based on Wei as to claims 1, 4, 5, 17, 21, 23, and 27, and determined that they are unpersuasive. For instance, contrary to JPT’s assertion that Wei does not describe any means for *changing the origin in the detailed view*, Wei’s interactive player has several basic functions, including horizontal and vertical panning, zooming in and out, and *hopping between multi-nodes in the panoramic scene* as shown in the viewport. Ex. 1006, 10–11. In addition, the projection emitted from the user’s current position (the red node illustrated in Figure 4.7 of Wei), as shown in Wei’s directional indicator, *rotates synchronously* as the panoramic scene horizontally moves around (panning) in the viewport, thereby indicating simultaneously the changes in the angular direction and area of the panoramic scene. *Id.* at 14, Fig. 4.7.

With respect to other dependent claims, JPT again essentially reiterates the same arguments presented with regard to independent claims 1, 17, and 23. PO Resp. 33–37. We also have addressed those arguments in our analysis above regarding the anticipation ground of unpatentability

based on Wei as to independent claims 1, 17, and 23, and determined those arguments to be unavailing.

Conclusion

For the foregoing reasons, we determine that Google has demonstrated by a preponderance of evidence that claims 2, 3, 10–15, 18, 19, 21, 24, and 25 are unpatentable over the combination of Wei and Naughton, and that claims 6 and 28 are unpatentable over the combination of Wei and Dykes.

E. JPT's Motion to Amend Claims

JPT moves to substitute claims 29 and 30 for challenged claims 24 and 23, respectively, if we find original claims 23 and 24 unpatentable. Mot. Amend 1. As stated above, we determine that Google has demonstrated by a preponderance of evidence that all of the challenged claims are unpatentable, including claims 23 and 24. Therefore, JPT's Motion to Amend is before us for consideration. For the reasons set forth below, JPT's Motion to Amend Claims is *denied*.

Proposed substitute claim 29 depends from original claim 23 and proposed substitute claim 30 is an independent claim. Original claim 23 and proposed substitute claims 29 and 30 are reproduced, as follows:

23. A system for indicating the origin and area of a detailed view of an area within in a territory, as seen from a point within said territory, comprising:

a display for displaying a *detailed view* of an area within a territory as seen from a point within said territory, and for enabling a user to change the location of said point, said area,

and the angular direction of said area as seen from said point, as shown in said detailed view,

a map display for displaying a map of said territory and indicating said point, said area, and said angular direction of said area as seen from said point, as shown in said detailed view, and

a *synchronizer* for changing, in said map, said point, said area, and said angular direction of said area within said territory indicated by said detailed view in response to and in correspondence with changes in said point origin, said area, or said angular direction as shown in said detailed view.

Ex. 1001, 12:25–44 (emphases added).

29. (Proposed Substitute for Original Claim 24) The system of claim 23 wherein said map display is arranged to indicate said area of said territory shown in said detailed view in a different brightness than the rest of said map,

wherein the map display indicates the area shown in the detailed view by displaying a sector on the map in the different brightness, and

wherein the synchronizer rotates the sector on the map simultaneously with a change in the angular direction in the detailed view and

resizes the sector simultaneously with a change in the area displayed in the detailed view.

30. (Proposed Substitute for Original Claim 23) A system for indicating the origin and area of a detailed view of an area within in a territory, as seen from a point within said territory, comprising:

a display for displaying a detailed view of an area within a territory as seen from a point within said territory, and for enabling a user to change the location of said point, said area, and the angular direction of said area as seen from said point, as shown in said detailed view,

a map display for displaying a map of said territory and indicating said point, said area, and said angular direction of said area as seen from said point, as shown in said detailed view, and

a *synchronizer* for changing, in said map, said point, said area, and said angular direction of said area within said territory indicated by said detailed view in response to and in correspondence with changes in said point origin, said area, or said angular direction as shown in said detailed view,

wherein the detailed view is a portion of a panoramic image of a geographic area, the panoramic image comprises a combination of a plurality of images of the geographic area captured by one or more digital cameras, said point displayed on the map indicates a location of the one or more digital cameras when the images were captured,

the display and the map display are presented simultaneously in a single window, and

the synchronizer changes said area displayed in the detailed view simultaneously with a change in said point displayed on the map.

Mot. Amend 1–2 (emphases added by JPT to show the added features).

A motion to amend claims in an *inter partes* review is not, itself, an amendment. As the moving party, JPT bears the burden of proof to establish that it is entitled to the relief requested. 37 C.F.R. § 42.20(c). Therefore, JPT’s proposed substitute claims are not entered automatically, but only upon JPT having demonstrated by a preponderance of the evidence the patentability of those substitute claims. *See, e.g.*, 37 C.F.R. § 42.1(d) (noting that the “default evidentiary standard [in proceedings before the Board] is a preponderance of the evidence.”).

1. Claim Construction

Claim construction is an important step in a patentability determination. *Oakley, Inc. v. Sunglass Hut Int’l*, 316 F.3d 1331, 1339 (Fed. Cir. 2003); *Medichem, S.A. v. Rolabo, S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003) (“Both anticipation under § 102 and obviousness under § 103 are two-step inquiries. The first step in both analyses is a proper construction of the claims. . . . The second step in the analyses requires a comparison of the properly construed claim to the prior art.” (internal citations omitted)). A motion to amend claims must identify how the proposed substitute claims are to be construed, especially when the proposed substitute claims introduce new claim terms. *See Idle Free Sys., Inc. v. Bergstrom, Inc.*, IPR2012-00027, slip op. at 7 (PTAB June 11, 2013) (Paper 26).

In its Motion to Amend, JPT asserts that the claim term “map display” should be construed as “a map that includes the area covered by the panoramic image that indicates the direction and area over which the detailed field of view is taken.” Mot. Amend 4 (citing Ex. 1001, 3:4–5, 42–44). JPT’s proposed claim construction improperly would import limitations—“*panoramic image that indicates the direction and area over which the detailed field of view is taken*”—from the Specification into the claims. JPT’s proposed claim construction also would render other claim language superfluous—“indicating . . . said area, and said annular direction of said area as seen from said point” (claim 23). *See Bicon Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) (“[C]laims are interpreted with an eye toward giving effect to all terms in the claim.”); *see also Stumbo v. Eastman Outdoors, Inc.*, 508 F.3d 1358, 1362 (Fed. Cir.

2007) (denouncing claim constructions which render phrases in claims superfluous). As such, we decline to adopt JPT's claim construction.

The claim term “detailed view” is not a new claim term and we have set forth the claim construction for this claim term in the Decision on Institution. Dec. 8. Nevertheless, JPT maintains that the claim term “detailed view” should be construed as “*a detailed view of a panoramic image.*” Mot. Amend 4 (citing Ex. 1001, 3:41–42). JPT's proposed claim construction improperly would import limitations—e.g., “a panoramic image”—from the Specification into the claims, as discussed above in our claim construction analysis for the original challenged claims. JPT's proposed claim construction also would render other claim language superfluous—“wherein the detailed view is a portion of a *panoramic image* of a geographic area” (proposed substitute claim 30, Mot. Amend 2). As such, we decline to adopt JPT's claim construction. Rather, we apply the same claim construction set forth in our claim construction analysis for the original challenged claims above.

JPT introduced several new claim terms—e.g., “*resizes the sector simultaneously*” and “*presented simultaneously in a single window*”—in its proposed substitute claims. JPT argues that those claim features are critical, distinguishing the proposed substitute claims from the prior art. *See, e.g.*, Mot. Amend 12–13. Yet, JPT does not provide any claim constructions or explanations as to how the new claim terms are to be construed.

Without a reasonable construction of the new claim features added by the proposed substitute claims, JPT's motion does not provide adequate information for us to determine whether JPT has demonstrated the patentability of its proposed substitute claims over the prior art generally.

Therefore, we are not persuaded that JPT has met its burden to demonstrate patentability of the proposed substitute claims under 37 C.F.R. § 42.20(c).

2. *Written Description Support*

A motion to amend claims must identify clearly the written description support for each proposed substitute claim. 37 C.F.R. § 42.121(b). The requirement that the motion to amend must set forth the support in the original disclosure of the patent is with respect to *each claim*, not for a particular feature of a proposed substitute claim. In other words, it is inadequate to show written description support for just the claim feature added by the proposed substitute claim. The motion must account for the claimed subject matter as a whole, i.e., the *entire* proposed substitute claim, when showing where there is sufficient written description support for each claim feature. *Nichia Corp. v. Emcore*, IPR2012-0005, slip op. at 4 (PTAB June 3, 2013) (Paper 27).

In its Motion to Amend, JPT does not set forth adequate written description support for all of the claim features. Rather, JPT merely addresses the new claim features added by the proposed substitute claims. Mot. Amend 3–7. For that reason alone, JPT’s Motion to Amend is insufficient.

In addition, we are not persuaded that JPT has demonstrated that the original disclosure of the ’529 patent provides adequate written description support under 35 U.S.C. § 112, ¶ 1, even for all of the new claim features. Notably, JPT’s Motion to Amend does not provide sufficient explanation or evidence to establish that the new “resizing” claim feature—“the synchronizer . . . resizes the sector simultaneously with a change in the area

displayed in the detailed view” (proposed substitute claim 29)—is disclosed adequately in the ’529 patent’s original disclosure.

In its Motion to Amend, JPT directs our attention to the following portions of the original disclosure to support its position that the “resizing” claim feature is disclosed adequately (*id* at 3–5):

Simultaneously highlighted sector or arc 34 of Fig 3 will rotate [counter-clockwise (CCW)] to highlight new field 36 in Fig 4 and the actual area being viewed. The highlighted area will still cover an angle or arc 32, which will be approximately 80°, but may change slightly *because of imperfections in the images*. Thus when the viewed arc is moved, one of the lines bounding the highlighted arc *may move faster or slower than the other line to reflect this*.

Ex. 1021, 26; Ex. 1001, 5:51–58 (emphases added).

When the detailed field of view is changed, the highlighted area in the map *simultaneously changes* to show the area being viewed. This enables the user to be more easily acclimated to and understand an area being viewed and also to understand more fully the direction in which the detailed view is taken.

Ex. 1021, 32–33; Ex. 1001, 9:31–36 (emphasis added by JPT).

We reproduce below Figure 3 of the ’529 patent, which appears to be the same as Figure 3 of the original disclosure (Ex. 1021, 43):

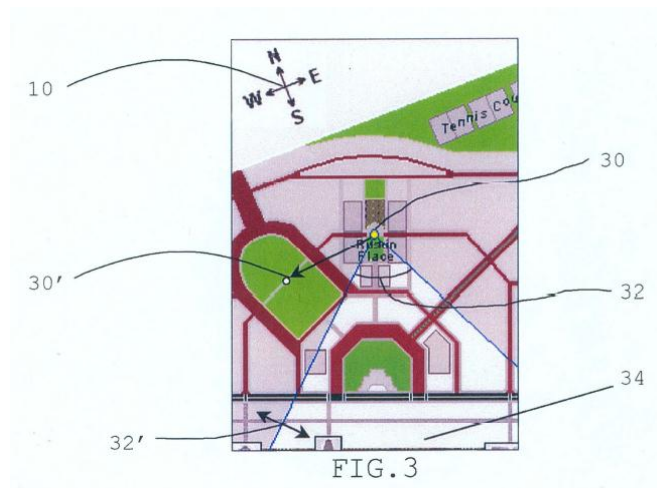


Figure 3 of the '529 patent depicts a window showing a map which includes the area covered by a panoramic image. According to the '529 patent's original disclosure, the highlighted sector or arc 34 as shown in Figure 3 will rotate to highlight the actual area being viewed in the detailed view. Ex. 1021, 26; Ex. 1001, 5:51–53.

We are not persuaded by JPT's argument that those cited portions of the '529 patent's original disclosure provides adequate written description support for the “resizing” claim feature. The written description test is whether the original disclosure of the application relied upon reasonably conveys to a person of ordinary skill in the art that the inventor had possession of the claimed subject matter as of the filing date. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). “Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed.” *Id.*

We are cognizant that the original disclosure need not describe the claimed subject matter in exactly the same way as the terms used in the claims. *See In re Wright*, 866 F.2d 422, 425 (Fed. Cir. 1989). However, a description which renders obvious the invention sought is not sufficient. *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). Moreover, even if the claimed subject matter could have been “envisioned” from the earlier disclosure, it is not enough to establish adequate written description support. *Goeddel v. Sugano*, 617 F.3d 1350, 1356 (Fed. Cir. 2010).

Here, we are unpersuaded that the mere disclosure of *imperfections in the images* is sufficient to describe the claimed subject matter—“the

synchronizer . . . resizes the sector simultaneously with a change in the area displayed in the detailed view.” See Ex. 1021, 26:15–18; Ex. 1001, 5:51–58 (“The highlighted area will still cover an angle or arc 32, which will be approximately 80°, but may change slightly because of imperfections in the images.”) (emphasis added)).

The scope of the “resizing” claim feature is broad. However, the cited portions of the ’529 patent’s original disclosure clearly indicate that the system was neither programmed nor designed for *a user to resize the sector*. *Id.* Rather, it is the *imperfections in the images* that randomly cause the resizing. In fact, the cited portions of the original disclosure indicate that the system was designed to maintain a constant angle of approximately 80°. *Id.*

Furthermore, the *imperfections of the images* are caused by the rotational movement of viewed arc 34. *Id.* (“[W]hen the viewed arc is moved, one of the lines bounding the highlighted arc *may move faster or slower than the other line to reflect this [slight change in the angle of the arc].*”). It is unclear from the original disclosure that the resizing (if any) caused by the *imperfections in the images* will be maintained once viewed arc 34 stops rotating, or the system will correct itself, returning the arc to an angle of approximately 80°. The user may not even notice the slight resizing that occurred during the rotation.

Moreover, the ’529 patent’s original disclosure does not indicate that *the imperfections in the images* occur consistently the same way or cause the same degree of resizing. For instance, it is unclear whether the sector will decrease or increase in size, which line bounding the highlighted arc is moving faster or slower at what direction, or how much the section will be resized. Such random and accidental changes caused by *the imperfections in*

the images do not reasonably convey to one of ordinary skill in the art that the inventor had possession of the claimed subject matter—“the *synchronizer . . . resizes the sector* simultaneously with a change in the area displayed in the detailed view.” The relied-upon portions of the Specification fail to describe a “synchronizer” that has any control over these imperfections or random movements.

In view of the foregoing, we are not persuaded that the ’529 patent’s original disclosure reasonably conveys to one of ordinary skill in the art that the inventor had possession of the “resizing” claim feature as of the filing date of the original disclosure. For all of the reasons stated above, JPT’s Motion to Amend fails to set forth the written description support for each proposed substitute claim as required by 37 C.F.R. § 42.121(b)(1) and § 42.121(b)(2).

3. Patentability over Prior Art

The patent owner bears the burden of proof in demonstrating patentability of the proposed substitute claims over the prior art in general, and, thus, entitlement to add these claims to its patent. *Idle Free*, slip op. at 7. In a motion to amend, the patent owner must show that the conditions for novelty and non-obviousness are met for the prior art available to one of ordinary skill in the art at the time of the invention. With regard to obviousness as the basis of potential unpatentability of the proposed substitute claims, the patent owner should present and discuss facts which are pertinent to the first three underlying factual inquiries of *Graham*, 383 U.S. at 17–18: (1) the scope and content of the prior art, (2) differences between the claimed subject matter and the prior art, and (3) the level of

ordinary skill in the art, *with special focus on the new claim features* added by the proposed substitute claims. The patent owner should identify each new claim feature, and come forward with technical facts and reasoning about that particular feature. Some discussion and analysis should be made about the specific technical disclosure of the closest prior art as to each particular feature, and the level of ordinary skill in the art, in terms of ordinary creativity and the basic skill set of a person of ordinary skill in the art, regarding the feature.

Here, we are unpersuaded that JPT has demonstrated by preponderance of evidence that the proposed substitute claims are patentable. In its Motion to Amend, JPT does not address, in any meaningful way, what was previously known in the art, much less the level of ordinary skill in the art, regarding each new claim feature added by its proposed substitute claims. Notably, proposed substitute claim 30 adds the following features:

- (1) wherein the detailed view is a portion of a *panoramic image* of a geographic area, the panoramic image comprises a combination of a plurality of images of the geographic area captured by one or more digital cameras, said point displayed on the map indicates a location of the one or more digital cameras when the images were captured,
- (2) the display and the map display are presented simultaneously in a *single window*, and
- (3) the *synchronizer* changes said area displayed in the detailed view simultaneously with a change in said point displayed on the map.

Panoramic image

First, JPT does not address, in its Motion to Amend, what was previously known in the art, let alone the level of ordinary skill in the art, regarding the “panoramic image” feature. JPT merely argues that Chan does not disclose the new claim feature. Mot. Amend 11–12. Chan, however, is not the closest known prior art with respect to the “panoramic image” feature. Although Chan is the closest known prior art as to the claim features recited in the original claims, the “panoramic image” feature was not presented in the original claims.

Interestingly, JPT even fails to discuss its own admitted prior art (Ex. 1001, 3:60–4:39) regarding the “panoramic image” claim feature. Nor does JPT discuss Poelstra⁵ in its Motion to Amend, with respect to that new claim feature, even though JPT’s Motion confirms that Poelstra is known prior art that was cited by the Examiner during the prosecution of the ’529 patent (Mot. Amend 8–9).

Figure 2 of the ’529 patent, labeled as “Prior Art,” shows a detailed view of a portion of the 360° panoramic image of a geographic area, shown in Figure 1, which also is labeled as “Prior Art.” Ex. 1001, 4:19–21. According to JPT’s admitted prior art, the 360° panoramic image “was taken with multiple successively rotated exposures using a digital camera to take a series of pictures and splicing the pictures together to form the 360° panoramic image, but it can also be taken with fewer exposures using a camera with a panoramic or 180° (or narrower) lens.” *Id.* at 3:66–4:3.

⁵ Poelstra, US 5,563,650, issued Oct. 8, 1996 (Ex. 1028).

Poelstra confirms that the techniques described in JPT's admitted prior art for producing panoramic images were well-known in the art at the time of the invention—"The production of panoramic images whereby the whole surroundings from *one point* can be observed is known." Ex. 1028, 1:25–26 (emphasis added). Poelstra describes that for the purposes of producing panoramic images, "a number of photos can be taken, with a photographic camera, which can then be put together to form a panoramic image." *Id.* at 1:27–29. Poelstra further discloses displaying a point on a map to indicate a location of the camera when the photos were taken. *Id.* at 3:38–39, Fig. 5.

There is no explanation, in the Motion to Amend, as to why such technical disclosures do not meet the "panoramic image" feature. Indeed, one of ordinary skill in the art would have recognized that at least Poelstra describes or suggests that new claim feature. Addressing only a reference that is not the closest known prior art with respect to the "panoramic image" claim feature is insufficient to establish that proposed substitute claim 30 is patentable over prior art.

Single window

JPT's Motion to Amend also does not identify what was known previously in the art regarding the "single window" feature. Nor does it discuss the closest known prior art, or the level of ordinary skill in the art, as to that particular claim feature.

As noted above, JPT does not provide a claim construction for the claim term "a single window." JPT directs our attention to the following

portion of the '529 patent's original disclosure for the written description support of the "single window" feature:

Fig 4 is similar to Figs 2 and 3, except that it combines the two windows into *one window with two sections*, a left section 40—the detailed field of view, and a right section 38—the map. The single widow of Fig 4 is the presently preferred embodiment since, by *combining both windows into one, is simpler in appearance*.

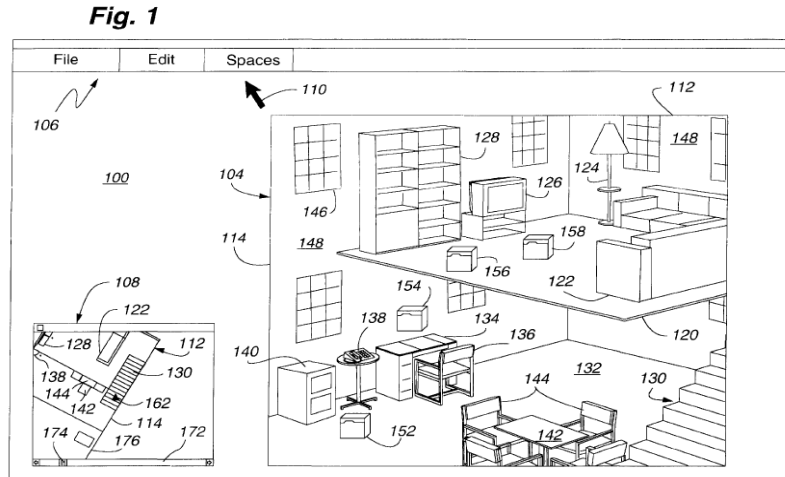
Mot. Amend 6; Ex. 1021, 25; Ex. 1001, 5:13–18 (emphases added).

According to this cited disclosure, we observe that "a single window" may have two sections, and "combining two windows into one is simpler in appearance."

To substantiate its position that proposed substitute claim 30 is patentable, JPT asserts that Wei does not disclose the "single window" claim feature. Mot. Amend 13. However, Wei is not the closest known prior art with respect to that new claim feature. Although Wei is the closest known prior art as to the claim features recited in the original claims, the "single window" feature was not presented in the original claims.

Again, JPT's Motion does not discuss the prior art references known to JPT that appear to describe the new claim feature. For example, Chan and Prouty, which are relied upon by Google in one of the instituted grounds of unpatentability as discussed above, each show a computer screen that displays both a map view and a detailed view of a scene. See Ex. 1005, Figs. 5–6 (reproduced above in our anticipation analysis based on Chan); Ex. 1020, Fig. 1.

Figure 1 of Prouty, reproduced below, illustrates a computer screen display of a computer 3D graphical system:



As shown in Figure 1 of Prouty, the computer monitor displays a *single window* simultaneously depicting main view window 104, showing a 3D interior area of a building (the detailed view), *and* view box window 108, showing a top plan view of the interior area (the map view). Ex. 1020, 7:30–67, 9:29–49. There is no explanation, in JPT’s Motion to Amend, as to why such technical disclosures do not meet the “single window” feature. Indeed, one of ordinary skill in the art would have recognized that at least Prouty describes or suggests that new claim feature.

Although JPT’s Motion confirms that Chan is a known prior art reference, JPT does not discuss Chan with respect to the “single window” feature. Mot. Amend 9–10. Nor does JPT’s Motion acknowledge Prouty as one of the known prior art references. Limiting the patentability analysis to only Wei, which is not the closest prior art with respect to that the “single window” claim feature, is insufficient to establish that proposed substitute claim 30 is patentable over the prior art.

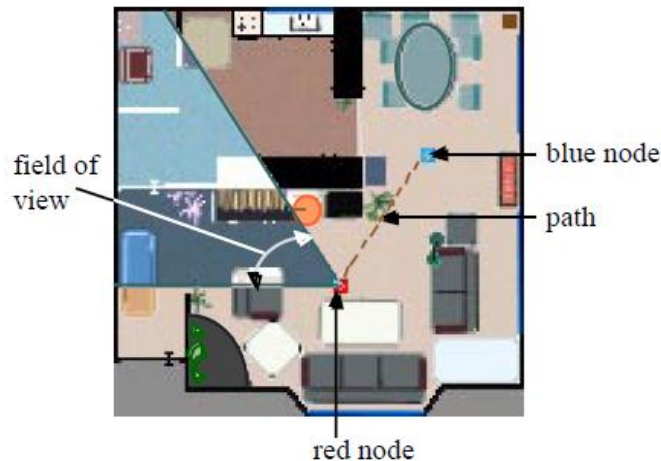
Synchronizer

In its Motion to Amend, JPT argues that Wei does not disclose a synchronizer that “changes said area displayed in the detailed view *simultaneously* with a change in said point displayed on the map.” Mot. Amend 12–13 (emphasis added). In particular, JPT alleges that, because Wei indicates that the directional indicator shows *the current exploring status*, “Wei advocates waiting until a user commits any changes in the detailed view before updating the ‘current exploring status’ by changing what is shown in the map view.” *Id.* at 12.

However, we are not persuaded by JPT’s arguments, because they fail to recognize that Wei’s directional indicator reflects the current exploring status of the active panorama *dynamically* (i.e., immediately and concurrently). Ex. 1006, 14. JPT’s Motion also does not address Wei’s disclosure regarding *hopping between multiple nodes*.

As discussed above in our anticipation analysis based on Wei, Wei’s interactive player is a navigation tool for displaying and exploring a 360° panoramic scene, allowing the user to *interact dynamically* with the panoramic scene. Ex. 1006, 10, 13–14. Wei’s directional indicator (the dynamical map view) shows the user’s current position and viewing direction of the active panorama that is displayed *simultaneously* in the viewport (the detailed view). *Id.* at 11, 13–14. The user may use the interactive player to hop between multiple nodes. *Id.* at 14. Wei’s directional indicator specifically shows where the user can go next in the panoramic scene. *Id.*

Figure 4.7 of Wei is reproduced below:



As depicted in Figure 4.7 of Wei, the directional indicator allows the user to *hop from the red node*—a point displayed in the directional indicator that represents the position of the current active panorama shown in the viewport—to the *connected inactive node* (shown as a blue node with a path). *Id.* at 14. Wei further describes that the user should see where he or she is hopping to in the panoramic-scene viewport. *Id.* In light of Wei’s full disclosure of the directional indicator, one of ordinary skill in the art would have recognized that Wei describes or suggests “chang[ing] said area displayed in the detailed view *simultaneously* with a change in said point displayed on the map,” as recited in proposed substitute claim 30.

In its Motion to Amend, JPT does not address those relevant portions of Wei. Therefore, we are not persuaded that JPT’s Motion has set forth a sufficient showing to demonstrate that proposed substitute claim 30 is patentable over the prior art.

Level of Ordinary Skill

In addition, JPT's Motion has not proffered sufficient explanations or evidence to address the level of ordinary skill in the art at the time of the invention. Notably, JPT does not explain adequately why one of ordinary skill in the art would not have combined the technical disclosures that are the closest prior art as to each of the claim features to arrive at the claimed invention. For example, Wei describes *a single computer monitor* that displays both a detailed view of a panoramic scene and a directional indicator (a dynamic map view). Nevertheless, JPT does not provide sufficient reason why, in light of Prouty's disclosure of combining a detailed view and a map view in *a single window*, it would not have been obvious to modify Wei's computer monitor to display both views in a single window, much less why such a combination of known elements would have been beyond the level of ordinary skill in the art. *KSR*, 550 U.S. at 417 (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”).

4. Conclusion

For the foregoing reasons, JPT has not, in its Motion to Amend, set forth a prima facie case for the relief requested or satisfied its burden of proof. Consequently, the current situation does not require us to consider Google's Opposition and JPT's Reply. JPT's Motion to Amend is *denied*.

F. JPT's Motion to Exclude

JPT's Motion to Exclude seeks to exclude the following items of evidence:

- (1) Dr. Braasch's Declaration (Ex. 1003) filed in support of Google's Petition;
- (2) Dr. Neff's cross-examination testimony concerning Dykes (Ex. 2032, 19:13–27:24); and
- (3) Dr. Braasch's Declaration (Ex. 1031) filed in support of Google's Opposition to JPT's Motion to Amend. Paper 52 ("Mot. Exclude").

Google filed an Opposition to JPT's Motion to Exclude. Paper 60 ("Opp. Exclude"). However, JPT did not file a reply to Google's Opposition to its Motion to Exclude. As the movant, JPT has the burden of proof to establish that it is entitled to the requested relief. *See* 37 C.F.R. § 42.20(c). For the reasons stated below, JPT's Motion to Exclude is *denied*.

Dr. Braasch's Declaration filed in support of Google's Petition

JPT alleges that Dr. Braasch's Declaration (Ex. 1003) should be excluded, because Dr. Braasch did not interpret expressly the claim term "detailed view" in his Declaration. Mot. Exclude 7–9. JPT contends that Dr. Braasch's testimony concerning Chan is not based on our claim construction set forth in the Decision on Institution. *Id.* at 8. According to JPT, Dr. Braasch's testimony is "based on an improper understanding of the claims" and, therefore, irrelevant. *Id.*

Google counters that JPT did not object timely to Dr. Braasch's testimony. Opp. Exclude 2–3. We agree that there is insufficient showing that JPT has objected timely to Dr. Braasch's testimony. Mot. Exclude 7–9.

Under 37 C.F.R. § 42.64 (b), “[a]ny objection to evidence submitted during a preliminary proceeding must be served within ten business days of the institution of the trial.” A motion to exclude must identify the objection in the record and must explain the objection. 37 C.F.R. § 42.64(c). Here, JPT’s Motion to Exclude does not indicate that JPT served Google with an objection to Dr. Braasch’s testimony in accordance with 37 C.F.R. § 42.64(b). Mot. Exclude 7–9. Nor does JPT’s Motion identify or explain such an objection. Accordingly, JPT’s request to exclude Dr. Braasch’s testimony concerning Chan (Ex. 1003) is *denied*.

Dr. Neff’s cross-examination testimony concerning Dykes

JPT argues that Dr. Neff’s cross-examination testimony concerning Dykes (Ex. 2032, 19:13–27:24) should be excluded, because it exceeds Dr. Neff’s direct testimony (Ex. 2028). Mot. Exclude 1–4. JPT proffers Dr. Neff’s direct testimony (Ex. 2028) in support of JPT’s Reply to Google’s Opposition to JPT’s Motion to Amend.

Google counters that it neither comments nor relies upon Dr. Neff’s cross-examination testimony concerning Dykes in any briefing papers, including its Observations on Cross-Examination of Dr. Neff. Opp. Exclude 6. Upon review of the record before us, we agree with Google that it does not rely, in any respects, on Dr. Neff’s cross-examination testimony concerning Dykes. As such, JPT’s Motion has not identified sufficient reasons to exclude Dr. Neff’s cross-examination testimony concerning Dykes and, therefore, JPT’s request is *denied*.

Dr. Braasch's Declaration filed in support of Google's Opposition to JPT's Motion to Amend

JPT also seeks to exclude Dr. Braasch's Declaration (Ex. 1031) concerning Noguchi (U.S. Patent No. 6,903,763) and the "resizing" claim feature added by proposed substitute claim 29. Mot. Exclude 4–7, 9–12. Dr. Braasch's Declaration was filed in support of Google's Opposition to JPT's Motion to Amend.

As noted above, the current situation did not require us to consider Google's Opposition to JPT's Motion to Amend and JPT's Reply filed in support of its Motion to Amend. Consequently, we do not rely on Dr. Braasch's Declaration (Ex. 1031) concerning Noguchi (U.S. Patent No. 6,903,763) and the "resizing" claim feature added by the proposed substitute claim 29, in rendering our decision on JPT's Motion to Amend. Thus, JPT's request to exclude Dr. Braasch's Declaration is *denied as moot*.

Conclusion

For the foregoing reasons, JPT's Motion to Exclude is *denied*.

III. CONCLUSION

Google has met its burden of proof by a preponderance of the evidence in showing that claims 1–6, 10–15, 17–19, 21, 23–25, 27, and 28 of the '529 patent are unpatentable based on the following grounds of unpatentability:

Claims	Basis	References
1, 4–6, 17, 23, 28	§ 102(e)	Chan
1, 4, 5, 17, 21, 23, 27	§ 102(b)	Wei
10, 13, 14, 15	§ 103(a)	Chan and Naughton
2, 3, 11, 12, 18, 19, 24, 25	§ 103(a)	Chan, Galitz, and Naughton
15, 21, 27	§ 103(a)	Chan and Prouty
2, 3, 10–15, 18, 19, 21, 24, 25	§ 103(a)	Wei and Naughton
6, 28	§ 103(a)	Wei and Dykes

IV. ORDER

In consideration of the foregoing, it is
ORDERED that claims 1–6, 10–15, 17–19, 21, 23–25, 27, and 28 of the '529 patent are held unpatentable;

FURTHER ORDERED that JPT's Motion to Amend Claims is *denied*;

FURTHER ORDERED that JPT's Motion to Exclude Evidence is *denied*; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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