

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NEARMAP US, INC.,
Petitioner,

v.

EAGLE VIEW TECHNOLOGIES, INC.,
Patent Owner.

IPR2022-01090
Patent 8,078,436 B2

Before THOMAS L. GIANNETTI, GARTH D. BAER, and
RUSSELL E. CASS, *Administrative Patent Judges*.

BAER, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Nearmap US, Inc. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–42 and 46–66 (the “challenged claims”) of U.S. Patent No. 8,078,436 B2 (Ex. 1001, “the ’436 patent”). Paper 2, 1 (“Pet.”). Eagle View Technologies, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With our authorization, Petitioner filed a Reply to Patent Owner’s Preliminary Response (Paper 7, “Pet. Reply.”) and Patent Owner filed a sur-Reply (Paper 8, “PO Sur-reply”).

An *inter partes* review may not be instituted unless it is determined that “the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314 (2018); *see also* 37 C.F.R § 42.4(a) (2021) (“The Board institutes the trial on behalf of the Director.”). For the reasons provided below and based on the record before us, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we institute an *inter partes* review on all grounds set forth in the Petition.

B. Related Proceedings

The parties identify the following related matters: *Eagle View Technologies, Inc. v. Nearmap US, Inc.*, 2:21-cv-00283, (D. Utah); *Eagle View Technologies, Inc. v. GAF Materials LLC*, 2:22-cv-00215 (D. Utah); *Pictometry International Corp. v. Roofr, Inc.*, 1:21-cv-01852 (D. Del); *Eagle View Technologies, Inc. v. Xactware Solutions, Inc.*, 1:15-cv-07025 (D. New

Jersey); *Eagle View Technologies, Inc. v. Xactware Solutions, Inc.*, Appeal to the Court of Appeals for the Federal Circuit, Case Nos. 2021-1048, 2021-1049, and 2021-1743 (consolidated); *Eagle View Technologies, Inc. v. GAF Materials LLC*, 1-21-cv-10669 (D. New Jersey); *Eagle View Technologies, Inc. v. Aerialogics, LLC*, 2:12-cv-00618 (WD Wash); *Eagle View Technologies, Inc. v. RoofWalk, Inc.*, 2-12-cv-00544 (WD Wash). Pet. 98; Paper 6, 2–3.

C. The '436 Patent (Ex. 1001)

The '436 patent is directed to a “roof estimation system, which generates and provides roof estimate reports annotated with indications of the size, geometry, pitch and/or orientation of the roof sections of a building.” Ex. 1001, code (57). The system can include “a roof estimating software program and a location-linked, image file database.” *Id.* at 1:67–2:1. “During use, the physical address or location information of a building is provided to the program, which then presents aerial images of roof sections on the building at the specific address location.” *Id.* at 2:2–5. After the aerial images are received, “[a]n image analysis and calibration is then performed either manually and/or via a software program that determines the geometry, the slopes, the pitch angles, and the outside dimensions of the roof sections.” *Id.* at 2:6–9.

Figure 3 is reproduced below.

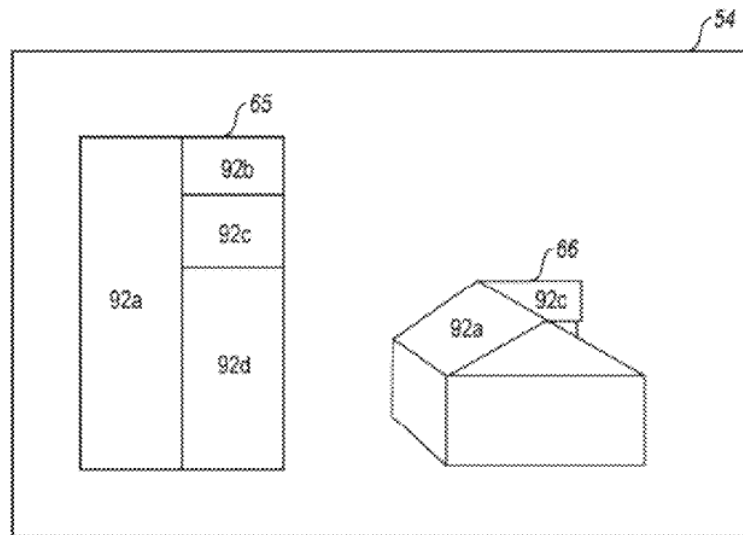


Fig. 3

Figure 3 shows top and perspective views of a building. *Id.* at 3:33–34, 4:9–10.

In certain embodiments, the roof estimation system includes a roof modeling engine that “generates a model of the roof of the specified building” and a report generation engine that “generates a final roof estimate report based on a 3D model.” Ex. 1001, 8:15–16, 9:51–52. The report “typically includes one or more plan (top-down) views of the 3D model, annotated with numerical values for the slope, area, and/or lengths of the edges of at least some of the plurality of planar roof sections of the 3D model of the roof.” *Id.* at 9:54–57.

D. Illustrative Claim

Of the challenged claims, claims 1, 18, 36, 58, 60, and 63 are independent. Claim 1 is illustrative and is reproduced below.

1. A computing system for generating a roof estimate report, the computing system comprising:
a memory;

a roof estimation module that is stored on the memory and that is configured, when executed, to:

receive a first and a second aerial image of a building having a roof, each of the aerial images providing a different view of the roof of the building;

correlate the first aerial image with the second aerial image;

generate, based at least in part on the correlation between the first and second aerial images, a three-dimensional model of the roof that includes a plurality of planar roof sections that each have a corresponding slope, area, and edges; and

generate and transmit a roof estimate report that includes one or more top plan views of the three-dimensional model annotated with numerical values that indicate the corresponding slope, area, and length of edges of at least some of the plurality of planar roof sections using at least two different indicia for different types of roof properties.

Ex. 1001, 15:58–16:12.

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability. Pet. 2.

Claims Challenged	35 U.S.C. §	References/Basis
1–4, 6–22, 24–37, 39–42, 46–66	103(a) ¹	Littleworth ² , Linden ³ , Middlebrook ⁴

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. § 103 that became effective after the filing of the application that led to the ’961 patent. Therefore, we apply the pre-AIA version of 35 U.S.C. § 103.

² R.M. Littleworth et al., *Three-Dimensional Mapping and As-Built Computer Modeling by Analytical Photogrammetry*, International Archives of Photogrammetry and Remote Sensing 29 (1992)² (Ex. 1005, “Littleworth”).

³ Linder, *Digital Photogrammetry Theory and Applications*, Springer-Verlag (2003) (Ex. 1012, “Linder”).

⁴ Mark Middlebrook, *AutoCAD 2005 for Dummies*, Wiley Publishing (May 13, 2004)⁴ (Ex. 1016, “Middlebrook”).

Claims Challenged	35 U.S.C. §	References/Basis
5, 23, 38	103(a)	Littleworth, Linden, Middlebrook, Nishitani ⁵

Petitioner submits declarations from Dr. David Forsyth and June Ann Munford. Exs. 1004, 1015. Patent Owner submits a declaration from Chandrajit Bajaj, Ph.D. Ex. 2001.

II. DISCUSSION

A. Discretion under 35 U.S.C. § 325(d)

Patent Owner contends we should deny institution under 35 U.S.C. § 325(d) because one of the asserted references, Nishitani, “was substantively considered by the Examiner during Supplemental Examination of the ’436 Patent.” POPrelim. Resp. 7–8. In evaluating arguments under § 325(d), we use a two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of the first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential). For the reasons given below, we are not persuaded to exercise our discretion to deny the Petition based on § 325(d).

First, we agree with Petitioner that the Petition does not present the same or substantially the same art previously presented to the Office during

⁵ JP 2006-185367A, July 13, 2006 (English translation) (Ex. 1006, Nishitani).

supplemental examination. Pet. Reply 3–5. As Petitioner notes, the examiner considered U.S. Publication No. 2006/0137736 (“Nishitani ’736”), not Nishitani, which is a Japanese publication. *Id.* at 3. In addition, even if the asserted reference (Nishitani) is substantially the same as Nishitani ’736 as Patent Owner asserts, *see* PO Prelim. Resp. 9, many of Petitioner’s challenges (60 of the 63 challenged claims) do not involve Nishitani and, for the three that do, the Petition asserts Nishitani in combination with three other references—Littleworth, Linder, and Middlebrook—that were not before the Office. *See* Pet. 2; Pet. Reply 4.

We also agree with Petitioner that the Petition does not present the same or substantially the same arguments as those previously presented to the Office. *Id.* at 5–10. During reexamination, Patent Owner argued, and the examiner determined, that Nishitani ’736 did not teach a report “annotated with numerical values” as the at-issue claims required. *See* Ex. 1003, 852, 1011. Here, Petitioner relies on a new reference—Middlebrook—for teaching annotating a roof estimate report with numerical values. *See* Pet. 40, *see also id.* at 21–28, 40–49. Therefore, Petitioner’s arguments relying on Middlebrook to remedy deficiencies identified by the Examiner in Nishitani ’736, were not previously presented to the Office.

Further, we disagree with Patent Owner that the same arguments were previously before the office because the claims require correlating non-stereoscopic images, yet “the Petition relies on portions of Linder that include substantially the same disclosure as Nishitani ’736—the use of *stereoscopic images*.” PO Sur-reply 3. Although Petitioner relies on Linder’s image-correlation teaching, Petitioner’s proposed combination applies that teaching to Littlewood’s non-stereoscopic images. *See* Pet. 21–

23, 35–37. Thus, we disagree with Patent Owner’s argument that Petitioner’s combination has the same stereoscopic-image problem as the Nishitani ’736 reference that the Office previously considered.

In sum, although Nishitani ’736 was previously presented to the Office, the Petition’s arguments and art are both new. Thus, we decline to exercise our discretion to deny institution under § 325(d).

B. Discretion under 35 U.S.C. § 314(a)

Relying on framework from *General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (PTAB Sept. 6, 2017) (precedential as to Section II.B.4.i) (“*General Plastic*”), Patent Owner asserts that we should deny institution under § 314(a) because this Petition is the fourth to challenge the ’436 patent. PO Prelim Resp. 14–15. We disagree.

The main concern motivating the *General Plastic* framework is “the potential for abuse of the review process by repeated attacks on patents” by a petitioner who files “[m]ultiple, staggered petitions challenging the same patent and same claims using our decisions as a roadmap, until a ground is found that results in the grant of review.” *General Plastic*, Paper 19 at 17. Here, the potential for abuse is minimal because this is the first time this petitioner has challenged the ’436 patent, and Patent Owner does not allege any connection or relationship between this Petitioner and the previous petitioners that might warrant exercising our discretion to deny institution. PO Prelim Resp. 14–15; Sur-reply 8–9; *compare Valve Corp. v. Elec. Scripting Prods. Inc.*, IPR2019-00062, Paper 11 at 9–10 (Apr. 2, 2019) (precedential) (exercising discretion to deny institution based on a different petitioner’s earlier-filed petition where the different petitioners were co-

defendants in a related district-court litigation, and where both petitioners were accused of infringing the challenged patent based on the same product incorporating technology licensed from petitioner Valve). In addition, it is reasonable that Petitioner filed its own Petition after the three previous petitions filed by unrelated parties given that “the present litigation dispute between Petitioner and Patent Owner did not begin until March 2021—well after the last of the three prior IPR petitions was filed.” Pet. Reply 10. Thus, this subsequent challenge against the ’436 patent appears to be a result of Patent Owner’s litigation activity, rather than Petitioner’s abuse of the review process. We find the circumstances in this case do not warrant denying the Petition under § 314(a).

C. Claim Construction

Claims “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b).” 37 C.F.R. § 42.100(b).

1. “not a stereoscopic pair”

Petitioner proposes that images that “are ‘not a stereoscopic pair,’” as required in claims 1 and 18 “mean[s] that the two images are ‘captured independently of each other and without metadata (or other information) relating angles of cameras that captured the images.’” Pet. 5 (quoting Ex. 1004 ¶ 20). In addition to its expert, Petitioner cites as support the patent’s prosecution history, in which Patent Owner asserted this definition. *Id.* at 5–6 (citing Ex. 1003, 167–169; Ex. 1004 ¶ 21). Patent Owner does not dispute Petitioner’s proposed construction in its Preliminary Response.

Based on the present record, we agree with Petitioner that images that are not a stereoscopic pair means that the two images are captured

independently of each other and without metadata (or other information) relating angles of cameras that captured the images.

D. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art at the time of the alleged invention would have had “at least a Bachelor’s Degree in an academic area emphasizing the design of electrical, computer, or software technologies, or a similar discipline, and at least two years of experience related to computerized image analysis and three-dimensional modeling.” Pet. 4 (citing Ex. 1004 ¶ 18). Petitioner further asserts that “[s]uperior education could compensate for a deficiency in work experience, and vice-versa.” *Id.* Patent Owner does not address the level of ordinary skill at this stage of the proceeding. For purposes of this Decision, we adopt Petitioner’s assessment of the level of ordinary skill in the art.

E. Description of Prior Art References

1. Littleworth (Ex. 1005)

Littleworth is a paper entitled “Three-Dimensional Mapping and as-Built Computer Modelling by Analytical Photogrammetry,” and “describes how and why analytical photogrammetry, interfaced with a CAD system, has been used to create 3-dimensional computer models of development sites and engineering structures.” Ex. 1005, Abstract. Littleworth explains that “[w]ith the introduction of industry wide CAD packages (e.g. Microstation, Autocad) the potential for introducing analytical photogrammetric techniques to new users has greatly expanded,” but that “the accuracy achievable creating 3-dimensional computer models is restricted given the geometric restraints imposed by the CAD system.” *Id.* at 754. Littleworth states that the “Engineering Photogrammetry Unit (EPU)

was launched in 1988” by City University in London “following the purchase of an Intergraph Intermap Analytic Photogrammetric Workstation (IMA).” *Id.* Littleworth provides “examples of some recent projects undertaken by EPU” to “illustrate the evolution of [a] 3-dimensional photogrammetric product” for “potential new photogrammetric users.” *Id.*

Littleworth describes a project involving the “Hatfield Aerodrome” as “one of the first projects undertaken by EPU.” Ex. 1005, 754. For this project, EPU used “several aerial photographic libraries and archives held by various organisations” in the United Kingdom, including “[s]uitable vertical aerial photography at a scale of 1:5000” for “this particular site.” *Id.* a 755. Littleworth explains that “it was necessary to adapt the approach so that the detail digitised not only represented ground features accurately but gave a good visual impression of how these features actually appear,” as shown in Figure 1, reproduced below.

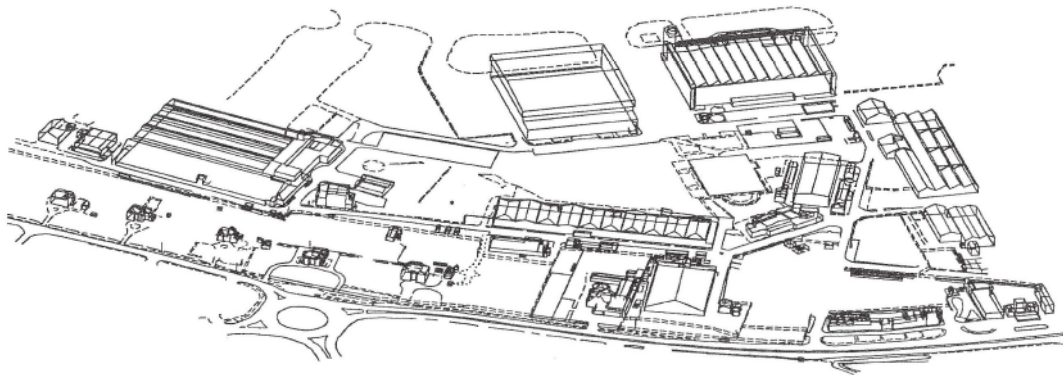


Fig.1 3-d model representing Hatfield Aerodrome.

Figure 1 of Littleworth shows a 3-d model representing Hartfield Aerodrome. Ex. 1005, 754.

Littleworth further explains that, for this project, “[r]oof detail was digitised indicating their pitch, major details on the roofs themselves, tree canopies indicating height and spread, fences and walls showing width and

height.” Ex. 1005, 755. Littleworth also states that “[t]he ground surface was represented by 0.25 metre contours” which “were derived from pertinent ground detail (kerb lines, boundaries etc.), a grid of spot heights and supplementary height points on important natural changes of slope processed using a digital terrain model package” as shown in Figure 2, reproduced below.

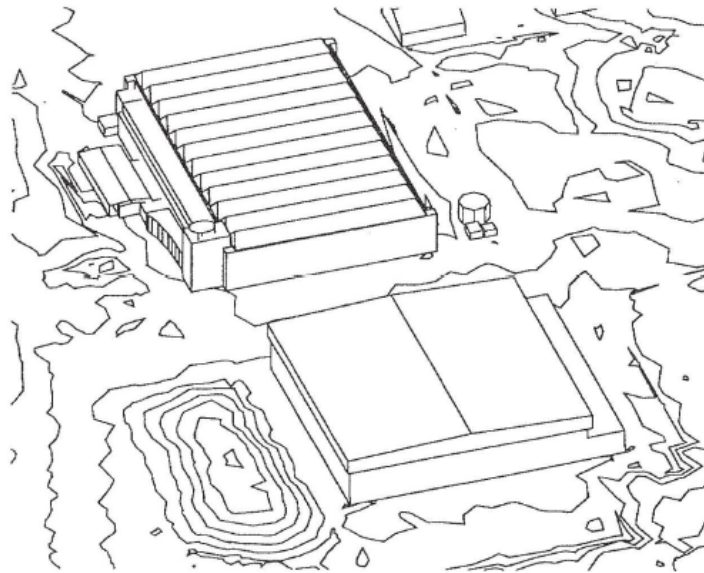


Fig. 2 3-d detail with DTM derived contours

Figure 2 shows a 3-d detail of the Hartford Aerodrome model with the ground surface represented by 0.25 meter contours. Ex. 1005, 755.

2. *Linder* (Ex. 1012)

Linder is a textbook entitled “Digital Photogrammetry Theory and Applications” by Wilfried Linder. Ex. 1012. Linder states that “photogrammetry can be defined as the ‘science of measuring in photos,’ and is a part of the field of remote sensing (RS).” *Id.* at 1.⁶ According to

⁶ The citations to Linder refer to the actual pages of the book, not to the page numbers added by Petitioner.

Linder, “Photogrammetry provides methods to give you . . . quantitative data,” such as the dimensions of a house that no longer exists from historic photos of the house. *Id.* As Linder explains, “[i]f you would like to determine distances, areas, or anything else, the basic task is to get object (terrain) co-ordinates of any point in the photo from which you can then calculate geometric data.” *Id.* Additionally, according to Linder, the principle of “stereoscopic viewing” is “used to get three-dimensional information in photogrammetry,” since with “two (or more) photos from the same object but taken from different positions” one can “easily calculate the three-dimensional co-ordinates of any point which is represented in both photos.” *Id.* at 1–2. Linder defines “the main task of photogrammetry” as “[f]or any object point represented in at least two photos . . . calculat[ing] the three-dimensional object (terrain) co-ordinates.” *Id.* at 2.

3. *Middlebrook (Ex. 1016)*

Middlebrook is a book entitled “AutoCAD 2005 for Dummies.”

Ex. 1016, cover. Middlebrook describes the use of “dimensions” in AutoCAD, which “are special text labels with attached lines that together indicate unambiguously the size of something” in an object. Ex. 1006, 229.⁷ Middlebrook explains that “as you edit an object—by stretching it for example—AutoCAD automatically updates the measurement displayed in the dimension text label to indicate the object’s new size.” *Id.* Middlebrook states that the “most common types” of dimensions are shown in Figure 10-3, reproduced below.

⁷ The citations to Middlebrook refer to the actual pages of the book, not to the page numbers added by Petitioner.

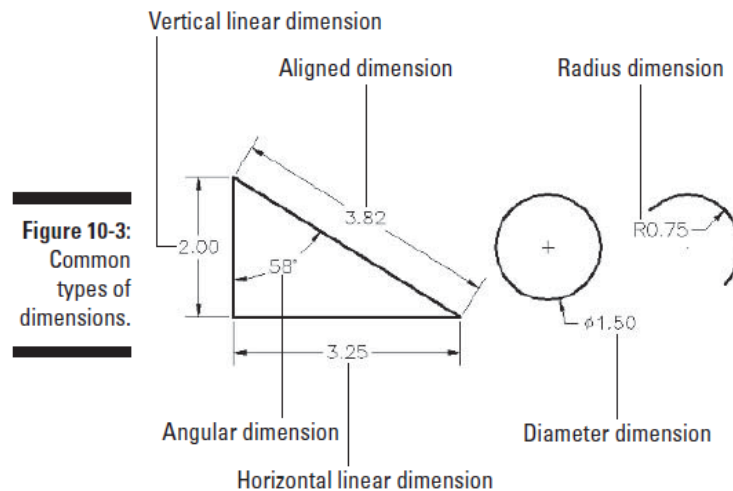


Figure 10-3 of Middlebrook illustrates common types of dimensions used in AutoCAD. Ex. 2006, 253–254.

Middlebrook states that each drawing includes a “paper space,” which “is a separate space in each drawing for composing a printed version of that drawing.” Ex. 1016, 62. First, Middlebrook explains, “[y]ou create the drawing itself, called the *model*, in *model* space,” and then “can create one or more plottable views,” each of which “is called a *layout*.” *Id.*

Middlebrook also states that a “paper space layout” includes one or more “viewports, each showing the 3D model from a different perspective.” *Id.* at 65. A user can “[d]efine the arrangement of viewports that AutoCAD should create.” *Id.* Figure 8-1 from Middlebrook shows a layout including multiple viewports showing different views of a three-dimensional model:

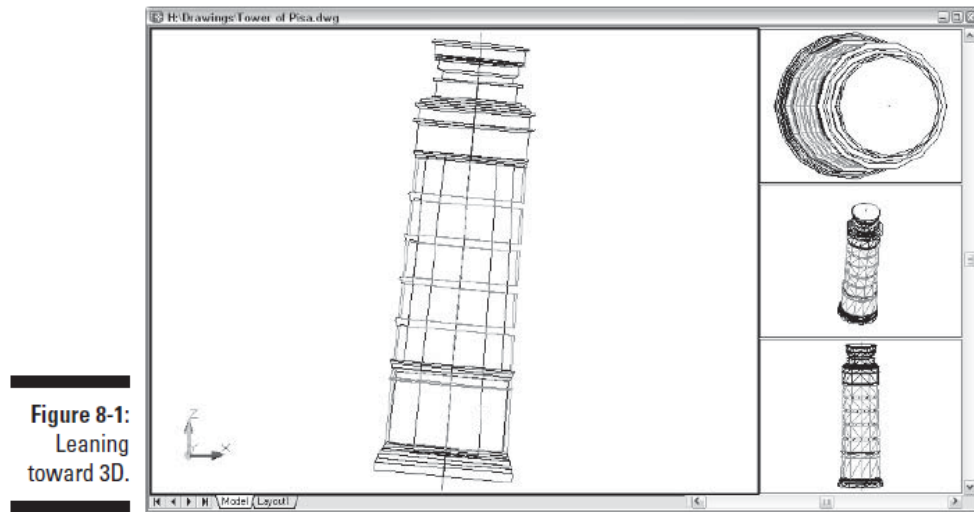


Figure 8-1 of Middlebrook shows a layout with multiple viewports showing different views of a three dimensional model. Ex. 1016, 180.

4. *Nishitani (Ex. 1006)*

Nishitani describes a system for “estimating . . . [the] installation cost of a solar power generating apparatus.” Ex. 1006, 1. According to Nishitani, “[a] customer desiring an estimate for a solar power generating apparatus uses the customer information inputting means . . . to access a webpage of a solar power generating apparatus installation supporting system that is the present invention, to input customer information following a customer information inputting screen.” *Id.* ¶42. Nishitani’s Figure 4 is reproduced below.

[FIG. 4]

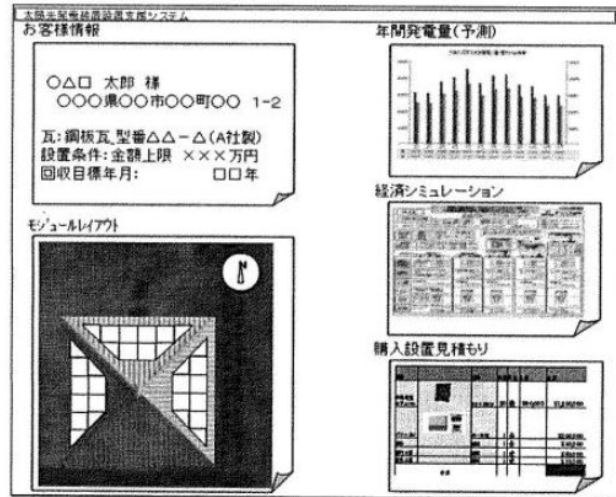


Figure 4 is “an example of an inputting screen for a solar power generating apparatus installation supporting system.” *Id.* ¶ 59.

F. Obviousness Analysis

1. Petitioner’s Proposed Combination of Prior Art

Petitioner contends that claims 1–4, 6–22, 24–37, 39–42, and 46–66 would have been obvious over Littleworth, Linder, and Middlebrook. Pet. 2. Petitioner adds a fourth reference, Nishitani to challenge dependent claims 5, 23, and 38. *Id.* Petitioner argues that “Littleworth discloses generating a three-dimensional model based on a non-stereoscopic pair of images that includes one or more *first ‘vertical aerial photography’* of the ‘redevelopment area in London’ and a *second ‘oblique photography image.’*” *Id.* at 21–22. Petitioner relies on Linder for “generat[ing] three-dimensional coordinates of any point represented by two photographs” by “correlating a first image and a second image based on a particular object point P that is shared between the first and the second images.” *Id.* at 23. Petitioner then relies on Middlebrook for teaching “enable[ing] users to annotate a . . . model with numerical values (or other visual indicia).” *Id.* at

24. Last, Petitioner looks to Nishitani for teaching “transmitting the generated and annotated three-dimensional model to a user device using a roof estimate report.” *Id.* at 25.

Petitioner argues that one of ordinary skill would have been motivated to modify Littleworth’s three-dimensional model generation system “to correlate images based on identified control points based on the teachings of Linder.” *Id.* at 29. Petitioner asserts that “Littleworth teaches that images are ‘studied and suitable control points [are] selected’ as part of generating a three-dimensional model,” but “does not describe in detail how these selected control points within the images are utilized to generate the model.” *Id.* However, according to Petitioner, “Linder describes that images are correlated based on control points within the images as part of generating a three-dimensional model.” *Id.* Thus, Petitioner asserts, one of ordinary skill “would have been motivated to correlate the images described in Littleworth based on the selected control points in order to allow the images to be utilized in the three-dimensional model generation process, as taught by Linder.” *Id.* Petitioner further argues that one of ordinary skill “would have been motivated and found it obvious to modify the Littleworth-Linder combination with the teachings of Nishitani in order to communicate the results of Littleworth’s three-dimensional modeling process in a manner that is easily understandable by users and in a format that can be easily used to guide construction tasks.” *Id.* at 30. Further, according to Petitioner, a skilled artisan “would have been motivated and found it obvious to modify the three-dimensional modeling and reporting system of the Littleworth-Linder-Nishitani combination, based on the teachings of Middlebrook, to select and print different views of a three-dimensional model generated by

the system including numerical annotations indicating various features of the model.” *Id.* at 31.

Based on the present record, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that claims 1–42 and 46–66 would have been obvious over the asserted prior art. *See id.* at 33–96. Patent Owner raises several objections to Petitioner’s obviousness showing. We address those issues below.

a) Top Plan View

Independent claims 1, 18, 36, and 58 require a first aerial image that is a “top plan view of the roof.” Petitioner relies on Littleworth for this element. *See* Pet. 35–36. Patent Owner challenges Petitioner’s showing. PO Prelim Resp. 16–21. In our Institution Decision in a related case, IPR2022-01009, based on similar arguments and evidence, we concluded Petitioner had shown sufficiently that Littleworth teaches this element. *See* IPR2022-01009, Paper 7 at 31–33; *see also* PO Prelim. Response 16 n.7. For consistency, we maintain our view that Littleworth teaches this element for the reasons stated in IPR2022-01009.

b) Correlating a Top Plan View and Oblique Perspective View

Independent claim 1 requires “correlat[ing] the first aerial image with the second aerial image” where “the first aerial image provides a top plan view of the roof and the second aerial image provides an oblique perspective view of the roof.” Independent claim 58 has similar language requiring correlating a top plan view and oblique perspective view. Petitioner asserts the prior art teaches this element because Littleworth teaches using control points from two images (one from vertical aerial photography and a second from oblique photography) to create a three-dimensional model, while

Linder details the process of correlating the images using control points. Pet. 35–37; *see id.* at 22–23.

Patent Owner asserts that Petitioner’s challenge fails because “Petitioner relies solely on Linder to show ‘correlating,’” yet “Linder does not disclose a correlation between a top plan view image and an oblique perspective view image.” PO Prelim. Resp. 22. Instead, according to Patent Owner, Linder discloses only correlating images “having the same view, but taken from slightly different positions.” *Id.* at 23. We disagree with Patent Owner’s argument because it attacks the references individually rather than addressing the asserted combination, as set forth in the Petition. Specifically, Petitioner relies on Linder’s correlation teaching, applied to Littleworth’s images. *See* Pet. 22–23, 35–37. Thus, it does not matter if Linder fails to teach correlating top- and oblique-view images as Patent Owner asserts, because Petitioner relies on Littleworth in combination with Linder for teaching that feature. *See id.*

c) Correlating Two Images that Are Not a Stereoscopic Pair

Independent claims 1 and 18 require correlating first and second aerial images that are not a “stereoscopic pair.” Petitioner asserts the prior art teaches this element because Littleworth teaches using control points from two non-stereoscopic images to create a three-dimensional model, while Linder details the process of correlating the images using control points. Pet. 35–37; *see id.* at 22–23. Patent Owner asserts that Petitioner’s challenge fails because “[t]he only reference Petitioner relies on to show correlation is Linder,” yet “Linder only describes correlating ***stereoscopic*** pairs of images.” PO Prelim. Resp. 28. We disagree with Patent Owner’s argument because it once again attacks the references individually rather

than addressing Petitioner's asserted combination. Specifically, as explained above, Petitioner relies on Linder's correlation teaching, applied to Littleworth's images. *See* Pet. 22–23, 35–37. Thus, it does not matter if Linder fails to teach correlating non-stereoscopic images as Patent Owner asserts, because Petitioner relies on Littleworth in combination with Linder for teaching that feature. *See id.*

d) Reason to Combine a Third Aerial Image from Nishitani

Independent claims 58 and 60 require “receiving a third aerial image” that represents a different view than the first and second aerial images. Petitioner relies on Nishitani to teach this third aerial image. Pet. 79. Patent Owner asserts that Petitioner's challenge to claims 58 and 60 fails because “all Petitioner does is identify the existence of three images in Nishitani,” but “provides no explanation of how or why a POSITA would have used Nishitani's alleged teaching.” PO Prelim. Resp. 33–34. We disagree with Patent Owner's argument.

Specifically, Petitioner explains that its proposed combination “entails the use of known solutions to improve similar systems and methods in the same way.” Pet. 32 (citing Ex. 1004 ¶ 63). As Petitioner notes, “when 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.” *Id.* (quoting *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007)). Here, we agree with Petitioner that adding Nishitani's third aerial image to its proposed combination would have been nothing more than the use of a known technique (capturing three images) to improve similar devices (Littleworth's

three-dimensional model generator using Linder's image correlation), yielding only predictable results.

e) Claim 36's Preamble

Independent claim 36's preamble requires "[a] non-transitory computer-readable storage medium" with "computer executable instructions." Patent Owner asserts that Petitioner's challenge to claim 36 fails because it merely refers back to Petitioner's earlier challenge to claim 1, which has a different preamble. PO Prelim. Resp. 34–35. Specifically, claim 1's preamble recites "[a] computing system" instead of claim 36's computer-readable storage medium. *Compare* Ex.1001, 15:57–58, *with id.* at 18:55–58. We disagree with Patent Owner's argument because Patent Owner has not argued that either claim's preamble is limiting and "[g]enerally, the preamble does not limit the claims." *Allen Engineering Corp. v. Bartell Indus.*, 299 F. 3d 1336, 1346 (Fed. Cir. 2002). In addition, Patent Owner does not explain how the two preambles are meaningfully different in light of the asserted prior art. Specifically, Littleworth's "computer model" (*see* Ex. 1005, 754), appears to teach or suggest both preambles. Thus, on the current record, we do not take issue with Petitioner relying on its claim-1 analysis for claim 36's preamble. *See* Pet. 33–34, 72.

f) Determining a Pitch

Independent claim 63 requires "determining a pitch of a plurality of sections of the roof." Petitioner relies alternatively on Littleworth and Middlebrook for this element. *See* Pet. 83–86. Patent Owner challenges Petitioner's showing. PO Prelim Resp. 36–42. In our Institution Decision in IPR2022-01009, we concluded Petitioner had shown sufficiently that Littleworth teaches pitch determination. *See* IPR2022-01009, Paper 7 at 40–

41; *see also* PO Prelim. Response 16 n.13. For consistency, we maintain our view that Littleworth teaches this element for the reasons stated in IPR2022-01009. In light of our conclusion regarding Littleworth, we decline to address whether Middlebrook also teaches determining pitch, as Petitioner asserts.

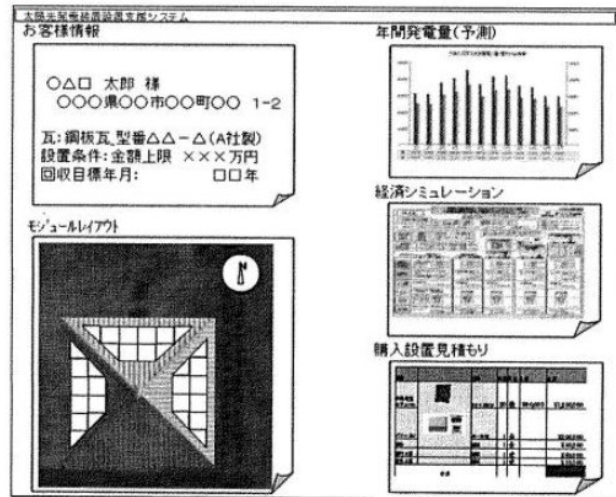
g) Receiving a Request for a Roof Estimate Report

Independent claim 63 requires “receiving a request for a roof estimate report for the roof of the building.” Petitioner asserts the prior art teaches this element because “the generated and annotated three-dimensional model of Littleworth-Linder-Middlebrook is the roof estimate report,” Pet. 34, and Nishitani teaches “transmit[ing] the generated and annotated three-dimensional model to a user device as a roof estimate report,” *id.* at 26.

Patent Owner challenges Petitioner’s showing because Nishitani “refer[s] to requesting an estimate for *a solar power generating apparatus*,” but not a roof estimate report. PO Prelim. Resp. 43. We disagree with Patent Owner’s argument first because it attacks the references individually rather than addressing Petitioner’s asserted combination. Specifically, as noted above, Petitioner relies on its Littleworth-Linder-Middlebrook combination, not Nishitani, for teaching generating a roof estimate report. *See* Pet. 34 (explaining that “in the combination, Nishitani’s ‘installation support information’ that includes the generated and annotated three-dimensional model of Littleworth-Linder-Middlebrook is the roof estimate report”). Thus, it does not matter if Nishitani’s request relates to solar panels rather than a roof. We also disagree with Patent Owner because Nishitani’s solar panels are roof based. *See, e.g.*, Ex. 1006 ¶ 42 (“The present embodiment envisions primarily a case of installing a solar power generating apparatus

... on the roof of a building.”). Thus, Nishitani’s solar-panel estimate report would include roof information, such as in the bottom-left portion of Nishitani’s Figure 4 (reproduced below).

[FIG. 4]



As a result, Nishitani’s solar panel estimate report appears to be a roof estimate report, as the claims require.

h) Whether Littleworth and Linder Are Prior Art

Patent Owner asserts Petitioner failed to demonstrate that Littleworth and Linder are prior art. PO Prelim Resp. 44–52. In our Institution Decision in IPR2022-01009, based on similar arguments and evidence, we concluded Petitioner had shown sufficiently at this stage of the proceeding that both references qualify as prior art. *See* IPR2022-01009, Paper 7 at 15–19, 20–21; *see also* PO Prelim. Response 16 n.14. For consistency, we maintain our view that Littleworth and Linder qualify as prior art for the reasons stated in IPR2022-01009.

i) Summary

Other than as outlined above, Patent Owner does not additionally challenge Petitioner’s obviousness analysis at this stage. We have reviewed

Petitioner's arguments and the underlying evidence cited in support and are persuaded that, at this stage, Petitioner sufficiently demonstrates a reasonable likelihood of succeeding in its obviousness challenges to claims 1–42 and 46–66.

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one of the challenged claims of the '436 patent is unpatentable. We therefore institute trial on all challenged claims and grounds raised in the Petition. At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term. Any final determination will be based on the record developed during trial. We place Patent Owner on express notice that any argument not asserted in a timely-filed Response to the Petition, or in another manner permitted during trial, shall be deemed waived, even if that argument was presented in the Preliminary Response.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–42 and 46–66 of the '436 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '436 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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