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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ECOFASTEN SOLAR, LLC; WENCON DEVELOPMENT, INC. D/B/A QUICKMOUNT PV CORPORATION; and ESDEC, INC.,

v.

UNIRAC, INC., Patent Owner.

IPR2021-01566 Patent 8,128,044 B2

Before BARRY L. GROSSMAN, BART A. GERSTENBLITH, and ARTHUR M. PESLAK, *Administrative Patent Judges*.

GERSTENBLITH, Administrative Patent Judge.

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

I. INTRODUCTION

A. Background

EcoFasten Solar, LLC; Wencon Development, Inc. d/b/a Quickmount PV Corporation; and Esdec, Inc. (collectively, "Petitioner") filed a Petition (Paper 1, "Pet.") requesting institution of *inter partes* review of claims 1–34 ("the Challenged Claims") of U.S. Patent No. 8,128,044 B2 (Ex. 1001, "the '044 patent"). Unirac, Inc. ("Patent Owner") filed a Preliminary Response (Paper 7, "Prelim. Resp."). With our prior authorization, Petitioner filed a Preliminary Reply (Paper 11, "Prelim. Reply") and Patent Owner filed a Preliminary Sur-reply (Paper 12, "Prelim. Sur-reply"), limited to addressing discretionary denial pursuant to 35 U.S.C. §§ 314(a) and 325(d).

An *inter partes* review may be instituted only if "the information presented in the petition . . . and any [preliminary] response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a) (2018). For the reasons below, we do not exercise our discretion to deny the Petition pursuant to §§ 314(a) and 325(d). Additionally, we determine that Petitioner has established 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 of the Challenged Claims on all grounds raised in the Petition.

B. Related Proceedings

The parties identify the following as related matters: *Unirac, Inc. v. EcoFasten Solar, LLC and Esdec, Inc.*, No. 1:21-cv-00058-MN(D. Del.), filed January 20, 2021 ("the EcoFasten case"); and *Unirac, Inc. v. Wencon Dev., Inc. d/b/a Quickmount PV Corp. and Esdec, Inc.*, No. 3:21-cv-00478-

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VC (N.D. Cal.), filed January 20, 2021 ("the Quickmount case"). Pet. 1–2;
Paper 5 (Patent Owner's Mandatory Notices), 2; *see* Prelim. Resp. 8–9.
Patent Owner also identifies the following three matters in which the '044 patent is asserted: *Unirac, Inc. v. IronRidge, Inc. and Esdec, Inc.*, No. 1:21-cv-00616-SCY-KK (D.N.M.), filed July 2, 2021 ("the IronRidge II case"); *Unirac, Inc. v. Pegasus Solar, Inc.*, No. 4-21-cv-06934-YGR, filed September 7, 2021; and *Pegasus Solar, Inc. v. Unirac, Inc.*, No. 3-21-cv-06933-EMC (N.D. Cal.), filed September 7, 2021. Paper 5, 2; *see* Prelim. Resp. 8–9. Additionally, Patent Owner identifies the following *inter partes* review proceedings between the parties: IPR2021-01379, IPR2022-00087, and IPR2022-00088. Prelim. Resp. 9.

C. Real Parties in Interest

Petitioner identifies EcoFasten Solar, LLC; Wencon Development, Inc. d/b/a Quickmount PV Corporation; and Esdec, Inc. as real parties in interest. Pet. 1. Patent Owner identifies Unirac, Inc. as the sole real party in interest. Paper 5, 2.

D. The Asserted Grounds of Unpatentability and Declaration Evidence

Petitioner challenges the patentability of claims 1-34 of the

'044 patent on the following grounds:

Claim(s) Challenged	35 U.S.C. § ¹	Reference(s)/Basis
5-10, 16, 23-26, 31	102	Hideyuki ²
1–15, 17–22, 27–30, 32–34	103	Hideyuki, Donauer ³
5-16, 23-33	103	Masami, ⁴ Ullman ⁵
5-9, 12, 16, 23-25, 31, 32	103	Masami, Nobuyuki ⁶
5, 10–15	102	Nobuyuki

Pet. 3.

¹ The Leahy-Smith America Invents Act ("AIA") includes revisions to 35 U.S.C. §§ 102 and 103 that became effective on March 16, 2013. Because the '044 patent has an effective filing date before March 16, 2013, we apply the pre-AIA version of the statutory bases for unpatentability.

² Japanese Patent Pub. No. 10-122125, published May 12, 1998 (Ex. 1009, "Hideyuki"). Petitioner provides a certified, English-language translation of Hideyuki as Exhibit 1010. Citations herein are to the English-language translation.

³ German Patent Pub. No. DE 29616947 U1, published May 7, 1997 (Ex. 1013, "Donauer"). Petitioner provides a certified, English-language translation of Donauer as Exhibit 1014. Citations herein are to the English-language translation.

⁴ Japanese Patent Pub. No. 11-013238, published Jan. 19, 1999 (Ex. 1005, "Masami"). Petitioner provides a certified, English-language translation of Masami as Exhibit 1006. Citations herein are to the English-language translation.

⁵ U.S. Patent No. 6,360,491 B1, issued Mar. 26, 2002 (Ex. 1015, "Ullman").

⁶ Japanese Patent Pub. No. 9-250219, published Sept. 22, 1997 (Ex. 1007, "Nobuyuki"). Petitioner provides a certified, English-language translation

Additionally, Petitioner supports its challenge with a Declaration of Edward C. Kern, Jr., Ph.D. (Ex. 1004).

E. The '044 Patent

The '044 patent was filed August 2, 2010, and claims priority to U.S. Patent Nos. 7,766,292; 7,260,918 ("the '918 patent"); and 7,434,362 ("the '362 patent"). Ex. 1001, codes (22), (63); see id. at 1:7–12. The '044 patent is directed to a "system for securely, safely, yet quickly mounting one or more photovoltaic devices [including, photovoltaic modules, panels, and arrays] onto a surface including, but not limited to, a roof."⁷ Ex. 1001, 1:18–21; see id. at 1:21–26. The '044 patent states that a variety of racks, frames, and hardware have been used to mount modules on a surface, which includes a footing grid. Id. at 2:5–12. The '044 patent explains that "the term 'footing grid' includes at least a network of keepers often, but not exclusively, L-shaped and formed with at least one hole in each extension of the 'L." Id. at 2:12–15. "The keepers are connectable to a surface and are formed and shaped to permit attachment of other hardware components such as rails and frames on which modules may be attached." Id. at 2:15–18. The '044 patent explains that there is a "significant need for a method and apparatus for mounting one or more photovoltaic modules safely, reliably, yet quickly on a surface; removing or reconfiguring the modules just as safely, reliably and quickly; and providing a system that is adjustable and

of Nobuyuki as Exhibit 1008. Citations herein are to the English-language translation.

⁷ The '044 patent refers to "panels, modules and arrays of photovoltaic devices []collectively, [as] 'module' or 'modules.'" Ex. 1001, 1:35–36.

expandable to allow a variety of dimensions and configurations." *Id.* at 3:18–23.

Figure 1 of the '044 patent is reproduced below:



FIG.1

Figure 1 "is a perspective view of the system for removably and adjustably mounting a device on a surface in an operative environment as an apparatus for removably and adjustably mounting one or more photovoltaic modules on a surface such as a roof as shown." Ex. 1001, 6:7–11. System 10 includes at least one rail 12 and shows device 68, such as photovoltaic module 68' that may be mounted on surface 40 using footing grid 38 that includes one or more footings 36. *Id.* at 6:56–59, 7:60–61. The '044 patent explains that "[i]n combination, the one or more footings 36 compose a network of keepers 76." *Id.* at 7:66–8:2. "Once installed, keepers 76 form a grid, as shown in FIG. 1, on which at least one rail 12 . . . is removably connectable." *Id.* at 8:9–11. Figure 1 also shows one or more clamps 34a, b that are variably positionable on at least one rail 12 and also on footing grid 38.



Figures 3 and 4 of the '044 patent are reproduced below:

Figure 3 "is a perspective view of a rail" and Figure 4 "is an end view of a rail." Ex. 1001, 6:13–16. The '044 patent explains that "rail 12 is formed with at least two tracks 14a, b. Both of at least two tracks 14a, b include a channel 16a, b . . . extending the length of at least one rail 12 substantially coincident with the longitudinal axis of at least one rail 12." *Id.* at 6:63–67. Further, "[e]ach channel 16a, b in at least two tracks 14a, b is formed with a slot 18a, b. Slot 18 extends the length of at least one rail 12 substantially coincident with the longitudinal axis of at least one rail 12." *Id.* at 6:67–7:3. Further, "[e]ach channel 16*a*, b in at least one rail 12." *Id.* at 6:67–7:3. The '044 patent teaches that "slot 18a in channel 16a of at least one rail 12 is formed with a right angle A to slot 18b in any other of at least two tracks 14a, b, as shown diagrammatically in FIG. 3." *Id.* at 7:4–7. At least one rail 12 is formed with body 20, which has proximal end 22, distal end 24, and hollow chamber 26 between the proximal and distal ends of body 20. *Id.* at 7:8–11.



Figure 7 of the '044 patent is reproduced below:

Figure 7 "shows additional end views of a rail." Ex. 1001, 6:21–22.Figure 7 shows keepers 76 attached to rails 12 and surface 40. *Id.* at Fig. 7.Figure 8 of the '044 patent is reproduced below:



FIG.8

Figure 8 "shows a front view of clamps." Ex. 1001, 6:23–24. Photovoltaic modules 68' with edge 72 are held by clamp 34a or clamp 34b (unlabeled, right clamp in the figure). *Id.* at 7:35–37, 7:63–64.

Figures 10 and 11 of the '044 patent are reproduced below:



Figure 10 is a perspective view of clamp 34a and Figure 11 is a perspective view of clamp 34b. Ex. 1001, 6:27–30. The '044 patent explains that clamp 34a includes "at least one hole 56 through plate 46 for securing" the clamp. *Id.* at 7:46–48. Clamp 34b includes "means 66 for connecting base 60 to at least one rail 12" and "means 70 for variably positioning one or more clamps 34*b* in channel 16*a* of at least one rail 12." *Id.* at 7:55–59. Clamp 34a includes two fins 54, whereas clamp 34b includes one fin 54. *Id.* at 7:44–46, Figs. 10, 11.

F. Illustrative Claim

Claims 1, 5, 17, and 23 are the independent claims challenged in this proceeding. Claim 5 is illustrative of the claimed subject matter and is reproduced below with Petitioner's bracketing added for reference:

5. [5P] An apparatus for positioning a photovoltaic module or other flat panel on a surface, comprising:

[5a] a footing grid, wherein the footing grid includes at least one keeper;

[5b] a rail with at least two tracks, wherein the rail is removably mountable on the footing grid;

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[5c] and further wherein the rail is variably positionable on the at least one keeper; and

[5d] one or more clamps variably positionable on the rail for demountably securing a photovoltaic module or other flat panel to the rail;

[5e] and further wherein the rail has a body having a proximal end, a distal end, a hollow chamber between the proximal end and distal end, opposing sides, and opposing shoulders.

Ex. 1001, 11:31–45.

G. Level of Ordinary Skill in the Art

Petitioner, supported by Dr. Kern's testimony, proposes that a person of ordinary skill in the art at the time of the invention would have had "at least a bachelor's degree in mechanical engineering, structural engineering, or similar technical field, with at least three years of relevant (metal fabrication, aluminum extrusion, architectural glass structural) product design experience." Pet. 11–12 (citing Ex. 1004 ¶ 42). Additionally, Petitioner asserts that "[a]n increase in experience could compensate for less education." *Id.* (citing Ex. 1004 ¶ 42).

Patent Owner does not express a position on the level of ordinary skill in the art in the Preliminary Response. *See generally* Prelim. Resp.

At this stage of the proceeding, we find Petitioner's proposal consistent with the level of ordinary skill in the art reflected by the '044 patent and the prior art of record, but we also find that an increase in the level of education could compensate for less experience. *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). Therefore, we adopt and apply Petitioner's unopposed position as to the

level of ordinary skill in the art, as modified slightly above, in our consideration of the issues presently before us.

II. CLAIM CONSTRUCTION

In this *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2020). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art at the time of the invention. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc). In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Phillips*, 415 F.3d at 1315–17.

Additionally, only terms that are in controversy need to be construed, and these need be construed only to the extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that "only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy"); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs.* in the context of an *inter partes* review).

Petitioner proposes constructions for two claim terms—"clamp" and "means for variably positioning the one or more clamps in a second channel of the body." Pet. 12–14. Patent Owner does not propose constructions for any claim terms in its Preliminary Response. *See generally* Prelim. Resp.

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At this preliminary stage, we need not construe expressly any claim terms because none are in dispute. *See Vivid Techs.*, 200 F.3d at 803.

III. ANALYSIS

A. 35 U.S.C. § 325(d)

Patent Owner contends that we should deny institution pursuant to 35 U.S.C. § 325(d) because "the Petition relies on the same or substantially the same references that had been previously presented to and considered by the Office." Prelim. Resp. 1; *see id.* at 11–29.

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. 35 U.S.C. § 325(d) ("the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office"); *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential, designated Mar. 24, 2020).

We also consider the non-exclusive factors set forth in *Becton*, *Dickinson and Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017) (precedential as to § III.C.5, first para, designated Aug. 2, 2019), which "provide useful insight into how to apply the framework" under § 325(d). *Advanced Bionics*, Paper 6 at 9. Those nonexclusive factors include: (a) the similarities and material differences between the asserted art and the prior art involved during examination;

(b) the cumulative nature of the asserted art and the prior art evaluated during examination;

(c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;

(d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;

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

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

Becton, Dickinson, Paper 8 at 17–18. "If, after review of factors (a), (b), and (d), it is determined that the same or substantially the same art or arguments previously were presented to the Office, then factors (c), (e), and (f) relate to whether the petitioner has demonstrated a material error by the Office." *Advanced Bionics*, Paper 6 at 10.

1. Advanced Bionics – Part One

Petitioner contends that we should not exercise discretion to deny institution pursuant to § 325(d) because (1) the Examiner did not consider Hideyuki or Donauer and (2) although Masami, Nobuyuki, and Ullman were before the Office during prosecution, "there is no indication that the [E]xaminer considered the grounds specifically identified or the expert testimony submitted herewith." Pet. 14–15 (citing Ex. 1004). Patent Owner asserts that Masami, Ullman, and Nobuyuki were previously considered by the Examiner during prosecution of the '044 patent. Prelim. Resp. 13–20. Additionally, Patent Owner argues that Hideyuki and Donauer are

"substantially the same or cumulative in nature to the prior art evaluated during [the] original prosecution of the '044 Patent." *Id.* at 21. Because it is uncontested that Hideyuki and Donauer were not presented previously to the Office, we focus our discussion on the parties' arguments directed thereto.

a. Hideyuki

Patent Owner contends that "Petitioner asserts that Hideyuki discloses the claim 5 limitation of 'one or more clamps variably positionable on the rail for demountably securing a photovoltaic module or other flat panel to the rail,' in the form of u-shaped holding brackets 59." Prelim. Resp. 24-25. Patent Owner asserts that "such u-shaped brackets were already disclosed or taught in the prior art that was considered during the original prosecution of the '044 Patent." Id. at 25. Patent Owner argues that U.S. Patent No. 5,571,338 (Ex. 2008, "Kadonome") "was cited by [the] applicant and considered by the Examiner in the '044 Patent prosecution" and "discloses a 'U-shaped member 152 [having] a U-shaped cross section' which is used to attach a photovoltaic module to a frame structure." Id. (second alteration by Patent Owner) (citing Ex. 1001, cover; Ex. 1002, 193–201). Patent Owner asserts that the Examiner "specifically found that Kadonome discloses 'one or more clamps variably positionable on the dual track rail and footing grid." Id. at 26 (quoting Ex. 2004, 481). Thus, Patent Owner argues that "on the question of whether the prior art teaches 'one or more clamps variably positionable on the rail for demountably securing a photovoltaic module or other flat panel to the rail,' Hideyuki's disclosure is cumulative to Kadonome's." Id.

In its Preliminary Reply, Petitioner argues that Patent Owner asserts Hideyuki is cumulative of Kadonome "solely because Kadonome discloses

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U-shaped clamps.... But the challenged claims recite more than just clamps." Prelim. Reply 1. Petitioner points to claim limitations [5a], [5b], [5c], and [5e], contending that "[w]ith respect to [these] limitations ... Hideyuki and Kadonome are very different." *Id.* at 1–2. Petitioner argues that

Kadonome discloses a system for mounting solar modules with an open-channel rail *lacking* two tracks and *without* a footing grid. EX2008 at Figs. 5, 13. The lengthwise members 20 are open-channel rails with a top opening 21 affixed directly to the roof rafters 41 by an anchor bolt 23. *Id.* at 4:5-14; 4:61-65; Fig. 5. Kadonome's clamps 50 affix the photovoltaic modules 30 directly to the lengthwise member 20. *Id.* at 5:15-21. There is no disclosure in Kadonome of any "footing grid" or "keepers" as required in limitations [5a] and [5c]. Further, because Kadonome's lengthwise member 20 is an *open*-channel rail, it does not disclose "a rail having . . . a hollow chamber" [5e]. EX1001 at 4:3-9; Pet. at 4-5. Hideyuki discloses each of these elements. Pet. at 19-30.

Prelim. Reply 2.

In its Preliminary Sur-reply, Patent Owner asserts that

a majority of the Petition's references are ones that were already considered, including Masami, Nobuyuki, and Ullman. POPR, 13. And a majority of the Petition's grounds are based on those same references. *Id.* As the Petition admitted, Masami had been considered in reexamination.⁸ Pet., 10-11. The Petition identified a single claim element—the "*clamp*" limitation—which "the examiner found Masami did not disclose." *Id.* Thus, to the extent Petitioner identified anything that it believed was missing from the considered prior art, it was the "*clamp*" limitation; the implication being that any

⁸ Patent Owner refers to an *inter partes* reexamination of the '362 patent. *See, e.g.*, Prelim. Resp. 5–6 (discussing the reexamination of the '362 patent).

"new" prior art would not be cumulative if it included teachings for the same.

Prelim. Sur-reply 1 (footnote added). Patent Owner contends that "Petitioner argued that Hideyuki included teachings for the claimed '*clamp*' limitation in the form of u-shaped holding brackets. . . . Patent Owner showed, however, that Hideyuki's teaching was substantially similar to that of the already-considered prior art Kadonome." *Id*. Patent Owner argues that Petitioner's contentions in its Preliminary Reply that other claim limitations are not disclosed by Kadonome "miss[] the point" because "Petitioner has already basically conceded that Masami included teachings for the other claim limitations, since it could only identify one element for which Masami lacked disclosure." *Id*. at 2 (citing Pet. 10–11). Patent Owner asserts that "for each claim limitation that Petitioner now argues to be missing from Kadonome, the disclosure of Hideyuki to which the Petition points is substantially similar to that of Masami." *Id*.

We find that Hideyuki is not the same or substantially the same prior art previously presented to the Office. First, it is undisputed that Hideyuki was not presented previously to the Office. Thus, Hideyuki is not the same prior art previously presented to the Office.

Second, we find that Hideyuki is not substantially the same as Kadonome, which was previously presented to the Office. In particular, Patent Owner does not contest Petitioner's argument that Hideyuki is not substantially the same as Kadonome regarding, for example, limitations [5a], [5b], [5c], and [5e]. *See* Prelim. Sur-reply 1–3. For the reasons explained by Petitioner, and reproduced above, we agree that Hideyuki is not substantially the same as Kadonome.

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Third, we find that Hideyuki is not substantially the same as Masami, which was previously presented to the Office.⁹ In particular, neither party contends that Hideyuki and Masami disclose substantially the same structure alleged to teach the clamps recited in limitation [5d]. For example, in Ground 1, Petitioner points to Hideyuki's holding brackets 59 as teaching the "one or more clamps" recited in limitation [5d] (*see, e.g.*, Pet. 27 (citations omitted)), whereas in Ground 3, Petitioner points to Masami's module covers 22 and 24 as teaching the "one or more clamps" recited in limitation [5d] (*see, e.g.*, Pet. 27 between these structures is reflected in Petitioner's annotated figures below:



Hideyuki's Figure 1 (left) "is an exploded perspective view of an embodiment" taught by Hideyuki. Ex. 1010, 9. Petitioner annotated

⁹ We note that Patent Owner first raised its argument that Hideyuki is substantially the same as Masami in its Preliminary Sur-reply. Prelim. Sur-reply 2–3. In the Preliminary Response, Patent Owner argued Hideyuki is substantially the same as Kadonome. Prelim. Resp. 24–27. Although we consider Patent Owner's arguments as raised in the Preliminary Sur-reply, Patent Owner's reliance on Masami as opposed to Kadonome "proceed[s] in a new direction with a new approach as compared to the positions taken in" the Preliminary Response, and, therefore, we would be justified in not considering Patent Owner's new argument. *See* Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019) at 74, *available at* https://www.uspto.gov/TrialPracticeGuideConsolidated.

Hideyuki's Figure 1 to color holding brackets 59 (green). Pet. 28. Masami's Figure 1 (right) "is an exploded perspective view showing a portion of the mount for a solar cell module." Ex. 1006, 12. Petitioner annotated Masami's Figure 1 to color module cover 22 (green), fastening bolt 38 (red), and vertical rails 4 (orange). Pet. 76. As reflected in the figures above, Masami's module covers 22 and 24 are not substantially the same structure as Hideyuki's holding brackets 59, and, therefore, we find that Hideyuki is not substantially the same as Masami.

Fourth, Petitioner's Ground 1 relies on Hideyuki as an anticipatory reference. *See* Pet. 3, 19–30. In other words, Petitioner relies on Hideyuki as disclosing each and every limitation of the claims challenged in Ground 1, including claim 5. Patent Owner does not assert that Hideyuki is substantially the same as *any one* prior art reference previously presented to and considered by the Office, e.g., Kadonome or Masami. In the context presented here, we do not agree that dividing Hideyuki's disclosure among multiple prior art references that were presented previously is sufficient to show that Hideyuki is substantially the same as the prior art previously presented.¹⁰

b. Donauer

Patent Owner contends that Donauer is substantially the same as Ullman, which was presented previously to the Office. Prelim. Resp. 21–24.

¹⁰ Taking Patent Owner's argument to a logical extension, such approach would suggest that a new reference (i.e., one not presented previously to the Office) alleged to anticipate a claim could be substantially the same as multiple previously presented prior art references that each teach one limitation of the claim.

Patent Owner asserts that Petitioner relies on Donauer for a particular shape or profile of a clamp, as recited in claim 11 of the '044 patent. *Id.* at 21 (citing Pet. 52–53). Patent Owner argues that "such shape for a clamp was already disclosed in the prior art of record and considered during original prosecution." *Id.* at 22. Patent Owner points to Figure 17 of Ullman, which shows clamp 78, and contends that it is substantially similar to the shape of Donauer's clamp (shown in Figure 2). *Id.* at 22–23. Patent Owner reproduces Petitioner's annotated versions of Donauer's clamp and Ullman's clamp, further annotated by Patent Owner, as shown below:



"[A] sectional view through" Donauer's clamping profile no. 02 (12) is shown in the figure on the left. Ex. 1014, 4:10.¹¹ Petitioner annotated Donauer's clamping profile no. 02 (12) to color the fastener (green) and include arrows identifying fins, an upper face, opposing sidewalls, and lower inner edges. Pet. 52. Ullman's Figure 17 shows "a secured bi-module clamp in relationship to the adjacent sides of two solar modules." Ex. 1015, 4:17–49. Petitioner first annotated Ullman's Figure 17 to include arrows

¹¹ Citations include the page numbers of the Bates-stamp on each page of the exhibit, in the bottom, right-hand corner of each page.

identifying a lower inner edge, monolithic opposing side walls, an upper face, and fins extending from the upper face, and Patent Owner then annotated Petitioner's figure to color the clamp (green). *See* Pet. 90; Prelim. Resp. 23.

In its Preliminary Reply, Petitioner contends that "[u]nlike Ullman, Donauer discloses a clamp with a hole in its base for receiving screws 8 that connect to square nuts 7 to be received in the tracks in Donauer's rail." Prelim. Reply 3 (citing Pet. 54–55; Ex. 1004 ¶¶ 116–119; Ex. 1013, 4:27– 32). Petitioner asserts that "Dr. Ker[n] opined that because of Donauer's distinct design, [a person of ordinary skill in the art] would have been motivated to combine the specific Donauer clamping profile no. 02 with Hideyuki's dual track rail system." *Id.* (citing Pet. 54–55; Ex. 1004 ¶ 118). Petitioner argues that "[c]omparing Ullman Fig. 13 with the Donauer clamps shows they have different profiles and different mechanisms for attaching to the rail." *Id.* at 4 (citing Ex. 1015, Figs. 12, 3; Pet. 78–80). Thus, Petitioner asserts that "Donauer is not cumulative of Ullman, particularly when combined with Hideyuki and in view of Dr. Ker[n]'s opinions." *Id.*

In its Preliminary Sur-reply, Patent Owner contends that Petitioner's argument does not distinguish Ullman's clamp from Donauer's clamp because "Ullman's clamp has the same structure and works the same way." Prelim. Sur-reply 3. In particular, Patent Owner asserts that "Ullman's clamp has a hole in its base for receiving a bolt that connects to an insert 74 to be received in a track." *Id.* at 3–4 (citing Ex. 1015, 6:14–31, Figs. 13, 17, 18). Patent Owner argues that these similarities are shown in its comparison of Donauer's Figure 4 and Ullman's Figure 18 below:

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Donauer, FIG. 4 (excerpted)

Ullman, FIG. 18

Donauer's Figure 4 (left) "is a sectional view through a panel that is mounted . . . with the fastening system longitudinal." Ex. 1014, 4:15–16. Ullman's Figure 18 (right) is a view of Figure 17, which shows "a secured bi-module clamp in relationship to the adjacent sides of two solar modules." Ex. 1015, 4:17–49. Patent Owner annotated the figures with arrows identifying the following in each figure: clamp, hole, bolt/screw, insert, and track. Prelim. Sur-reply 4.

Regarding Donauer's clamping profile no. 2, we find Patent Owner's arguments persuasive and Petitioner does not explain what, if any, alleged difference between Ullman's and Donauer's clamps impacts either Dr. Kern's testimony or Petitioner's reasoning as to why one of ordinary skill in the art would have been motivated to combine Donauer's clamp with Hideyuki's system. In particular, the shapes of the clamps appear very similar and each has a hole in its base for receiving a bolt that enables connection to a track. Thus, Petitioner's identification of alleged structural differences does not appear to be supported on the record. Additionally, we do not discern and Petitioner has not identified what, if anything, Dr. Kern relies on regarding Donauer's clamping profile no. 2 that would not be applicable to Ullman's clamp. Dr. Kern testifies, *inter alia*, that (a) Donauer

discloses clamping profile no. 02 (12) that has a hole through its base to receive screws 8 to connect to the dual track rail (horizontal support profile no. 01 (11)) and (b) one of ordinary skill in the art would have been motivated to substitute Hideyuki's holding bracket 59 with Donauer's clamping profile no. 02 (12) in Hideyuki's dual track rail system "to minimize any visually undesirable or unappealing protrusion of the bolt and nut in Hideyuki, which is a well-known solution and a predictable outcome by having a downward U-shaped clamp like Donauer's clamping profile no. 02 (12)." Ex. 1004 ¶¶ 117–118; *see also id.* ¶¶ 115–119. From our review, we do not discern what, if anything, from Dr. Kern's testimony would not also apply to Ullman's clamp. Thus, we find that Ullman's clamp 78 is substantially the same as Donauer's clamping profile no. 2.

Although the parties do not address other teachings of Donauer relied on by Petitioner, we note that Donauer's clamping profile no. 3, which Petitioner relies on to challenge, *inter alia*, claim 13 in Ground 2 (*see* Pet. 57–59), appears substantially the same as Ullman's clamp 76, which Petitioner relies on to challenge claim 13 in Ground 3 (*see id.* at 94–96), as shown below.¹²

¹² It does not appear that Petitioner relies on other structure from Donauer in the grounds set forth in the Petition. *See generally* Pet. 45–64 (discussing Ground 2, the only ground in which Donauer is asserted).



"[A] sectional view through" Donauer's clamping profile no. 03 (13) is shown in the figure on the left. Ex. 1014, 4:10. Petitioner annotated Donauer's profile no. 03 (13) to color the fastener (green) and include arrows identifying an ascending member, base, leg, and descending (member). Pet. 57. Ullman's Figure 15 (right) "is a side view showing a secured end clamp in relationship to the side of a solar panel." Ex. 1015, 4:44–45. Petitioner annotated Ullman's Figure 15 to include arrows identifying an ascending member, base, leg, and descending member. Pet. 95. In light of the comparison above, we find that Ullman's clamp 76 is substantially the same as Donauer's clamping profile no. 3.

Accordingly, on the present record before us, we find that Donauer's clamps are substantially the same as Ullman's clamps for the reasons set forth above.

2. Conclusion as to 35 U.S.C. § 325(d)

On the facts presented here and for the reasons explained above, we do not find the first part of the *Advanced Bionics* framework satisfied. Although three (Masami, Ullman, and Nobuyuki) of the five prior art references were previously presented to the Office and we find the relied-on teachings of Donauer to be substantially the same as Ullman, we find that

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Hideyuki is not substantially the same as either Kadonome or Masami. Therefore, we need not consider the second part of the *Advanced Bionics* framework.

Additionally, we find Petitioner's reliance on Hideyuki particularly noteworthy as it is relied on as an anticipatory reference in Ground 1 and is relied on for the majority of claim limitations recited by the claims challenged in Ground 2. Thus, Petitioner places substantial reliance on Hideyuki in the grounds presented in the Petition. On the facts presented here, we are not persuaded that § 325(d) is sufficiently implicated as to warrant exercise of our discretion to deny institution.

B. 35 U.S.C. § 314(a)

Under 35 U.S.C. § 314(a), the Director has discretion to deny institution. In determining whether to exercise that discretion on behalf of the Director, we are guided by the Board's precedential decision in *NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 (PTAB Sept. 12, 2018) (precedential, designated May 7, 2019).

In *NHK*, the Board found that the "advanced state of the district court proceeding" was a "factor that weighs in favor of denying" the petition under § 314(a). *NHK*, Paper 8 at 20. The Board determined that "[i]nstitution of an *inter partes* review under these circumstances would not be consistent with 'an objective of the AIA . . . to provide an effective and efficient alternative to district court litigation." *Id.* (citing *Gen. Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 16–17 (PTAB Sept. 6, 2017) (precedential as to § II.B.4.i, designated Oct. 18, 2017)).

"[T]he Board's cases addressing earlier trial dates as a basis for denial under *NHK* have sought to balance considerations such as system efficiency, fairness, and patent quality." *Apple Inc. v. Fintiv Inc.*, IPR2020-00019, Paper 11 at 5 (PTAB Mar. 20, 2020) (precedential, designated May 5, 2020) (collecting cases) (*"Fintiv"*). *Fintiv* sets forth six non-exclusive factors for determining "whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding." *Id.* at 6. These factors consider:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;

2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;

3. investment in the parallel proceeding by the court and the parties;

4. overlap between issues raised in the petition and in the parallel proceeding;

5. whether the petitioner and the defendant in the parallel proceeding are the same party; and

6. other circumstances that impact the Board's exercise of discretion, including the merits.

Id.

Patent Owner argues that we should exercise discretion and deny institution pursuant to § 314(a) "to avoid inefficient duplication of effort with the district courts, in particular, in the parallel Quickmount and EcoFasten Cases." Prelim. Resp. 29; *see id.* at 29–40. Petitioner does not address discretionary denial pursuant to § 314(a) in the Petition, but does

note in its Preliminary Reply that it filed a *Sotera*¹³ stipulation for the '044 patent in the EcoFasten and Quickmount cases. Prelim. Reply 4 (citing Ex. 1017 (Email from B. Biggs dated Mar. 8, 2022, with stipulations attached). We discuss the parties' arguments in the context of considering the above factors. In evaluating the factors, we take a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review. *Fintiv*, Paper 11 at 8 (citing *NHK*, Paper 8 at 6, 9).

1. Whether the Court Granted a Stay or Evidence Exists That One May Be Granted If a Proceeding Is Instituted

Patent Owner contends that the defendants in the Quickmount case filed a motion to stay, which the district court granted in part. Prelim. Resp. 31 (citing Ex. 2009 (Order granting in part the motion to stay)). The district court's order states that "[t]he parties are required to complete fact discovery," but "expert discovery, summary judgment, claim construction, and trial will be rescheduled after a decision from the PTAB on whether to institute an inter partes review." Ex. 2009, 1. Additionally, Patent Owner asserts that a motion to stay has not been filed in either the EcoFasten case or the IronRidge II case. Prelim. Resp. 31–32.

Petitioner does not express a position regarding this *Fintiv* factor. *See generally* Pet.; Prelim. Reply.

Although the Quickmount case has a partial stay, the EcoFasten and IronRidge II cases do not. We will not speculate as to the likelihood that a stay will be granted if requested. Accordingly, we find that this factor does not weigh in favor of or against exercising our discretion to deny institution.

¹³ Sotera Wireless, Inc. v. Masimo Corp., IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A, designated Dec. 17, 2020).

See Apple Inc. v. Fintiv Inc., IPR2020-00019, Paper 15 at 12 (PTAB May 13, 2020) (informative, designated July 13, 2020).

2. Proximity of the Court's Trial Date to the Board's Projected Statutory Deadline for a Final Written Decision

As noted above, the Quickmount case is currently stayed in part without a firm trial date set. *See* Ex. 2009, 1 (stating that "trial will be rescheduled after a decision from the PTAB"). As noted by Patent Owner, however, if institution is denied, the court's order states that "the parties should expect to go to trial in the third or fourth quarter of 2022." Ex. 2009, 1; Prelim. Resp. 32. Trial is currently scheduled to begin on December 5, 2022, in the EcoFasten case. Prelim. Resp. 32 (citing Ex. 2012 (Stipulation and Order to Extend Time), 3). On March 25, 2022, the parties in the IronRidge II case filed an Amended Joint Status Report and Provisional Discovery Plan (Ex. 3001), which identifies August 7, 2023, as the anticipated trial date. Ex. 3001, 10.

The projected statutory deadline for a final written decision (March/April 2023) is three to four months after the trial date currently scheduled in the EcoFasten case and four to five months before the trial date currently proposed in the IronRidge II case. Thus, because of the earlier trial date in the EcoFasten case, this factor weighs in favor of exercising our discretion to deny institution.¹⁴

¹⁴ We recognize that trial dates may be subject to change. Therefore, we give this factor less weight in considering whether efficiency and integrity of the system are best served by denying or instituting review.

3. Investment in the Parallel Proceeding by the Court and the Parties

The parties in the Quickmount case will complete fact discovery, but all other pre-trial work has been stayed. Ex. 2009, 1. At present, the parties in the EcoFasten case have completed fact discovery and claim construction briefing, and have begun expert discovery with the submission of opening expert reports. *See id.* at 2. In the IronRidge II case, the parties exchanged initial disclosures recently, on February 15, 2022, and an initial case management conference currently is scheduled for April 5, 2022. Ex. 3001, 10. Additionally, the record does not reflect that any of the three district courts has issued any substantive orders with respect to the cases and Patent Owner does not allege to the contrary.

Patent Owner contends that Petitioner did not act expeditiously in filing the Petition because Petitioner waited eight months after the complaints were filed in the Quickmount and EcoFasten cases (on January 20, 2021) to file the Petition (September 30, 2021). *Id.* at 34. What Patent Owner's argument omits, however, is that the scheduling order in the EcoFasten case did not require production of initial infringement contentions ("an initial claim chart relating each known accused product to the asserted claims each such product allegedly infringes") until August 4, 2021. Ex. 2010, 3. Thus, filing the Petition on September 30, 2021, does not evidence delay by Petitioner.

We find that the parties have invested in each of the three district court cases. As the newest of the three district court cases, the investment in the IronRidge II case is relatively minimal. Initial disclosures were due February 15, 2022, and the parties are currently in the fact discovery phase. Ex. 3001, 10. The investment by the parties in the EcoFasten case is more substantial than the Quickmount case because of the stay granted in the Quickmount case. Nonetheless, the investment by each district court appears to be relatively minimal as no substantive orders have been issued in either case. On the present record before us, we find that this factor does not weigh in favor of or against exercising our discretion to deny institution.

4. Overlap Between Issues Raised in the Petition and in the Parallel Proceeding

Patent Owner contends that "there is complete overlap of prior art" between the Petition and the Quickmount and EcoFasten cases.¹⁵ Prelim. Resp. 35. Patent Owner asserts that, at the time Patent Owner filed its Preliminary Response, Petitioner had "not entered any stipulation . . . to mitigate the clear inefficiencies caused by such overlap." *Id.* at 37.

In its Preliminary Reply, Petitioner indicates that it filed a "*Sotera* stipulation for the '044 patent" in each of the Quickmount and EcoFasten cases and also filed the stipulations in this proceeding as Exhibit 1017. Prelim. Reply 4 (citing Ex. 1017).

In its Preliminary Sur-reply, Patent Owner contends that Petitioner's stipulation was filed only in the Quickmount and EcoFasten cases and not also in the IronRidge II case. Prelim. Sur-reply 4. Patent Owner asserts that "[t]here remains complete overlap between the Board and the district court for the [IronRidge II] case." *Id*.

Petitioner's stipulations mitigate any concerns of further duplicative efforts between the Quickmount and EcoFasten cases and this proceeding, as

¹⁵ Patent Owner notes that infringement contentions had not yet been served in the IronRidge II case. Prelim. Resp. 36 n.5.

well as potentially conflicting decisions. See Sotera, Paper 12 at 19.

Importantly, Petitioner broadly stipulates that

if the Patent Trial and Appeal Board institutes review in [this proceeding], then Defendants will not pursue in this case the specific grounds identified above in connection with the issued '044 Patent claims, or on any other ground that was raised or could have been reasonably raised in an *inter partes* review (i.e., any ground that could be raised under 35 U.S.C. § 102 or 35 U.S.C. § 311(b)).

Ex. 1017, 3 (Quickmount case); *see also id.* at 7 (stating the same in the EcoFasten case). This is the same type of broad stipulation that the Board found "ensures that an *inter partes* review is a 'true alternative' to [a] district court proceeding." *Sotera*, Paper 12 at 19. And, we agree that Petitioner's stipulations in the Quickmount and EcoFasten cases ensure the same regarding the '044 patent.

Further, it is not clear how Patent Owner can assert that there is a "complete overlap" between this proceeding and IronRidge II when the defendants in that case have not yet been required to file an answer or any potential counterclaims. *See* Ex. 3001, 15 (noting that, because the defendants filed a motion to dismiss, they have not been required to file an answer or potential counterclaims). Thus, on the present record, we do not find that there is complete overlap between this proceeding and IronRidge II.

On the present record before us, we find that this factor weighs against exercising our discretion to deny institution.

5. Whether the Petitioner and the Defendant in the Parallel Proceeding Are the Same Party

Petitioner and Patent Owner are the defendant and plaintiff, respectively, in the EcoFasten and Quickmount cases. *See* Prelim. Resp. 38.

Patent Owner does not address the IronRidge II case, although Patent Owner and Esdec, Inc. are parties there as well. As noted above, the Quickmount case currently is stayed in part without a firm trial date and the EcoFasten case currently is scheduled for trial three to four months prior to the projected statutory deadline for a final written decision in this proceeding. Further, the proposed trial date in the IronRidge II case is not until four to five months after the projected statutory deadline for a final written decision in this proceeding.

On the present record before us, we find that this factor weighs in favor of exercising our discretion to deny institution.

6. Other Circumstances that Impact the Board's Exercise of Discretion, Including the Merits

Patent Owner contends that other circumstances support its argument to exercise discretion to deny institution. In particular, Patent Owner points to the extensive prosecution of the related '362 and '918 patents and notes that the reexamination of the '362 patent overlapped in time with the examination of the '044 patent application. Prelim. Resp. 38–39. Additionally, Patent Owner argues that "concerns of efficiency and duplication of effort are particularly acute here" because of the three district court cases in which the '044 patent is asserted. *Id.* at 39–40. Further, Patent Owner asserts that the related '362 patent is also asserted in each of the three district court cases and if trials proceed on the '362 patent, they may also include the '044 patent. *Id.*

Although we recognize that the prosecution history of the related '362 patent is extensive, that fact alone does not persuade or compel exercising our discretion to deny institution. In particular, we are focused

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primarily on the '044 patent and, on the facts presented, Petitioner has addressed many, if not all, of Patent Owner's efficiency concerns by filing *Sotera* stipulations in the EcoFasten and Quickmount cases. And, in the IronRidge II proceeding, the parties appear to be focused on the defendants' motion to dismiss and have only just begun fact discovery.

Additionally, from our review of the Petition and evidence in support thereof, as discussed further herein, the merits of the Petition appear particularly strong and are not addressed in the Preliminary Response.¹⁶ Further, the number of district court cases, on the facts presented here, appear to weigh in favor of not exercising our discretion to deny institution because our adjudication of the validity of the '044 patent may alleviate the burden on potentially three district courts of having to do so. Although we recognize that the EcoFasten and IronRidgeII cases may occur in parallel, we find that this factor weighs against exercising our discretion to deny institution.

7. Weighing the Factors

After weighing all of the factors and taking a holistic view of the relevant circumstances of this proceeding, we determine that, on balance, the *Fintiv* factors favor not exercising discretion to deny institution under 35 U.S.C. \S 314(a).

¹⁶ Although a patent owner is not required to file a preliminary response, when a preliminary response is filed, we consider the arguments raised therein. *See* 35 U.S.C. \S 314(a).

C. Legal Standards 1. Anticipation

A prior art reference anticipates a patent claim if it "discloses each and every element of the claimed invention arranged or combined in the same way as in the claim." *Monsanto Tech. LLC v. E.I. DuPont de Nemours* & *Co.*, 878 F.3d 1336, 1342–43 (Fed. Cir. 2018) (internal quotation and citation omitted).

2. Obviousness

The U.S. Supreme Court set forth the framework for applying the statutory language of 35 U.S.C. § 103 in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966):

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

The Supreme Court explained in KSR International Co. v. Teleflex Inc. that

[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis should be made explicit.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere

conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." (alteration in original))).

"Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact." *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted). "[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan 'would have had a reasonable expectation of success from doing so." *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

D. Ground 1: Anticipation by Hideyuki

Petitioner contends that Hideyuki discloses each and every element of claims 5–10, 16, 23–26, and 31 of the '044 patent. Pet. 18–45.

1. Hideyuki

Hideyuki is directed to a mounting platform for solar energy utilizing equipment. Ex. 1010, code (54). Hideyuki explains that the problem to which its disclosure is addressed is "[t]o simplify the marking process when installing a platform on a structure such as the roof of a house and mounting solar energy utilizing equipment." *Id.* at code (57) (Problem). And, Hideyuki discloses that it solves the problem because "[d]uring the marking process, only two marked lines have to be drawn where the leg securing frames 33 are to be positioned." *Id.*

Figure 1 of Hideyuki is reproduced below:



Hideyuki's Figure 1 "is an exploded perspective view of" an embodiment of Hideyuki's mounting platform. Ex. 1010, 9 (Brief Description of the Drawings). Hideyuki explains that "platform 31 has two leg securing frames 33 parallel to the roof purlins,¹⁷ and a plurality of vertical frames 34 (four in [Figure 1]) mounted on the frames in the orthogonal direction." *Id.* ¶ 16 (footnote added). Hideyuki teaches that leg securing frames 33 and vertical frames 34 have "a square cross-sectional profile." *Id.*

¹⁷ A purlin is a longitudinal, horizontal, structural member in a roof.

Figure 2 of Hideyuki is reproduced below:



Hideyuki's Figure 2 "is a simplified cross-sectional view of a portion of the embodiment from line II-II" in Figure 1. Ex. 1010, 9 (Brief Description of the Drawings). Hideyuki explains that "leg securing frames 33 have an upper surface dovetail groove 37 and a side surface dovetail groove 38 formed lengthwise, respectively." *Id.* ¶ 17.

Figure 3 of Hideyuki is reproduced below:



Hideyuki's Figure 3 "is a simplified cross-sectional view of a portion of the embodiment from line III-III" in Figure 1." Ex. 1010, 9 (Brief Description

of the Drawings). Hideyuki explains that "vertical frames 34 have an upper surface dovetail groove 42 and a side surface dovetail groove 43 formed lengthwise, respectively, in an upper surface 39 that faces upward when mounted on the leg securing frames 34 and in both side surfaces 36." *Id.* ¶ 17.

Hideyuki teaches that frame connecting brackets 53, which are used to connect vertical frames 34 on leg securing frames 33, have an angular shape, with a horizontal piece at one end fixed by second bolt 54 whose head has been slidably fitted into upper surface dovetail groove 37 in the upper surface of leg securing frame 33 and nut 55. Ex. $1010 \ 22$. And, Hideyuki explains that the vertical piece at the other end of connecting brackets 53 is fixed by third bolt 56 whose head has been slidably fitted into side surface dovetail groove 43 in vertical frame 34 and nut 57. *Id*.

Additionally, Hideyuki states that "photovoltaic power generating modules 32 are arranged in two stages in the vertical direction between two adjacent vertical frames 34," as shown in Figure 1, above. Ex. 1010 ¶ 23. "Each module 32 is provided with engaging grooves 58 that open upward on both side edges," as shown in Figure 3, above. *Id.* According to Hideyuki, "[a]djacent modules 32 are arranged on both sides of an upper surface dovetail groove 42 in a vertical frame 34, and two downward-facing U-shaped holding brackets 59 are fitted into both engaging grooves 58 in each stage." *Id.* "A fourth bolt 61 whose head has been slidably fitted into an upper surface dovetail groove 42 is inserted into a holding bracket 59 and secured by a nut 62." *Id.*

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As shown in Figures 1 and 2, closing plates 63 are pressed against both end faces of vertical frame 34 and secured in threaded groove 44 by screws 64. Ex. 1010¶24.

[5P], which includes the preamble of claim 5, recites "[a]n apparatus for positioning a photovoltaic module or other flat panel on a surface, comprising." Ex. 1001, 11:31–32. Petitioner contends that "[i]f the preamble is deemed a limiting element of the claim, then Hideyuki discloses this limitation" by disclosing "solar energy utilization equipment utilizing equipment such as photovoltaic equipment on a structure such as the roof of a house," and "solar energy utilizing equipment using this platform." Pet. 19 (citing Ex. 1010 ¶ 1, Figs. 1–4; Ex. 1004 ¶ 56).

At this time, neither party contends the preamble is limiting. We need not determine whether the preamble is limiting because, to the extent that it is, Petitioner sets forth sufficiently how the preamble is disclosed by Hideyuki.

ii. Limitation [5a]

Limitation [5a] recites "a footing grid, wherein the footing grid includes at least one keeper." Ex. 1001, 11:33–34. Petitioner contends that Hideyuki satisfies limitation [5a] by disclosing "a network of leg securing frames 33, support brackets 45, and frame securing brackets 49, wherein the

network includes at least one frame connecting bracket 53." Pet. 20 (citing Ex. 1010, Solution¹⁸; Ex. 1009, Figs. 1, 3¹⁹; Ex. 1004 ¶ 58).

Petitioner asserts the following:

Hideyuki discloses that leg securing frames 33, support brackets 45, frame securing brackets 49, and at least one frame connecting bracket 53 form a footing grid. Hideyuki discloses that frame securing brackets 49 mount leg securing frames 33 to the support brackets 45. EX1010, [0016]-[0022]; [0030-0031]. Frame connecting brackets 53 for connecting vertical frames 34 to leg securing frames 33 adjustably slide on upper surface dovetail groove 37 of the leg securing frames 33 prior to being fastened by second bolt 54 and nut 55. *Id.*, [0016]-[0022]; [0030-0031]; EX1004, ¶59.

Hideyuki discloses a plurality of keepers on which to mount the rail, namely, a plurality of L-shaped frame connecting brackets 53 forming a network of keepers having at least one hole in each extension of the "L" on which to mount the rail. EX1009, Figs. 1, 3; EX1004, ¶60.

Thus, this interconnection forms a footing grid including at least one keeper on which photovoltaic modules are mounted. EX1004, ¶61.

Pet. 20–21.

Reproduced below are Petitioner's annotated versions of Hideyuki's Figures 1 and 3, with color (red) identifying the interconnecting structures discussed above:

¹⁸ See Ex. 1010, code (57) ("Solution").

¹⁹ Petitioner cites to the Japanese-language version of Hideyuki (Ex. 1009) when citing to the figures even though the figures are also included in the English-language translation. *See, e.g.*, Ex. 1010, page 11 (Figure 1).

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Hideyuki's Figure 1 (left) "is an exploded perspective view of an embodiment" showing Hideyuki's mounting platform, including Petitioner's color (red) annotations identifying the interconnecting structures discussed above. Ex. 1010, 9 (Figure 1 description); Pet. 21. Hideyuki's Figure 3 (right) "is a simplified cross-sectional view of a portion of the embodiment from line III-III in Fig. 1," including Petitioner's color (red) annotations identifying the interconnecting structures discussed above. Ex. 1010, 9 (Figure 3 description); Pet. 22.

iii. Limitation [5b]

Limitation [5b] recites "a rail with at least two tracks, wherein the rail is removably mountable on the footing grid." Ex. 1001, 11:35–36. Petitioner contends that Hideyuki satisfies limitation [5b] by disclosing "vertical frames 34 removably configured together with third bolt 56 combined on the network of leg securing frames 33, support brackets 45, and frame securing brackets 49, wherein the network includes at least one frame connecting bracket 53." Pet. 22 (citing Ex. 1010¶ 32; Ex. 1004¶ 62). Petitioner asserts that "Hideyuki discloses vertical frames 34 with dual tracks" and "Hideyuki discloses vertical frames 34 with upper surface dovetail groove 42 and side surface dovetail grooves 43 on each side that

allows for removable mounting on the footing grid as illustrated in Fig. 3." *Id.* at 22–23 (citing Ex. 1010 ¶¶ 17–18; Ex. 1004 ¶ 63).

Reproduced below are Petitioner's annotated versions of Hideyuki's Figures 1 and 3, with color (orange) identifying the above-mentioned structures:



Petitioner annotated Hideyuki's Figure 1 by, *inter alia*, adding color (orange) to vertical frames 34 and adding a close-up view of one end of vertical frame 34 where Petitioner identifies three tracks. Pet. 23.



Petitioner annotated Hideyuki's Figure 3 by adding , *inter alia*, color (orange) to vertical frames 34 and arrows indicating tracks in dovetail grooves 42, 43. Pet. 24.

iv. Limitation [5c]

Limitation [5c] recites "and further wherein the rail is variably positionable on the at least one keeper." Ex. 1001, 11:37–38. Petitioner contends that Hideyuki satisfies limitation [5c] by disclosing "the network of leg securing frames 33, support brackets 45, and frame securing brackets 49, wherein the network includes at least one frame connecting bracket 53 comprising means for variably positioning the at least one dual track rail on the at least one L-shaped frame connecting bracket 53." Pet. 24 (citing Ex. 1004 \P 64).

Reproduced below is Petitioner's annotated version of Hideyuki's Figure 1:



Petitioner annotated Hideyuki's Figure 1 with green arrows to show the "various means for variably positioning the dual track rail (vertical frames 34) on a keeper (frame connecting bracket 53)." Pet. 24–25. Petitioner contends that "Hideyuki discloses that the footing grid formed by leg securing frames 33, support brackets 45, frame securing brackets 49, and frame connecting bracket 53 collectively provide various means for variably

positioning the dual track rail (vertical frames 34) on a keeper (frame connecting bracket 53)." *Id.* (citing Ex. $1004 \ \figmed 65$).

Reproduced below is Petitioner's annotated version of Hideyuki's Figure 3:



Petitioner annotated Hideyuki's Figure 3, *inter alia*, to color (red) leg supporting frame 33 and frame connecting brackets 53, and to add reference to the green arrow (also shown above in Petitioner's annotated version of Hideyuki's Figure 1) pointing in and out of the page. Pet. 26.

Petitioner asserts that "[t]he keeper (frame connecting brackets 53) includes a hole on its vertical member that allows for the insertion of hardware (56, 57) that is inserted into and slides along the side surface dovetail grooves 43 of the dual track rail (with vertical frames 34)." Pet. 26 (citing Ex. 1010 \P 22). Petitioner contends that "[t]his configuration permits the dual track rail disclosed in Hideyuki to slidably engage with the keeper (frame connecting brackets 53) such that the dual track rail can be slid as

shown in the annotated Figures 1 and 3, above, and thus variably positioned." *Id.* (citing Ex. 1004 \P 66).

v. Limitation [5d]

Limitation [5d] recites "one or more clamps variably positionable on the rail for demountably securing a photovoltaic module or other flat panel to the rail." Ex. 1001, 11:39–41. Petitioner contends that Hideyuki satisfies limitation [5d] by disclosing

one or more holding brackets 59 variably positionable on the rail (vertical frames 34) and footing grid (a network of leg securing frames 33, support brackets 45, and frame securing brackets 49, and frame connecting brackets 53) for demountably securing the module (photovoltaic power generating modules 32) to the footing grid.

Pet. 27 (citing Ex. 1004 ¶ 67).

Reproduced below are Petitioner's annotated versions of Hideyuki's Figures 1 and 3:



Petitioner annotated Hideyuki's Figure 1 to color (green) holding brackets 59 and to place a red box around one of the numerals 59. Pet. 28.



Petitioner annotated Hideyuki's Figure 3 by placing red boxes around numerals 59 (left) and by adding a close-up view of holding bracket 59 (right) colored (green). Pet. 28.

Petitioner contends that, as shown above, "a fitted head of fourth bolt 61 of one or more holding brackets 59 may be slidably positioned on the upper surface dovetail groove 42 formed on vertical frames 34 and fixed by nut 62." Pet. 27 (citing Ex. 1010 ¶¶ 23, 26, 33). Additionally, Petitioner asserts that "Hideyuki further discloses that photovoltaic power generating modules 32 is arranged between two adjacent vertical frames 34 in coordination with fourth bolts 61 and nuts 62 of corresponding holding brackets 59." *Id.* (citing Ex. 1010 ¶¶ 23, 26, 33; Ex. 1004 ¶ 68).

vi. Limitation [5e]

Limitation [5e] recites "and further wherein the rail has a body having a proximal end, a distal end, a hollow chamber between the proximal end and distal end, opposing sides, and opposing shoulders." Ex. 1001, 11:42– 45. Petitioner contends that Hideyuki discloses limitation [5e] because "the inside of Hideyuki's vertical frames 34 [is] hollowed out[,] creating a hollow chamber between the two ends as shown [in] Fig. 1 below." Pet. 29.

Petitioner asserts that one of ordinary skill in the art "would have understood that vertical frames 34 are hollowed out given Hideyuki's disclosure regarding closing plates 63 to close the hollow chamber inside vertical frames 34." *Id.* (citing Ex. $1010 \ 23$; Ex. $1004 \ 69$).

Petitioner's annotated version of Hideyuki's Figure 1 is reproduced below:



Petitioner annotated Hideyuki's Figure 1 to color (orange) the portion of vertical frames 34 that Petitioner contends is a hollow chamber and includes red arrows identifying the hollow chamber, distal ends, and proximal ends of vertical frames 34. Pet. 29.

Additionally, Petitioner asserts that "vertical frames 34 include opposing shoulders and opposing sides," as shown in Petitioner's annotated version of Hideyuki's Figure 3 reproduced below (Pet. 29):



Petitioner annotated Hideyuki's Figure 3 to color (orange) the portion of vertical frame 34 that Petitioner contends is a hollow chamber, to color (green) vertical frame 34, and to identify opposing sides and opposing shoulders with red arrows. Pet. 30.

b. Preliminary Determination as to Claim 5

As set forth above, Petitioner demonstrates in detail how Hideyuki discloses each and every element of claim 5 with citations to supporting evidence. Patent Owner's Preliminary Response does not address the merits of the Petition, focusing instead on discretionary bases for denial of institution. *See generally* Prelim. Resp. We find Petitioner's arguments persuasive and supported on the record for the reasons explained by Petitioner. Accordingly, based on the present record, we find that Petitioner has established a reasonable likelihood that it would prevail in showing that Hideyuki anticipates claim 5.

c. Claims 6–10, 16, 23–26, and 31

Petitioner sets forth detailed argument, with supporting evidence including the testimony of Dr. Kern, demonstrating how Hideyuki discloses each and every element of claims 6–10, 16, 23–26, and 31. Pet. 30–45. As noted above, Patent Owner's Preliminary Response does not address the merits of the Petition. *See generally* Prelim. Resp.

We have reviewed the Petition and evidence cited in support of the arguments raised therein. We find Petitioner's arguments persuasive and supported on the record for the reasons explained by Petitioner. Accordingly, based on the present record, we find that Petitioner has established a reasonable likelihood that it would prevail in showing that Hideyuki anticipates claims 6–10, 16, 23–26, and 31.

E. Grounds 2–5

Petitioner raises four additional grounds as follows:

Ground 2: The combination of Hideyuki and Donauer would have rendered the subject matter of claims 1-15, 17-22, 27-30, and 32-34 obvious to one of ordinary skill in the art at the time of the invention. Pet. 45-64.

Ground 3: The combination of Masami and Ullman would have rendered the subject matter of claims 5-16 and 23-33 obvious to one of ordinary skill in the art at the time of the invention. *Id.* at 64–109.

Ground 4: The combination of Masami and Nobuyuki would have rendered the subject matter of claims 5–9, 12, 16, 23–25, 31, and 32 obvious to one of ordinary skill in the art at the time of the invention. *Id.* at 109–118.

Ground 5: Nobuyuki anticipates claims 5 and 10–15. *Id.* at 118–132.

Because we have determined above that the information presented in the Petition and Preliminary Response shows that there is a reasonable likelihood that Petitioner will prevail with respect to at least one of the claims challenged based on Hideyuki, we need not address, in this Decision, Petitioner's additional challenges presented in Grounds 2–5. *See* 35 U.S.C. § 314(a).

IV. CONCLUSION

For the foregoing reasons, Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that at least one claim of the '044 patent is unpatentable. Our analysis is based on the preliminary record developed thus far and may change after the record is developed fully, during trial.

V. ORDER

Accordingly, it is:

ORDERED that, pursuant to 35 U.S.C. \S 314(a), *inter partes* review is instituted as to claims 1–34 of the '044 patent on each of the five 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), *interpartes* review of the '044 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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