

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CRUSOE ENERGY SYSTEMS, LLC,
Petitioner,

v.

UPSTREAM DATA INC.,
Patent Owner.

PGR2023-00052
Patent 11,574,372 B2

Before HYUN J. JUNG, JAMES J. MAYBERRY, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

DECISION
Denying Institution of Post-Grant Review
35 U.S.C. § 324

Crusoe Energy Systems, LLC (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting post-grant review of claims 1–41 (“the challenged claims”) of U.S. Patent No. 11,574,372 B2 (Ex. 1001, “the ’372 patent”). Upstream Data Inc. (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”).

We have authority to determine whether to institute a post-grant review. 35 U.S.C. § 324 (2018); 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”). Section 324(a) provides that a post-grant review may not be instituted “unless . . . the information presented in the petition . . . , if such information is not rebutted, would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” Upon considering the Petition, Preliminary Response, and the cited evidence, we conclude that Petitioner has not satisfied its burden under 35 U.S.C. § 324 to show that it is more likely than not that claim 1 is unpatentable.

I. BACKGROUND

A. Real Parties-in-Interest

Petitioner identifies that Crusoe Energy Systems, LLC is the real party-in-interest. Pet. 53. Patent Owner indicates Upstream Data Inc. is the patent owner and real party-in-interest in this proceeding. Paper 5, 2.

B. Related Proceedings

The parties state that the ’372 patent is at issue in PGR2023-00039, filed July 20, 2023 (“the ’039 PGR”) and *Upstream Data Inc. v. Crusoe*

Energy Systems LLC, Case No. 1:23-cv-01252 (D. Colo.) (filed May 18, 2023). Pet. 1–2, 53; Paper 5, 2.

C. The '372 Patent

The '372 patent is titled “Blockchain Mine at Oil or Gas Facility.” Ex. 1001, code (54). Figure 1, reproduced below, is a schematic of a system for power a blockchain mine at a remote oil well, using a generator.

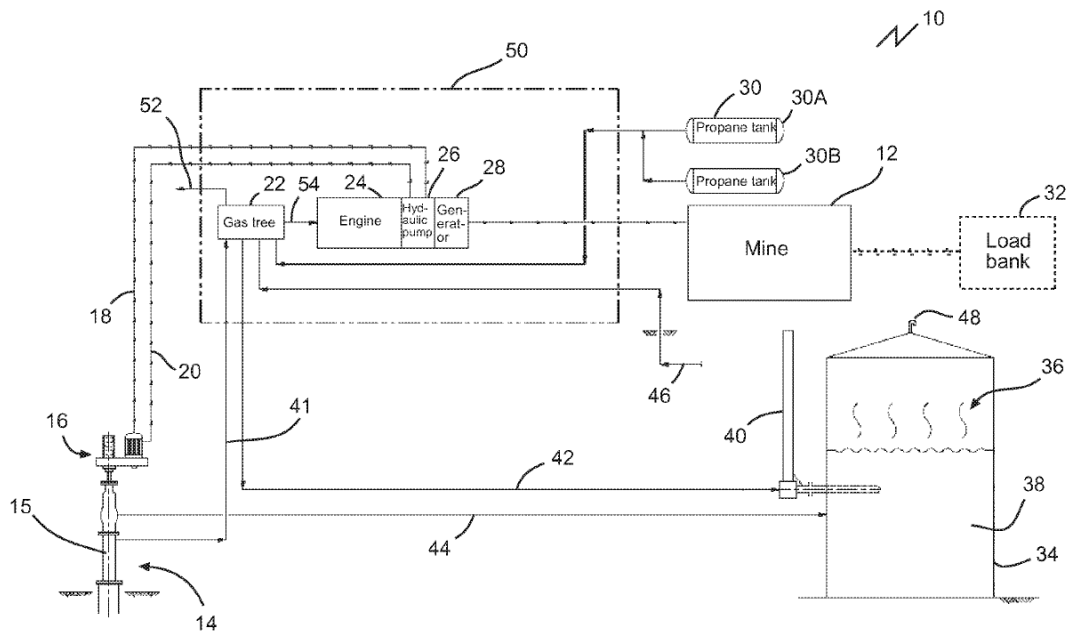


Figure 1 illustrates blockchain mining device 12, oil well 14, and generator 28. *Id.* at 8:35–40.

According to the '372 patent, “[a]t remote oil and gas facilities, excess natural gas is often wasted, for example vented to atmosphere or burned via flaring.” Ex. 1001 at 1:11–13. The '372 patent identifies that this is because “[i]n many locations it may not be economically feasible to build the infrastructure required to take the produced gas, or resultant electricity generated by combustion of the gas, to market.” *Id.* at 7:49–52. The '372 patent discloses that the “cheaper the electricity the more reward the miner

will receive relative to competition.” *Id.* at 13:20–21. The ’372 patent further discloses that reliance on “low-cost hydroelectric power” has led to a “centralization of blockchain miners in specific countries with abundant hydroelectric power.” *Id.* at 14:4–11. This, according to the ’372 patent, is counter to the idea of decentralization and distribution inherent in the blockchain model, so the ’372 patent identifies a “need to further decentralize BITCOINTM and other blockchain mining through a more decentralized source of low-cost power.” *Id.* at 14:13–20. To this end, the ’372 patent describes positioning a generator and blockchain mining device “at a suitable location relative to the hydrocarbon well, storage site, or processing facility,” such as located adjacent to a remote oil well. *Id.* at 9:14–19.

D. Illustrative Claim

The ’372 patent includes 41 claims, and Petitioner challenges claims 1–41. Of the challenged claims, claims 1 and 24 are independent. Claim 1 is illustrative and reads as follows¹:

[1pre] A system comprising:

[1a] a source of combustible gas produced from a facility selected from a group consisting of a hydrocarbon production, storage, or processing facility;

[1b] a generator connected to the source of combustible gas to receive a continuous flow of combustible gas to power the generator; and

[1c] blockchain mining devices connected to the generator; in which:

¹ We utilize Petitioner’s annotations. Pet. v.

- [1c_i] the blockchain mining devices each have a mining processor and are connected to a network interface;
- [1c_ii] the network interface is connected to receive and transmit data through the internet to a network that stores or has access to a blockchain database;
- [1c_iii] the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database;
- [1c_iv] the network is a peer-to-peer network;
- [1c_v] the blockchain database is a distributed database stored on plural nodes in the peer-to-peer network; and
- [1c_vi] the blockchain database stores transactional information for a digital currency.

Ex. 1001, 19:52–20:7.

E. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–41 of the '372 patent are unpatentable on the following grounds (Pet. 3–4, 10–46):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–41	112(b) ²	Indefiniteness
1–41	112(a)	Written Description
10–16, 23, and 41	112(f)/112(b)	112(f) Indefiniteness

² 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 on March 16, 2013, before the filing of the applications to which the '372 patent claims priority. Therefore, we apply the AIA versions of Section 112.

Petitioner also relies on the declaration of Mr. Vernon Kasdorf (Ex. 1024) to support its arguments.

II. ELIGIBILITY FOR POST-GRANT REVIEW

As a threshold matter, we must determine whether the '372 patent is eligible for post-grant review. The post-grant review provisions in section 6(d) of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (September 16, 2011) ("AIA") apply only to patents that "contain[] or contained at any time . . . a claim to a claimed invention that has an effective filing date . . . that is on or after [March 16, 2013]." AIA §§ 3(n)(1), 6(d), 6(f)(2)(A), 125 Stat. 284, 293, 305–312 (2011).

Each petitioner for post-grant review must certify that the challenged patent is available for post-grant review. 37 C.F.R. § 42.204(a). In addition, "[a] petition for a post-grant review may only be filed not later than the date that is 9 months after the date of the grant of the patent or of the issuance of a reissue patent (as the case may be)." 35 U.S.C. § 321(c). Petitioner has the burden to demonstrate eligibility for post-grant review. *See Mylan Pharms. Inc. v. Yeda Res. & Dev. Co.*, PGR2016-00010, Paper 9 at 10 (PTAB Aug. 15, 2016).

Petitioner certifies under 37 C.F.R. § 42.204(a) that the '372 patent is available for post-grant review. Pet. 3. Petitioner also contends that it "is not barred or estopped from requesting review, has not filed a civil action regarding the '372 patent, and this Petition is being filed within nine months of the '372 patent's issuance." *Id.* (citing 37 C.F.R. §§ 42.201–202). Patent Owner does not address post-grant-review eligibility of the '372 patent in its Preliminary Response.

On this record, we determine that the '372 patent is eligible for post-grant review. The '372 patent's earliest effective filing date is February 8, 2017 (the filing date of a provisional application to which the '372 patent claims priority), which is after March 16, 2013. Ex. 1001, code (60). In addition, the Petition's filing date, September 26, 2023 (Paper 3, 1), is not later than the date that is nine months after the '372 patent's grant date of February 7, 2023. Ex. 1001, code (45). Finally, we accept Petitioner's certification that it had not filed a civil action challenging the validity of a claim of the '372 patent before the Petition was filed.

III. ANALYSIS

A. Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, including: “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Best Med. Int'l, Inc. v. Elekta Inc.*, 46 F.4th 1346, 1353 (Fed. Cir. 2022) (citations

omitted). “The patent’s purpose can also be informative.” *Id.* (citation omitted).

Petitioner asserts that one of ordinary skill in the art (“POSITA”) would have had “a degree in chemical engineering, petroleum engineering, process engineering, mechanical engineering, or a similar field with 1–2 years of experience in designing power generation systems, Blockchain mining systems, or other comparable hands-on experience.” Pet. 4 (citing Ex. 1024 ¶ 15). Petitioner adds that “[a]lternatively, a person having 3–5 years of experience in the Blockchain mining industry would also qualify as a POSITA” and “[a]dditional education could substitute for professional experience, or vice versa.” *Id.* (citing Ex. 1024 ¶ 15).

Patent Owner disagrees with Petitioner’s articulation of the level of ordinary skill in the art, but does not offer a definition of its own. Prelim. Resp. 5. According to Patent Owner, “[t]his Petition and related declaration propose two alternative levels of ordinary skill in the art, where the second alternative does not require any formal education or any experience in the field of oil or gas production.” *Id.* While Patent Owner disagrees with Petitioner’s characterization of the level of ordinary skill in the art, Patent Owner does not explain how a different level of skill is likely to alter Petitioner’s analysis. Instead, Patent Owner contends that it “applied Petitioner’s articulation and confirmed the analysis detailed below would not change based on disagreements over the level of ordinary skill in the art.” *Id.* (citing Ex. 2101 ¶¶ 16–17).

To the extent necessary, and for purposes of this Decision, we accept Petitioner’s statement on the level of skill in the art. *See Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007) (listing the type of problems encountered in the art, prior art solutions to those problems, and the sophistication of the technology as factors that may be considered in determining the level of ordinary skill in the art). The prior art itself may be sufficient to demonstrate the level of skill in the art at the time of the invention. *See Okajima*, 261 F.3d at 1355 (explaining that specific findings regarding ordinary skill level are not required “where the prior art itself reflects an appropriate level and a need for testimony is not shown”) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

B. Claim Construction

In a post-grant 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), including construing the claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.200(b). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention” and “after reading the entire patent.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 1321 (Fed. Cir. 2005) (en banc). In addition to the specification and prosecution history, we also consider use of the terms in other claims and extrinsic evidence including expert and inventor testimony,

dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Id.* at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

In conjunction with its indefiniteness assertions, Petitioner provides constructions for the terms “blockchain mining devices,” “mining processor,” and “adapted to mine transactions.” Pet. 11–26. Petitioner also contends that several terms are means-plus-function limitations, and as such, subject to 35 U.S.C. § 112(f). Pet. 29–46.

Patent Owner disputes each of Petitioner’s constructions while addressing Petitioner’s indefinite assertions (Prelim. Resp. 9–38), but does not proffer any of its own constructions in this proceeding (*id.* at 5).³ Patent Owner also disagrees with Petitioner’s assertions regarding 35 U.S.C. § 112(f). *Id.* at 42–61.

³ Patent Owner directs our attention to where it “addressed claim construction of terms proposed for construction by Petitioner” in the ’039 PGR. Prelim. Resp. 5 (citing PGR2023-00039, Paper 6 at 4–9). In the ’039 PGR, Patent Owner took the position that no construction is necessary for the term “blockchain mining devices” “[b]ecause the claim language itself informs a person of ordinary skill as to [its] meaning.” PGR2023-00039, Paper 6 at 6. And, with respect to “mining processor,” Patent Owner stated that one of ordinary skill in the art “would understand that at a minimum a mining processor is ‘a processor with blockchain mining circuitry.’” *Id.* at 5 (citing PGR2023-00039, Ex. 2001 ¶ 39). Patent Owner did not provide any express claim construction arguments regarding the term “adapted to mine transactions” in the ’039 PGR. To the extent that Patent Owner incorporates these arguments from PGR2023-00039, we do not consider them. *See* 37 C.F.R. § 42.6(3).

Because the meanings of the claim terms “blockchain mining devices,” “mining processor,” and “adapted to mine transactions” are inextricably linked with Petitioner’s indefiniteness grounds, we will address the meaning of those terms in the context of the parties’ arguments to the extent necessary to resolve the controversy as set forth below in Section III.C. Similarly, we will address the parties’ arguments regarding the disputed means-plus-function limitations in our discussion of 35 U.S.C. § 112(f) as set forth below in Section III.E. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Asserted Indefiniteness (Ground 1: Claims 1–41)

Petitioner asserts that the terms “blockchain mining device,” “mining processor,” and “adapted to mine transactions” render claims 1–41 of the ’372 patent indefinite. Pet. 10–26 (citing Ex. 1024). Patent Owner disputes Petitioner’s assertions. Prelim. Resp. 5–38 (citing Ex. 2101). We address arguments for each term below.

1. Applicable Law

Patent claims must “particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention.” 35 U.S.C. § 112(b). In post-grant reviews, we apply the same indefiniteness standard as used in federal courts and the U.S. International Trade Commission under *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898 (2014), and its progeny. *See* USPTO Memorandum on the Approach to

Indefiniteness Under 35 U.S.C. § 112 in AIA Post-Grant Proceedings (Jan. 6, 2021).⁴

Under *Nautilus*, “a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 572 U.S. at 901 (emphasis added). “[A] patent must be precise enough to afford clear notice of what is claimed, thereby apprising the public of what is still open to them,” but the present standard recognizes that “absolute precision is unattainable.” *Id.* at 909–10 (internal quotation marks and brackets omitted).

2. *Analysis*

a. “*blockchain mining devices*”

Petitioner asserts that claims 1 and 24 are indefinite because “multiple different interpretations of the term ‘blockchain mining devices’ are possible.” Pet. 12. According to Petitioner, the term “blockchain mining devices” could be construed as

either (1) a plurality of mining servers (e.g., spondooliestech SP35 servers) housed together (e.g., in a portable shipping container), or (2) a plurality of mobile data centers (i.e., a plurality of shipping containers, each configured as a mobile data center such as CryptoKube’s mobile Bitcoin data center) each containing a plurality of mining servers housed together.

Id. (citing Ex. 1024 ¶ 49; Ex. 1006, 2). Petitioner argues that when the term “blockchain mining devices” is read together with dependent claims 16 and

⁴ Available at <https://www.uspto.gov/sites/default/files/documents/IndefinitenessMemo.pdf>.

17, the term could be construed to mean “a plurality of mining servers housed together.” *Id.* at 14. For example, Petitioner notes that “claim 17 requires that ‘the blockchain mining devices ***are housed*** in a portable enclosure that is structured to one or more [to] form a skid or be mounted on a trailer.” *Id.* (citing Ex. 1001, 21:22–24) (emphasis original). Similarly, Petitioner points out that “dependent claim 16 requires [that] ‘a controller is connected to operate **a cooling system** to maintain the blockchain mining devices within a predetermined operating range of temperature.’” *Id.* at 15 (citing Ex. 1001, 21:18–21) (emphasis original). From this, Petitioner concludes that one of ordinary skill in the art “would have understood that for the plurality of blockchain mining devices to share the same cooling system, the term ‘blockchain mining devices’ should mean the plurality of mining servers are housed together, for example, in a modular shipping container.” *Id.* (citing Ex. 1024 ¶ 51).

Alternatively, Petitioner argues that the Specification and prosecution history suggest that the term “blockchain mining devices” could be construed to mean “a plurality of mobile data centers, each containing a plurality of mining servers.” Pet. 16 (citing Ex. 1024 ¶ 53). Petitioner argues that this construction is consistent with Figure 4’s illustration of a blockchain mining device. Petitioner provides the following copy of Figure 4 of the ’372 patent, annotated to identify, among several items, mining device 12, mining processors 92, and network equipment 88.

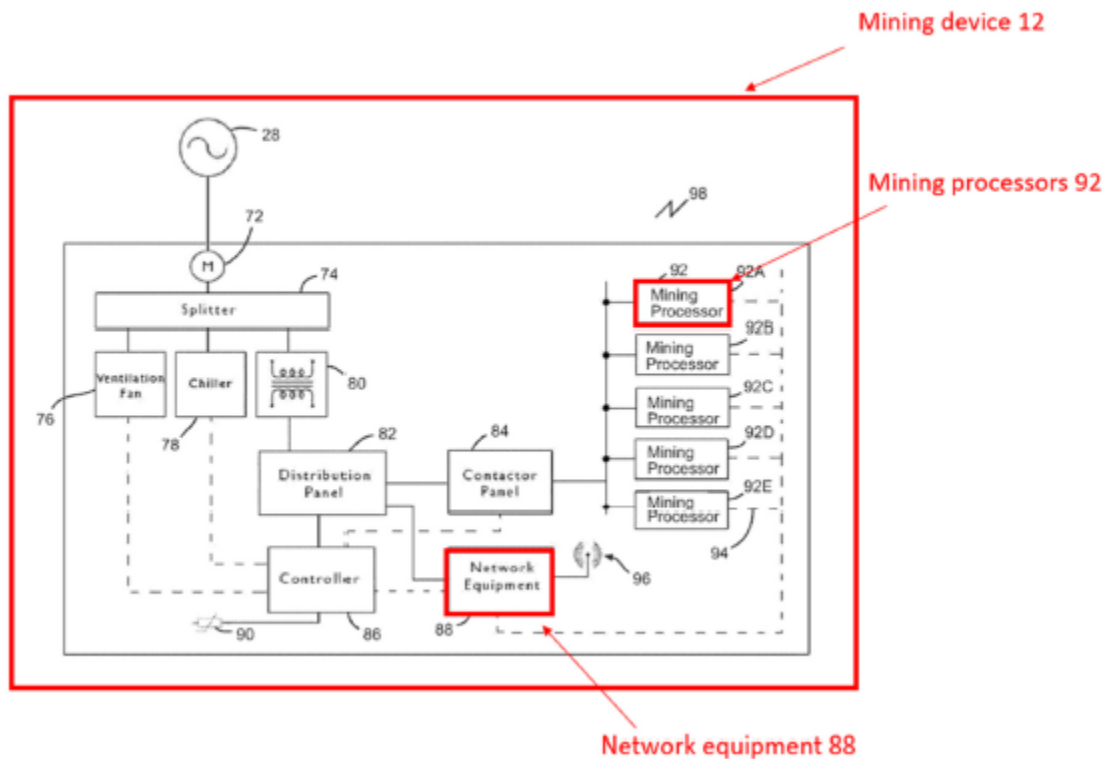


Figure 4, annotated, “is a schematic depicting a blockchain mining device with a plurality of mining processors and associated control and network equipment housed within a portable enclosure.” Ex. 1001, 6:1–4.

Pet. 17 (citing Ex. 1001, Fig. 4). Petitioner points out that the Specification discloses “that each ‘blockchain mining device 12 may have a network interface, such as network equipment 88, and *one or a plurality of mining processors* 92 (92A–92E for example).” Pet. 16 (citing Ex. 1001, 15:21–25) (emphasis in original). Petitioner asserts that the Specification’s disclosure “that ‘[e]ach mining processor 92 may be positioned on racks or shelving units” suggests that “mining processor 92” does not refer to “blockchain mining device 12”; but rather, “to the mining server (e.g., spondooliestech SP35 server).” *Id.* at 16–17 (citing Ex. 1001, 17:21–22; Ex. 1024 ¶ 54). In addition, Petitioner contends that the Specification “teaches

that the term ‘blockchain mining device’ is interchangeable with the term ‘data center.’” *Id.* at 17; *see also* Ex. 1001, 4:55–56 (“The blockchain mining device may be replaced by a suitable mining device or data center.”).

Petitioner also contends that during prosecution, Applicant “relied on the requirement of multiple ‘blockchain mining devices’ to distinguish over prior art containing a single data center, thereby indicating that the term requires a plurality of data centers.” *Id.* at 18 (citing Ex. 1002, 210, 213, 218, 223). Thus, Petitioner concludes that one of ordinary skill in the art “would have understood that the claim limitation ‘blockchain mining devices’ requires a plurality of mobile data centers, each of which contains multiple mining servers housed together.” *Id.* at 16–17 (citing Ex. 1024 ¶ 55).

In light of the above, Petitioner argues that one of ordinary skill in the art “would have had no guidance on what constitutes a plurality of ‘blockchain mining devices.’” Pet. 19 (citing Ex. 1024 ¶ 57). According to Petitioner, “the [S]pecification does not provide sufficient guidance about the meaning of the claimed system comprising multiple blockchain mining devices to give notice to the public of the boundaries between infringing and innocent activity.” *Id.* at 21 (citing *Nautilus*, 572 U.S. at 909). Petitioner, thus, concludes that the Challenged Claims are indefinite under 35 U.S.C. § 112(b) because one of ordinary skill in the art “would not understand what is claimed by ‘blockchain mining devices’ in each of independent claims 1 and 24, and, through their dependence thereon, each of dependent claims 2–23 and 25–41.” Pet. 21 (citing Ex. 1024 ¶ 58).

In response, Patent Owner argues that the claims are not indefinite because, when read in light of the Specification, claims 1 and 24 inform one of ordinary skill in the art about the scope of the invention with reasonable certainty. Prelim. Resp. 10 (citing *Nautilus*, 572 U.S. at 910). Contrary to Petitioner’s assertions, Patent Owner contends

there is no lack of clarity in the claims or the [S]pecification. The plain claim language of the independent claims informs [one of ordinary skill in the art] that a blockchain mining device comprises a mining processor and a specialized network interface that communicates with a blockchain database. [Ex. 1001, claim 1; Ex. 2101 ¶ 34]. Thus, to the extent Petitioner’s term “mining server” refers to the recited “mining processor,” the claim language does require each blockchain mining device to have a mining processor. [Ex. 1001, claim 1].

Id. at 11.

Instead, based on “the clarity provided by the intrinsic record,” Patent Owner takes the position that one of ordinary skill in the art “would not consider either of the two supposed ‘different interpretations’ proposed by Petitioner.” Prelim. Resp. 12–13 (citing Ex. 2101 ¶ 36). Patent Owner contends that

Petitioner’s “alternative interpretations” of its own construction are divorced from the intrinsic record discussed above. Petitioner’s first “alternative” is “a plurality of mining servers (e.g., spondooliestech SP35 servers) housed together (e.g., in a portable shipping container).” [Pet. 12]. Notably, this “interpretation” or “construction” recites extrinsic terminology such as “mining servers” and “spondooliestech SP35 servers.”

Id. at 14.

With respect to Petitioner’s first construction, Patent Owner asserts that, in addition to being based on extrinsic evidence, Petitioner’s “first

construction” incorporates language from dependent claim 16 and “omits elements of the claimed ‘blockchain mining devices’ that are recited in the independent claims such as a specialized network interface that communicates with a blockchain database.” *Id.* at 15 (citing Ex. 1001, 19:59–65; Ex. 2101 ¶ 41). Patent Owner argues that Petitioner’s “first construction” is at odds with “*Nautilus*’s holding that ‘a patent’s claims [are] viewed in light of the specification and prosecution history.’” *Id.* (citing *Nautilus*, 572 U.S. at 910). Patent Owner explains that “the claim language and the [S]pecification teach that a blockchain mining device comprises one or more mining processors as well as other components such as a specialized network interface, controller, cooling system and others.” Prelim. Resp. 19 (citing Ex. 1001, 16:32–39, 17:23–29, claims 1, 16; Ex. 2101 ¶ 49). Thus, Patent Owner takes the position that “when read in view of the claim language and [S]pecification, there is no ambiguity that it is blockchain mining devices and not something else that’s located adjacent to the facility.” *Id.* at 21 (citing Ex. 2101 ¶ 51).

Patent Owner argues next that Petitioner’s “second construction” is flawed because

it is contrary to the independent claim language which (1) does not include a “mobile” limitation; (2) does not recite “data centers;” and (3) does not require that each blockchain mobile device comprise a plurality of mining processors (assuming that Petitioner’s “mining server” is equivalent to claimed mining processors).

Prelim. Resp. 21 (citing Ex. 1001, claim 1; Ex. 2101 ¶ 52). According to Patent Owner, one of ordinary skill in the art would not recognize blockchain mining devices, to be equivalent to, or interchangeable with,

datacenters in light of the '372 patent's disclosure. *Id.* at 22 (citing Ex. 2101 ¶ 54); *see also id.* at 21–22 (citing Ex. 1001, 13:29–33, 13:44–48) (arguing that it was known in the art that blockchain mining is “intentionally designed to be resource-intensive and difficult so that the number of blocks found each day by miners remains steady”). And, contrary to Petitioner's assertion regarding the prosecution history,

“the [A]pplicant did not rely on the plurality of blockchain mining devices to distinguish the prior art. [Ex. 1002], 222–223. Rather, as explained above, the [A]pplicant argued that [one of ordinary skill in the art] would not have combined Belady's generic data center with a bitcoin mining system because of the known energy-intensive nature of bitcoin mining.”

Id. at 24. Thus, Patent Owner concludes that “[t]he intrinsic record does not support Petitioner's ‘second construction.’” *Id.*

To satisfy the definiteness requirement of § 112(b), a patent's claims must, when “viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus*, 572 U.S. at 910. We are not persuaded that the Petition shows that it is more likely than not that Petitioner would prevail in demonstrating that the term “blockchain mining devices,” as recited by independent claims 1 and 24, is indefinite.

As an initial matter, we agree with Patent Owner that “Petitioner's indefiniteness theory is flawed because its ‘alternative interpretations’ are of its incorrect claim construction rather than the claim language in view of the specification as required by *Nautilus*.” Prelim. Resp. 13. We find the Specification informs, with reasonable certainty, those skilled in the art about the meaning of the term “blockchain mining devices.” The

Specification informs us that “each blockchain mining device 12 may be composed of suitable components. The blockchain mining device 12 may have a network interface, such as network equipment 88, and one or a plurality of mining processors 92 (92A-92E for example).” Ex. 1001, 15:21–25. And, claim 1 recites that the “blockchain mining devices [are] connected to the generator” and “each have a mining processor and are connected to a network interface.” *Id.* at 19:59–62. Thus, reading the term “blockchain mining devices” in light of the language of the claim and the Specification, an ordinarily skilled artisan would have understood “blockchain mining devices” to mean a device composed of, for example, a network interface and one or more processors. *Id.* at 15:21–25, 19:59–62.

Petitioner argues that dependent claims 16 and 17 require that the term “blockchain mining devices” be construed to mean “a plurality of mining servers housed together” (Pet. 14–15), but we agree with Patent Owner that Petitioner’s “first construction” is flawed, at least because it analyzes claims 16 and 17 in isolation from the language of claim 1 and the Specification. In this regard, claim 16 recites that “a controller is connected to operate a cooling system to maintain the blockchain mining devices” and claim 17 recites that “the blockchain mining devices are housed in a portable enclosure.” Ex. 1001, 21:18–24. Patent Owner identifies that

the [S]pecification describes embodiments of blockchain mining devices where “each” device comprises a network interface and one or more mining processors and may further comprise a controller. *See e.g.*, [Ex. 1001], 15:21–25, 16:32–39. The controller “may be connected to at least a thermistor 90 (temperature sensor) within the mining device 12, to allow the controller 86 to control the ventilation and chilling loads.” The

controller “may be connected to at least a thermistor 90 (temperature sensor) within the mining device 12, to allow the controller 86 to control the ventilation and chilling loads.” [*Id.* at] 17:3–6.

Prelim. Resp. 16. In view of the Specification, we agree with Patent Owner that one of ordinary skill in the art would have recognized that “each” of the “blockchain mining devices” may “further comprise a temperature-regulating controller and cooling system” (*id.* (citing Ex. 2101 ¶ 43)) and “may further be housed in a ‘portable enclosure 98’” (*id.* at 18 (citing Ex. 1001, 15:21–25, 15:41–47; Ex. 2101 ¶ 47)). We also agree with Patent Owner that one of ordinary skill in the art “would not conclude that the blockchain mining devices recited in those claims are mere ‘mining servers’ housed in the same enclosure as alleged by Petitioner.” *Id.* (citing Ex. 2101 ¶ 48). Thus, we find that Petitioner’s first proposed interpretation of “blockchain mining devices” views the language of claims 16 and 17 in isolation without considering the language of claim 1 and the Specification. *See also* Pet. 12–15 (arguing with support only from claim language and declarant testimony); *cf.* Ex. 1024 ¶¶ 49–52 (opining only on claim language).

Petitioner argues alternatively that the Specification and the prosecution history require the term “blockchain mining devices” be construed to mean “multiple data centers, each housing a plurality of mining servers” (Pet. 16–19), but we agree with Patent Owner that Petitioner’s “second construction” is also flawed, at least because it:

is contrary to the independent claim language which (1) does not include a “mobile” limitation; (2) does not recite “data centers;” and (3) does not require that each blockchain mobile device

comprise a plurality of mining processors (assuming that Petitioner’s “mining server” is equivalent to claimed mining processors).

Prelim. Resp. 21 (citing Ex. 2101 ¶ 52). Instead, as discussed above, we find the intrinsic record makes clear that an ordinarily skilled artisan would have understood “blockchain mining devices” to mean a device composed of, for example, a network interface and one or more processors, with reasonable certainty. Here, the Specification and the claims both convey to the skilled artisan what subject matter falls within the metes and bounds of the term “blockchain mining devices.” *See, e.g.*, Ex. 1001, 15:22–25 (“The blockchain mining device 12 may have a network interface, such as network equipment 88, and one or a plurality of mining processors 92 (92A–92E for example).”), 19:51–52 (claim 1 reciting that “the blockchain mining devices each have a mining processor and are connected to a network interface”). Therefore, we agree with Patent Owner that one of ordinary skill in the art “would not consider either of the two supposed ‘different interpretations’ proposed by Petitioner.” Prelim. Resp. 12–13 (citing Ex. 2101 ¶ 36).⁵

And, to the extent Petitioner argues that “the resulting ambiguity” between these different interpretations would have left one of ordinary skill in the art without any “guidance on what constitutes a plurality of ‘blockchain mining devices’” (Pet. 19 (citing Ex. 1024 ¶ 57)), we agree with Patent Owner that any potential ambiguity stems from Petitioner’s proposed

⁵ Having considered the parties’ arguments, in view of the intrinsic evidence, and for purposes of this proceeding, we see no need to construe expressly the term “blockchain mining devices,” beyond the discussion above determining that Petitioner’s proposed constructions are too narrow.

constructions rather than the scope and meaning of the term “blockchain mining devices” itself. In our view, Petitioner’s arguments are not concerned with the ambiguity of the term “blockchain mining devices”; but rather, concerned with the term’s breadth. However, a term is not unclear merely because it is broad, so long as the boundaries can be ascertained with reasonable certainty. *See BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1367 (Fed. Cir. 2017) (“[T]he inference of indefiniteness simply from the scope finding is legally incorrect: ‘breadth is not indefiniteness.’” (quoting *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1341 (Fed. Cir. 2005))).

Petitioner further argues that the present case is similar to the Federal Court’s decision in *Capital Security Systems, Inc. v. NCR Corp.* (Pet. 12–13), where the court found the term “transactional operator” to be indefinite because it had “no commonly-accepted definition and its scope is unclear in view of the intrinsic evidence.” 725 F. App’x 952, 958–59 (Fed. Cir. 2018). Petitioner contends, that like the “transactional operator” in *Capital Security Systems*, “it is unclear whether the blockchain mining device includes the mining server (e.g., spondooliestech SP35 servers), the controller, the cooling system, the intermodal transport container, or a subset thereof.” Pet. 13.

We are not persuaded, however, that the present facts are similar to those presented in *Capital Security Systems*. In *Capital Security Systems*, the Federal Circuit reasoned that while it was at least clear that the “transactional operator” referred to a computer, beyond that, it was indeterminable which components described in the specification were part of

the “transactional operator” computer. *See Cap. Sec. Sys.*, 725 F. App’x at 958–59. Unlike *Capital Security Systems*, we do not find the meaning of the term “blockchain mining devices” to be indeterminable; but rather, as discussed above, find the intrinsic evidence of the ’372 patent “inform[s], with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 134 S. Ct. at 2124. We note that the test for indefiniteness requires a reasonable certainty, not absolute certainty, concerning the scope of the claims.

On the current record, we determine that one of ordinary skill in the art would have reasonably understood the meaning of the term “blockchain mining devices.”

b. “mining processor”

Petitioner asserts that claims 1 and 24 are also indefinite because it is “unclear whether the term ‘mining processor’ refers to (1) a mining server (e.g., a spondooliestech SP35 server) containing a plurality of application-specific integrated circuits (ASICs)), or (2) an individual chip within the mining server (e.g., an ASIC inside of a spondooliestech SP35 server).” Pet. 21.

Petitioner first takes the position that “[i]f the term ‘blockchain mining devices’ refers to the mining servers, then the term ‘mining processor’ cannot also mean mining servers.” Pet. 22 (citing Ex. 1024 ¶ 60; Ex. 1001, claim 17). Petitioner points out that the ’372 patent’s Specification discloses that “an ASIC mining processor” includes “the hash boards,” “a controller,” “a power supply,” and notes that “[e]ach mining

processor 92 may be positioned on racks or shelving units.” *Id.* (citing Ex. 1001, 17:15–22). From this, Petitioner contends that one of ordinary skill in the art would have understood that

mining processor 92 was not a chip (or a circuit or a hash board) contained within a mining server, but rather was a device of sufficient size and form that it could be ‘positioned on racks or shelving units,’ which suggests that the mining processor 92 was a standalone object.

Id. (citing Ex. 1024 ¶ 60). Thus, Petitioner concludes that “the [S]pecification requires the term ‘mining processor’ to mean a mining server.” *Id.*

Petitioner argues, however, that if a “mining processor” is construed to mean “an individual chip within the mining server,” one of ordinary skill in the art “would not know how to adjust the mining activity of a single ASIC within a mining server.” Pet. 22–32 (citing Ex. 1024 ¶ 61; Ex. 1001, claim 10). According to Petitioner, further confusing the issue, “the [S]pecification teaches that ‘[t]he **mining processor** comprises a plurality of **mining processors**,’ without any attempt to explain the difference, if any, between a ‘mining processor’ and the multiple ‘mining processors’ of which it is comprised.” *Id.* at 23 (citing Ex. 1001, 3:16–17, 17:55–56). Thus, Petitioner argues that one of ordinary skill in the art “would not have understood what is meant by ‘mining processor’ in each of independent claims 1 and 24.” *Id.* at 23–24 (citing Ex. 1024 ¶ 63).

Patent Owner responds that the term “mining processor” is not indefinite. Prelim. Resp. 27–33. Instead, Patent Owner argues that Petitioner’s indefiniteness argument, is once again, based on two competing

constructions to create uncertainty where there is none. *Id.* at 28. According to Patent Owner, “the claims and the [S]pecification provide a consistent and reasonably certain description of what a mining processor is and what it does.” *Id.* (citing Ex. 2101 ¶ 59). Patent Owner contends that Petitioner’s constructions impermissibly rely on extrinsic evidence, and improperly limit claim 17 to “a single enclosure with multiple blockchain mining devices” to support its “conclusion that ‘blockchain mining devices’ in that claim refers to ‘mining servers.’” *Id.* at 29 (citing Pet. 21). Patent Owner last argues that Petitioner fails to demonstrate that the term “mining processor” is indefinite because the Specification discloses that “[t]he mining processor comprises a plurality of mining processors.” *Id.* at 32 (citing Pet. 23; Ex. 1001, 3:16–17). Instead, Patent Owner contends that one of ordinary skill in the art “would understand the phrase referenced by Petitioner to indicate that the mining processor may in fact be a set of such processors operating together to mine blockchain transactions.” *Id.* at 33 (citing Ex. 1001, Fig. 4, 15:21–25; Ex. 2101 ¶ 68).

We are not persuaded that the Petition shows that it is more likely than not that Petitioner would prevail in demonstrating that the term “mining processor,” as recited by independent claims 1 and 24, is indefinite. Instead, we agree with Patent Owner that Petitioner’s indefiniteness arguments, are again, premised on their proposed competing constructions in an effort “to create uncertainty where there is none.” Prelim. Resp. 28; *see also id.* at 31 (“To arrive at its constructions Petitioner first deliberately ignores the specification and then, unsurprisingly, proves that its constructions are incorrect when the specification is considered.”).

We find the Specification informs, with reasonable certainty, those skilled in the art about the meaning of the term “mining processor.” Here, the Specification discloses that “[e]ach mining processor 92 may have a variety of configurations, but generally may include at least a power supply, a controller board and mining circuitry, such as an ASIC circuit.” Ex. 1001, 17:9–12. And, claim 1 recites that “the mining processors are connected to the network interface and adapted to mine transactions associated with the blockchain database and to communicate with the blockchain database.” *Id.* at 19:66–20:2. We also credit the declaration testimony of Dr. You who opines that “the claims and the [S]pecification provide a consistent and reasonably certain description of what a mining processor is and what it does.” Prelim. Resp. 28 (citing Ex. 2101 ¶ 59). We find Dr. You’s opinion to be supported by the ’372 patent’s Specification. Ex. 1001, 15:21–25.

Petitioner argues that “the [S]pecification requires the term ‘mining processor’ to mean a mining server,” and as such, the term “mining processor” is indefinite because “[i]f the term ‘blockchain mining devices’ refers to the mining servers, then the term ‘mining processor’ cannot also mean mining servers.” Pet. 22 (citing Ex. 1024 ¶ 60). However, Petitioner’s argument is not persuasive at least because it is premised on its mistaken understanding that “claim 17 . . . requires a plurality of blockchain mining devices to be housed within the same portable enclosure.” Prelim. Resp. 29. Instead, we agree with Patent Owner that the language of claim 17 conveys to a person of ordinary skill that claim 17 “is directed to configurations where blockchain mining devices are housed in one *or more* enclosures.” *Id.* (citing Ex. 2101 ¶ 62). We also agree with Patent Owner that “there is

no reason for [one of ordinary skill in the art] to think that, contrary to the entire intrinsic record, ‘blockchain mining devices’ are the same thing as ‘mining processors.’” *Id.* at 30 (citing Ex. 2101 ¶ 63).

Equally unpersuasive is Petitioner’s argument that one of ordinary skill in the art would not have understood what is meant by “mining processor” because “the [S]pecification teaches that ‘[t]he **mining processor** comprises a plurality of **mining processors**,’ without any attempt to explain the difference, if any, between a ‘mining processor’ and the multiple ‘mining processors’ of which it is comprised.” Pet. 23 (citing Ex. 1001, 3:16–17, 17:55–56). Instead, we credit the declaration testimony of Dr. You who opines that one of ordinary skill in the art “would understand the phrase referenced by Petitioner to indicate that the mining processor may in fact be a set of such processors operating together to mine blockchain transactions.” Prelim. Resp. 33 (citing Ex. 2101 ¶ 68). We find Dr. You’s opinion to be supported by the ’372 patent’s Specification which “teaches that a blockchain mining device may include a single mining processor 92 or it may comprise a set of processors such as 92A–E.” Prelim. Resp. 32 (citing Ex. 1001, 15:21–25).

We determine that one of ordinary skill in the art would have reasonably understood the meaning of the term “mining processor.”

c. “adapted to mine transactions”

Petitioner asserts that claims 1 and 24 are further indefinite because “the [S]pecification of the ’372 [p]atent does not describe any particular indicia that would demonstrate that a particular computing device was ‘adapted to mine transactions.’” Pet. 24 (citing *Animal Care Systems, Inc. v.*

Hydropac/Lab Products, Inc., No. 13-CV-00143, 2015 WL 535566, *9–*10 (D. Colo. Feb. 9, 2015)). According to Petitioner, one of ordinary skill in the art “would not have known whether such generic computers would infringe or additional hardware changes are required, and thus would not have been able to determine the scope of this term with reasonable certainty.” *Id.* at 26 (citing Ex. 1024 ¶ 66). Thus, Petitioner contends that one of ordinary skill in the art “would not understand what is claimed by ‘adapted to mine transactions’ in each of independent claims 1 and 24.” *Id.* (citing Ex. 1024 ¶ 67).

Patent Owner responds that the phrase “adapted to mine transactions” is not indefinite because it “is reasonably certain when considered in view of the [S]pecification.” Prelim. Resp. 33 (citing *Nautilus*, 572 U.S. at 910). In this regard, Patent Owner explains that “the ’372 [S]pecification provides a detailed description disclosing to [one of ordinary skill in the art] that mining transactions requires a processor with blockchain mining circuitry configured with mining algorithms such as a cryptographic hashing algorithm.” *Id.* at 36 (citing Ex. 1001, 13:49–52; Ex. 2101 ¶ 74). For example, Patent Owner points out that Specification discloses that “mining processors can have different kinds of mining circuitry such as a CPU, GPU, FPGA, and ASIC,” and notes that one of ordinary skill in the art would understand “that some types of mining circuitry, such as a CPU, are designed to run software programs; other types, such as an ASIC (application-specific integrated circuit), comprise hardware logic to perform specific functions, though there may also be software programmable elements.” *Id.* at 34 (citing Ex. 1001, 17:12–15; Ex. 2101 ¶ 72).

We are not persuaded that the Petition shows that it is more likely than not that Petitioner would prevail in demonstrating that the term “adapted to mine transactions,” as recited by independent claims 1 and 24, is indefinite. Instead, we agree with Patent Owner that the ’372 patent’s Specification discloses that “mining processors can have different kinds of mining circuitry such as a CPU, GPU, FPGA, and ASIC” (Prelim. Resp. 34 (citing Ex. 1001, 17:12–15)), and one of ordinary skill in the art would understand “that some types of mining circuitry, such as a CPU, are designed to run software programs; other types, such as an ASIC (application-specific integrated circuit), comprise hardware logic to perform specific functions, though there may also be software programmable elements.” *Id.* (citing Ex. 2101 ¶ 72). Here, we credit Dr. You’s declaration testimony that

a mining processor has at least some programmable mining circuitry (e.g., a CPU), then it is adapted to mine transactions because it is programmed to run mining algorithms, e.g., programmed to run Bitcoin’s cryptographic hashing algorithms. In the case of a mining processor with hardware-implemented logic (e.g., an ASIC), it is adapted to mine transactions because it is designed to run mining algorithms.

Ex. 2101 ¶ 72. We find Dr. You’s opinion to be supported by the ’372 patent’s Specification which discloses that “[m]ining requires computational effort in the form of CPU cycles (CPU=central processing unit or central processor) to run a cryptographic hashing algorithm associated with the particular blockchain protocol.” Ex. 1001, 13:49–52.

We determine that one of ordinary skill in the art would have reasonably understood the meaning of the term “adapted to mine transactions.”

3. *Conclusion for Ground 1*

Accordingly, on this record, Petitioner has failed to show that it is more likely than not that it would prevail in showing that independent claims 1 and 24, and claims 2–23 and 25–41, which depend therefrom, are unpatentable under 35 U.S.C. § 112(b) as indefinite.

*D. Asserted Lack of Written Description
(Ground 2: Claims 1–41)*

Petitioner asserts that the ’372 patent lacks written description support for the term “blockchain mining devices” as it appears in claims 1 and 24. Pet. 27–29. Patent Owner disputes Petitioner’s assertions. Prelim. Resp. 38–42 (citing Ex. 2101).

1. *Applicable Law*

Under 35 U.S.C. § 112(a), “[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same” To satisfy the written description requirement, the disclosure must reasonably convey to skilled artisans that the patentee possessed the claimed invention as of the filing date. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). The requirement under § 112 does not demand that the specification recite the claimed invention verbatim. *Id.* at 1352 (citations

omitted). The “claimed subject matter need not be described *in haec verba* in the specification in order for that specification to satisfy the description requirement.” *In re Smith*, 481 F.2d 910, 914 (CCPA 1973). “Original claims are part of the original specification and in many cases will satisfy the written description requirement.” *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1297 (Fed. Cir. 2017).

2. *The Parties’ Arguments*

Independent claim 1 recites “blockchain mining devices connected to the generator.” Ex. 1001, 19:56–58. Independent claim 24 recites “operating blockchain mining devices located at the facility, respectively, using the electricity.” *Id.* at 21:52–54.

Petitioner asserts that the ’372 patent does not provide written description support for the limitation “blockchain mining devices” because although “the singular form of the term ‘blockchain mining device’ appears in the [S]pecification 45 times,” the Specification does not use the plural form once. Pet. 28–29 (citing Ex. 1024 ¶ 71). Petitioner argues that the term “blockchain mining devices” was not part of the original claims, but instead added during prosecution. Pet. 27–28; *see also id.* at 27 (citing Ex. 1002, 210, 213 (arguing that “during prosecution, to overcome prior art rejection, independent claims 1 and 24 were amended to recite a plurality of ‘blockchain mining devices’ as opposed to ‘a blockchain mining device’”)). Therefore, Petitioner contends that one of ordinary skill in the art “would have concluded that the inventor never envisioned and did not have possession of a system containing a plurality of blockchain mining devices, as of the filing date of the ’372 patent.” *Id.* at 28 (citing Ex. 1024 ¶ 71).

Patent Owner responds that the term “blockchain mining devices” is supported by the written description of the ’372 patent. Prelim. Resp. 38–42. Patent Owner contends that the Specification describes “blockchain mining device” as a “mining device.” *Id.* at 38. With reference to Figure 4, Patent Owner points out that the ’372 patent refers to both “blockchain mining device 12” and “mining device 12.” *Id.* at 38–39 (citing Ex. 1001, 17:23–25, 16:32–33). Patent Owner also points out that, the Abstract, which was part of the original Specification, discloses that “[p]ortable mining devices may be hooked up to a casinghead gas supply at a remote, isolated oil facility.” *Id.* at 39 fn.3 (citing Ex. 1002, 642); *id.* (quoting Ex. 1001, Abstract). According to Patent Owner, one of ordinary skill in the art would understand that reference to “‘portable mining devices’ in the Abstract refers to plural blockchain mining devices 12 when these are mounted in a ‘portable enclosure 98 suitable for transporting blockchain mining device 12 between locations’ such as a skid, trailer or container.” *Id.* (citing Ex. 1001, 15:41–46; Ex. 2101 ¶ 80). In addition, Patent Owner argues that the ’372 patent’s reference to what “*each* blockchain mining device 12” may comprise, would suggest to one of ordinary skill in the art that “as disclosed in the Abstract, more than one blockchain mining device 12 is contemplated.” *Id.* at 40 (citing Ex. 2101 ¶ 82).

We agree with Patent Owner. Petitioner does not sufficiently explain why one of ordinary skill in the art would not understand the Abstract’s disclosure of “portable mining devices” to be the same as “blockchain mining devices” given that the ’372 patent refers to “blockchain mining device” and “mining device,” alternatively. *See, e.g.*, Ex. 1001, 17:23–25,

16:32–33. In addition, the ’372 patent discloses that “blockchain mining device 12” may be “skid or trailer-mounted” and “located in a portable enclosure 98, for example [in] an intermodal transport container.” Ex. 1001, 15:43–47. Rather than explaining why one of ordinary skill in the art would fail to recognize “portable mining devices” as being the same as “blockchain mining devices,” Petitioner simply concludes without explaining that these terms are different. *See* Pet. 28 fn. 8 (arguing that the term ““portable mining devices’ . . . is a different term” than “blockchain mining devices”).

Accordingly, on this record, Petitioner has failed to show that it is more likely than not that it would prevail in showing that independent claims 1 and 24, and claims 2–23 and 25–41, which depend therefrom, are unpatentable under 35 U.S.C. § 112(a) for lack of written description.

E. Asserted Indefiniteness under 35 U.S.C. § 112(f)
(Ground 3: Claims 10–16, 23, and 35–41)

Petitioner asserts that claim term “controller” is a means-plus-function term under 35 U.S.C. § 112(f). Pet. 29–37. And, because the “controller” invokes § 112(f), the term is indefinite. *Id.* at 37–46. Petitioner also relies on the declaration testimony of Mr. Kasdorf to support its arguments. *Id.* (citing Ex. 1024). Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 42–61. To support its position, Patent Owner relies on the declaration testimony of Dr. You. *Id.* (citing Ex. 2101).

1. Applicable Law

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and

such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112(f).

“[U]se of the word ‘means’ in a claim element creates a rebuttable presumption that § 112, para. 6 applies.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347–49 (Fed. Cir. 2015) (en banc) (addressing the pre-AIA version of § 112(f), which is identical to the AIA version). Conversely, “the failure to use the word ‘means’ also creates a rebuttable presumption . . . that § 112, para. 6 does not apply.” *Id.* at 1348. “[T]he essential inquiry is not merely the presence or absence of the word ‘means’ but whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Id.* If not, then § 112(f) applies. *Id.*

If § 112(f) applies, then the first step in construing the claim limitation is to define the function recited in the claim. *See In re Aoyama*, 656 F.3d 1293, 1296–97 (Fed. Cir. 2011). “Where there are multiple claimed functions . . . the patentee must disclose adequate corresponding structure to perform all of the claimed functions.” *Media Rights Techs., Inc. v. Cap. One Financial Corp.*, 800 F.3d 1366, 1374 (Fed. Cir. 2015).

The second step is to look at the patent specification and identify the corresponding structure for the claimed function(s). *See Aoyama*, 656 F.3d at 1297. This requires that “the specification or prosecution history clearly links or associates that structure to the function recited in the claim.” *Id.*

We then construe the claim limitation to cover the corresponding structure, and equivalents thereof. *See* 35 U.S.C. § 112(f).

2. *The Parties' Arguments*

Petitioner asserts that claims 10–16, 23, and 41 recite limitations “relate[d] to various functions . . . performed by ‘the controller.’” Pet. 29. Petitioner asserts that “controller,” as “expressly or impliedly” recited in “claims 10–16, 23, and 41, is a means-plus-function” term under 35 U.S.C. § 112(f). Pet. 31–37. And, because the term is governed by § 112(f), “the specification must disclose sufficient structure that performs all claimed functions, otherwise the term is indefinite.” *Id.* at 37 (citing *Williamson*, 792 F.3d at 1351–52). We reproduce claims 10–16, 23, and 41 below, with emphasis added to the four instances where the term “controller” appears.

Claim 10 recites “[t]he system of claim 1 in which the system is configured to modulate a power load level exerted by the blockchain mining devices on the generator, by increasing or decreasing the mining activity of the mining processor.” Ex. 1001, 20:44–47.

Claim 11 recites “[t]he system of claim 10 in which the system is configured to modulate the power load level by selecting one or more actions from a group of actions consisting of increasing or decreasing a maximum number of mining processors that are engaged in mining transactions.” Ex. 1001, 20:48–53.

Claim 12 recites “[t]he system of claim 10 in which the system is configured to modulate the power load level in response to variations in a production rate of combustible gas from the hydrocarbon production well, storage, or processing facility.” Ex. 1001, 20:54–57.

Claim 13 recites:

The system of claim 10 in which:

a production rate of combustible gas from the hydrocarbon production well, storage, or processing facility varies between a daily minimum production rate and a daily maximum production rate; and

while the production rate is above the daily minimum production rate, the **controller** is set to limit the power load level to at or below a power level producible by the generator when the production rate is at the daily minimum production rate.

Ex. 1001, 20:59–67 (emphasis added).

Claim 14 recites “[t]he system of claim 13 in which the **controller** is set to divert to a load bank excess electricity produced by the generator.”

Ex. 1001, 21:1–3 (emphasis added).

Claim 15 recites:

The system of claim 10 in which:

a production rate of combustible gas from the hydrocarbon production well, storage, or processing facility varies between a daily minimum production rate and a daily maximum production rate;

the **controller** is set to limit the power load level to above a power level producible by the generator when the production rate is at the daily minimum production rate; and

a backup source, selected from a group consisting of fuel or electricity, is connected make up a shortfall in fuel or electricity, respectively, required to supply the blockchain mining devices with the power load level.

Ex. 1001, 21:3–16 (emphasis added).

Claim 16 recites “[t]he system of claim 1 in which a **controller** is connected to operate a cooling system to maintain the blockchain mining

devices within a predetermined operating range of temperature.” Ex. 1001, 21:18–21 (emphasis added).

Claim 23 recites:

The system of claim 22 further comprising a valve connected upstream of the generator to receive the continuous flow of gas from the source of combustible gas, and selectively supply the continuous flow of gas to the generator, the combustible gas disposal device, or both the generator and the combustible gas disposal device, to selectively divert the continuous flow of gas to the combustible gas disposal device, the generator, or both the generator and the combustible gas disposal device, respectively.

Ex. 1001, 21:39–47.

Claim 41 recites “[t]he method of claim 40 in which the power load level is limited to above a power level produced by the generator when the production rate is at the daily maximum production rate.” Ex. 1001, 23:29–32.

Petitioner first argues that one of ordinary skill in the art “would not have understood ‘controller’ to have a sufficiently definite structural meaning as used in the claims.” *Id.* at 32 (citing Ex. 1024 ¶¶ 75–76).

Petitioner contends that the term

“controller” is used as a black box in the context of the patent and lacks further definition. “Controller” could just as easily be substituted with “system,” “device,” or “control module,” without altering the meaning or scope of the claim terms. The black-box recitation of “controller” is the only element disclosed to perform a variety of functions just as if “means” had been used.

Id. at 33 (citing *Williamson*, 792 F.3d at 1350). According to Petitioner, “[i]n the context of the ’372 [p]atent, ‘controller’ could potentially have

many meanings as the invention spans a variety of technical arts, and the ‘controller’ is claimed to potentially perform both electrical and mechanical functions.” *Id.* (citing Ex. 1024 ¶ 75). Petitioner further argues that the ’372 patent’s “[S]pecification fails to define ‘controller’ as either a specific structure or a class of structures and describes its operation only by restating the functions it is claimed to perform.” *Id.* at 36 (citing Ex. 1001, 3:13–16, 3:18–20, 3:23–25, 3:29–34, 3:43–46, 4:22–25, 17:25–29, 17:47–55, 17:56–18:15, 18:21–27, 18:40–43, 18:55–61; Ex 1024 ¶¶ 75–76).

Patent Owner responds by arguing that claims 10–12, 23, and 35–41 do not even recite the term “controller,” and as such, are not “written in the means plus function format that would require some “identified structure for performing the functions.” Prelim. Resp. 54. And, to the extent claims 13–16 recite a “controller,” Patent Owner argues that the term “‘controller’ is not a nonce word” and one of ordinary skill in the art would recognize “controller,” as it appears in the ’372 patent, to “have an established meaning in the pertinent art.” *Id.* at 50.

The lack of the word “means” in a claim element creates a rebuttable presumption that § 112(f) does not apply. *Williamson*, 792 F.3d at 1348. “When a claim term lacks the word ‘means,’ the presumption can be overcome and § 112[(f)] will apply if the challenger demonstrates that the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’” *Id.* at 1349 (citation omitted). “One way to demonstrate that a claim limitation fails to recite sufficiently definite structure is to show that, although not employing the word ‘means,’ the claim limitation uses a similar

‘nonce word that can operate as a substitute for ‘means’ in the context of § 112 [(f)].’” *MTD Products, Inc. v. Iancu*, 933 F.3d 1336, 1341 (Fed. Cir. 2019) (quoting *Williamson*, 792 F.3d at 1350).

Petitioner asserts that the ’372 patent’s recitation of “controller” should be recognized as a nonce word because it “could just as easily be substituted with ‘system,’ ‘device,’ or ‘control module,’ without altering the meaning or scope of the claim terms.” Pet. 33. From this, Petitioner concludes that claims that recite “controller,” either expressly or impliedly, are to be governed by § 112(f). *Id.* at 33–37. However, based on the current record, we agree with Patent Owner that Petitioner has not adequately established that the term “controller” has been recognized as a nonce word, i.e., a “generic term[]” that “reflect[s] nothing more than [a] verbal construct[that] may be used in a claim in a manner that is tantamount to using the word ‘means,’” because it “typically do[es] not connote sufficiently definite structure.”” *MTD Products*, 933 F.3d at 1341 (internal citation omitted). Instead, we agree with Patent Owner that there is adequate evidence on the current record to establish that the term “controller,” regardless of whether recited expressly or impliedly, is not a “nonce” word, and was reasonably well understood by persons of ordinary skill in the art to refer to a structure or class of structures.

Petitioner argues that one of ordinary skill in the art would not have understood “controller” to have a sufficiently definite structural meaning as used in the claims based on several dictionary definitions. Pet. 32. According to Petitioner, “some definitions of ‘controller’ use the term to mean a black box for performing any controlling function.” *Id.* at 32–33

(citing Ex. 1026⁶, 3 (“defining controller as ‘[a] **signal, circuit, device, or system** which controls any given mechanism, function, process, or piece of equipment”); Ex. 1027⁷, 4 (“defining controller as ‘[a] **device** that regulates the state of a system’, or ‘[a] **functional unit** in a computer system that controls one or more units of the peripheral equipment”))). However, we agree with Patent Owner that “Petitioner’s own evidence demonstrates that ‘controller’ connotes a class of structures to” one of ordinary skill in the art. Prelim. Resp. 44.

Here, as Patent Owner points out, although Wiley defines “controller” as “[a] signal, circuit, device, or system which controls any given mechanism, function, process, or piece of equipment” (Ex. 1026, 3), Wiley also defines “controller” to mean “[a] circuit, mechanism, device, or system, which monitors one or more variables, and automatically makes the necessary adjustments in order to maintain operation within the specified parameter.” *Id.* We credit Dr. You’s declaration testimony that one of ordinary skill in the would recognize this definition to describe “a typical industrial process controller which is a known class of devices that monitor and adjust process parameters.” Prelim. Resp. 44 (citing Ex. 2101 ¶ 87). We find Dr. You’s opinion to be supported by the ’372 patent’s Specification which discloses that “controller 86 may be connected to at least a thermistor 90 (temperature sensor) within the mining device 12, to allow the controller

⁶ Kaplan, Steven. (2004). Wiley Electrical and Electronics Engineering Dictionary (“Wiley”).

⁷ The IEEE Standard Dictionary of Electrical and Electronics Terms (6th ed) (1996) (“IEEE Dictionary”).

86 to control the ventilation and chilling loads within the enclosure 98.” Ex. 1001, 17:3–6.

We also credit Dr. You’s opinion that

[t]his definition is more relevant to the ’372 patent than the most generic definition cited by Petitioner because the claimed controller is described in the claims and specification as monitoring variables (e.g., daily gas production rate in claim 15 or temperature in claim 16) and making adjustments (e.g., limiting power load level in claim 15, operating a cooling system in claim 16) to maintain operation within the specified parameters.

Ex. 2101 ¶ 87 (citing Ex. 1001, 17:1–6, 17:61–64, claims 13–16). Patent Owner also directs our attention to the ’372 patent’s disclosure of a “remotely accessible PLC (programmable logic controller) as an exemplary controller,” and, relying on the declaration testimony of Dr. You, asserts that “PLCs are a known class of structures commonly used to monitor and adjust parameters in industrial applications.” Prelim. Resp. 44–45 (citing Ex. 2101 ¶ 88).

Patent Owner also argues that although the IEEE Dictionary defines a “controller” broadly as “[a] device that regulates the state of a system” (Prelim. Resp. 47 (citing Pet. 33 (citing Ex. 1027, 4))), Patent Owner points out that Petitioner’s proffered definition omits the remaining portion of the definition, “which reads in full: ‘[a] device that regulates the state of a system by comparing a signal from a sensor located in the system with a predetermined value and adjusting its output to achieve the predetermined value.’” *Id.* (citing Ex. 1027, 4). Relying again on the declaration testimony of Dr. You, Patent Owner argues that “[t]his full definition is consistent with

the claimed controller and describes a known class of structures, that of industrial process controllers.” *Id.* (citing Ex. 2101 ¶ 89). We agree with Patent Owner, and in doing so, credit the declaration testimony of Dr. You, who opines that the relevant dictionary definitions demonstrate that one of ordinary skill in the art would understand “the claimed controllers as a class of structures (industrial process controllers) that monitor variables and make adjustments to maintain desired operating parameters.” *Id.* at 48 (citing Ex. 2101 ¶ 91); *cf.* Ex. 1001, 17:3–6 (“The controller 86 may be connected to at least a thermistor 90 (temperature sensor) within the mining device 12, to allow the controller 86 to control the ventilation and chilling loads within the enclosure 98.”).

We also agree with Patent Owner that the Petition fails to sufficiently establish that “controller,” as it appears in the claims 13–16 of the ’372 patent, is a nonce word that could “easily be substituted with ‘system,’ ‘device,’ or ‘control module,’” as Petitioner suggests. Pet. 33. Patent Owner directs our attention to several “court decisions [that] have found that ‘controller’ is structural.” Prelim. Resp. 51. To support its position, Patent Owner argues that

[i]n IPR2015-01803, the Board determined that “controller” in the limitation “a controller to enable data transmission between the data storage units and the computer unit” did not invoke 35 U.S.C. § 112, ¶ 6, stating that “we are persuaded by Patent Owner that ‘controller’ is not a ‘nonce’ word like ‘module.’” *Amazon.com, Inc. v. AC Technologies S.A.*, IPR2015-01803, Paper 10 at 9–10 (PTAB March 8, 2016). The Board credited evidence that in the pertinent art “controller” was a specific class of structures. *Id.*

Id.

On this record, we are persuaded by Patent Owner that “controller” is not a “nonce” word; but rather is understood by a person of ordinary skill in the art to have sufficiently definite meaning as the name for structure. *cf. Williamson*, 792 F.3d at 1349 (“The standard is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.”). Accordingly, on this record, Petitioner has failed to show that it is more likely than not that it would prevail in showing that any of claims 10–16, 23, and 41 are indefinite under 35 U.S.C. § 112(f).

F. Discretion Under 35 U.S.C. § 324(a)

Because we deny the Petition on the merits, we do not reach this issue.

IV. CONCLUSION

Based on the present record, we conclude that the information presented in the Petition does not establish that it is more likely than not that Petitioner will prevail in showing that claims 1–41 of the ’372 patent are unpatentable based on any ground presented in the Petition. Accordingly, we do not institute a post-grant review of claims 1–41 of the ’372 patent.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied; and

FURTHER ORDERED that the requested post-grant review is not instituted with respect to claims 1–41 of the ’372 patent.

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FOR PETITIONER:

John Phillips
Jia Zhu
FISH & RICHARDSON P.C.
phillips@fr.com
jzhu@fr.com

FOR PATENT OWNER:

James M. Heintz
Clayton Thompson
DLA PIPER LLP (US)
jim.heintz@us.dlapiper.com
clayton.thompson@us.dlapiper.com

Robert Anton Nissen
NISSEN PATENT LAW
robbie@nissenlaw.ca