

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIBERTY ENERGY, INC. AND LIBERTY OILFIELD SERVICES LLC,
Petitioners,

v.

U.S. WELL SERVICES, LLC,
Patent Owner.

IPR2025-00031
U.S. Patent No. 10,655,435 B2

PATENT OWNER'S SUR-REPLY BRIEF

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35 U.S.C. § 103.....	<i>passim</i>
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PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	U.S. Pat. Pub. No. 2017/0226842, Gregoire Omont et al., "Monitoring Health of Additive Systems" ("Omont842"), PCT application filed July 31, 2015, published Aug. 10, 2017.
2002	<i>Threshold</i> , Merriam-Webster.com, https://www.merriam-webster.com/dictionary/threshold (last visited Jan. 22, 2025).
2003	<i>Threshold</i> , CollinsDictionary.com, https://www.collinsdictionary.com/us/dictionary/english-word/threshold (last visited Jan. 30, 2025).
2004	<i>Threshold</i> , Britannica.com, https://www.britannica.com/dictionary/threshold (last visited Jan. 29, 2025).
2005	<i>Rate</i> , Merriam-Webster.com, https://www.merriam-webster.com/dictionary/rate (last visited Jan. 22, 2025).
2006	Patent Case Scheduling Order, <i>U.S. Well Services, LLC, et al. v. Liberty Energy, Inc., et al.</i> , 4:2-cv-008939-KPE (S.D. Tex.), ECF No. 30.
2007	Petitioner's Invalidity Contentions Cover Pleading, <i>U.S. Well Services, LLC, et al. v. Liberty Energy, Inc., et al.</i> , 4:2-cv-008939-KPE (S.D. Tex.).
2008	USPTO Announcement Rescinding Memo
2009	Declaration of Richard H. Quarles ISO PHV
2010	Declaration of Dr. Michael Nikolaou
2011	C.V. of Dr. Michael Nikolaou
2012	Deposition of Dr. Robert Durham

2013	<i>Acceptable</i> , CollinsDictionary.com, https://www.collinsdictionary.com/us/dictionary/english/acceptable (last visited July 27, 2025)
2014	<i>Acceptable</i> , Cambridge.org, https://dictionary.cambridge.org/us/dictionary/english/acceptable (last visited July 27, 2025)
2015	<i>Desired</i> , CollinsDictionary.com, https://www.collinsdictionary.com/us/dictionary/english/desired (last visited July 28, 2025)
2016	Memorandum And Order, Case 4:24-cv-00839 Document 111, Filed on 05/30/25 in TXSD
2017	Order Adopting Claim Construction Memorandum & Order, Case 4:24-cv-00839 Document 128, Filed 07/07/25 in TXSD

Petitioners have failed to show the challenged claims of U.S. Pat. No. 10,655,435 (the “435 Patent”) are obvious. Grounds 1, 2, and 5 fail because they rely exclusively on Norris for “detect[ing] that the first parameter is outside of an acceptable threshold,” and Norris fails to disclose or render obvious this limitation. Grounds 3 and 4 fail because neither Omont (Ground 3) nor Borgstadt (Ground 4) can plug the hole in Norris. Patent Owner therefore respectfully requests that the Board find that Petitioners have not shown by a preponderance of the evidence that any challenged claim is invalid.

I. GROUND 1, 2, AND 5: NORRIS FAILS TO DISCLOSE OR RENDER OBVIOUS THE CLAIMED “ACCEPTABLE THRESHOLD”

A. Petitioners’ Own Expert and Langewis Confirm the Objective Distinction Between Norris’s Desired Settings and the 435 Patent’s Acceptable Threshold

All challenged claims require measuring “one or more parameters” and determining whether a “first parameter” is “outside of an acceptable threshold.” *See* EX-1001, independent claims 1, 7, 13. Petitioners continue to mistake optimal economic and production outcomes (i.e., Norris’s desired settings) for operational necessities (i.e., the 435 Patent’s claimed “acceptable threshold”). This error is fatal to Grounds 1, 2, and 5.

Petitioners’ continued error is illustrated by their argument that Norris’s “desired settings” are the same as the 435 Patent’s “acceptable threshold” because

“desired” may be “deemed correct or proper; selected; required.” (Paper 25) (“Reply”), 2–3. But Petitioners ignore the example provided by their dictionary definition: “The chef added stock until the sauce reached the *desired consistency*,” which demonstrates that “desired” is a user preference and not an operational necessity requirement. EX-2015, 1. Indeed, though Petitioners make much of the dictionary example of “desired” as user-required, it only further illustrates the distinction between a user specification (i.e. desired) and a system necessity requirement. It makes no difference whether the user “desires” or “requires” a setting—it is still a *user* preference, not a *system* requirement. The distinction is further illustrated by replacing the word “desire” with “require” in Dr. Durham’s admission of the distinction between desired performance and acceptable threshold performance as it relates to Langewis:

Q: In other words, a POSITA might desire[/*require*] a higher pump performance, but this level of performance is acceptable, right?

A: Acceptable to prevent cavitation, according to the Langewis.

Q: Even though a POSITA might desire[/*require*] a higher pump performance, right?

A: It may.

...

A: I said a POSITA may desire[/*require*] a different performance or a higher pressure.

Q: And below this minimum pressure, the pumps would be at higher risk of damage, right?

A: Yes. That's a fair statement.

EX-2012, 18:7–22. Further illustrating the distinction, a user performance requirement (i.e., desire) may be higher than an acceptable operational threshold.

Petitioners attempt to mask this distinction by cherry-picking and mischaracterizing excerpts from Dr. Nikolaou's testimony, but a closer look reveals the errors in Petitioners' analysis. Dr. Nikolaou explains that the "acceptable threshold" is "objectively acceptable for safe operation, safe for the equipment and for humans" and that "[t]he manufacturer of the pump would contribute, indeed, to explaining what conditions for the pump would be safe and what would not be safe, and that would be communicated to the operator." EX-1031, 72:4–73:18. Dr. Nikolaou further explains that "the bottom line is that whoever is responsible for ensuring safe operation would actually set these values so that they would not be exceeded," and that is an "*engineering decision*." ¹ *Id.*

This is *not* how Norris describes its "desired settings." Instead, as Petitioners and Dr. Durham admit, Norris's "desired settings" are akin to Dr. Durham's thermostat example, where, as Dr. Durham admits, the threshold is not based on

¹ All emphasis added herein.

“the system’s capabilities.” EX-2012, 42:1–5 (“Q: So if I understand the statement correctly, the thermostat is making that decision based on what the user set and not the system’s capabilities, right? A: Correct. It’s based on the threshold that it’s comparing to, not necessarily the system’s capabilities.”). Indeed, a homeowner in Dr. Durham’s thermostat example is not setting the thermostat based on an “engineering decision” that concerns the operating capabilities of the HVAC system, just as Norris’s user is not inputting “desired settings” based on engineering decisions, but instead merely on a desired system output preference.

B. The 435 Patent Specification Confirms the Claimed “Acceptable Threshold” Is an Operational Limit that Identifies Degradation and/or Failure Conditions

The 435 specification confirms the claim term “acceptable” is an operational limit representing a potential failure or degraded condition. Indeed, the claimed “acceptable threshold” is identified twice in the specification, and both instances show the claimed “acceptable threshold” is an operational limit representing a potential failure or degraded condition.

In the first instance where the specification discusses the claimed acceptable threshold, the 435 Patent explains:

In some embodiments, the method 160 also includes detecting that a first parameter of the one or more parameters is *outside of an acceptable threshold*, in which the first parameter is associated with a first pump of the plurality of pumps, and *automatically adjusting or*

turning off the first pump. In some embodiments, the method 160 also includes adjusting one or more of the other pumps in the plurality of pumps to *compensate for the first pump.* In some embodiments, the method 160 also includes *selecting the one or more of the other pumps [to compensate for the first pump]* to adjust based at least in part on the conditions of the other pumps as indicated by one or more of the one or more parameters. In one or more embodiments, the method 160 also includes determining that *the one or more parameters are indicative of a potential failure condition*; and *determining a source of the potential failure condition.* In some embodiments, the method 160 also includes *generating an alert or notification indicative of the potential failure condition* and the source. In some embodiments, the method 160 also includes logging operation data including a number of strokes and pumping hours performed by a pump of the plurality of pumps, and *determining a maintenance schedule* based at least in part on the operation data.

EX-1001, 10:4–26.

Indeed, a POSITA would have understood that the appropriate response to detection of a failing or degraded pump is to either adjust (i.e., reduce the load on) the pump or to turn the pump off entirely. *Id.*, 10:8–9 (disclosing “automatically adjusting or turning off the first pump.”); EX-2010, ¶ 82 (“A POSITA would understand that systems may continue to operate even with degraded components. For example, by reducing the workload of a degraded component and shifting the

workload to other components, overall system performance may be retained while extending the service life of the degraded component.”).

Petitioners make much of the 435 Patent's teaching of “automatically adjusting” the pump in response to detection of a pump parameter being outside of a threshold as an indication the threshold is merely a desired setting as in Norris. But in the next sentence—the significance of which Petitioners ignore—the 435 Patent explains that “the method 160 also includes adjusting one or more of the other pumps in the plurality of pumps to *compensate for the first pump.*”

EX-1001, 10:9–11. This compensation step shows the acceptable threshold is an operational limit representing a potential failure or degraded condition, because there would otherwise be no need to compensate (i.e., supply an equivalent pump output) for the first pump if its output was not being reduced due to its failing or degraded state. Stated differently, a POSITA would understand (1) the compensation step as indicating the load on the first pump is reduced, and (2) the reduction is not based on a mere desired pump output rate as in Norris because there would otherwise be no need to compensate for the first pump by adjusting other pump output rates.

The 435 Patent also discloses additional actions that are all consistent with detection of a failure or degraded condition. *Id.*, 10:11–26 (teaching “selecting the one or more other pumps to adjust *[to compensate for the failed/degraded first*

pump] based ... on the conditions of other pumps”, “determining that the one or more parameters are *indicative of a potential failure condition*”, “determining a *source of the potential failure condition*”, “*generating an alert or notification* indicative of the potential failure condition”, “*logging operation data*”, and “*determining a maintenance schedule*”).

In the second instance where the specification discusses the claimed acceptable threshold, the 435 Patent explains:

The method 180 may further include detecting that a measurement associated with a first pump of the plurality of pumps is *outside of an acceptable threshold*, and *automatically taking the first pump offline* in response to the detection. The method may further include adjusting one or more of the other pumps in the plurality of pumps to *compensate* for taking the first pump offline.

Id., 11:11–18.

A POSITA would have understood that “taking the first pump offline” and “adjusting ... pumps ... to compensate for taking the first pump offline” are in response to a failed or degraded pump because there would otherwise be no need to take the pump offline *and* compensate for the offline pump by using other pumps as discussed above.

Accordingly, Norris’s “desired settings” are not the same as the claimed “acceptable threshold,” and a POSITA would not have found Norris’s “desired

settings” to be an obvious variant of the claimed “acceptable threshold.” Therefore, Grounds 1, 2, and 5 do not establish that the claims are invalid. And, as explained next, this deficiency in Norris also pervades Grounds 3 and 4.

II. GROUND 3: THE COMBINATION OF NORRIS AND OMONT FAILS TO RENDER OBVIOUS THE CHALLENGED CLAIMS

At the outset, Petitioners argue that even if Norris does not disclose the “acceptable threshold” limitation, Patent Owner has conceded that Omont does. That is a misinterpretation of the Patent Owner Response (Paper 20) (the “POR”).

As explained in the POR, Omont fails to disclose or render obvious “one or more processing devices configured to receive a first parameter from a first device of the plurality of pumps, the distribution system, or the wellhead, and transmit the first parameter to a second device of the plurality of ... pumps, the distribution system, or the wellhead.” POR at 43–56. This has been identified as limitation 1[e][i]. Petitioners assert that Patent Owner has (1) not contested that Norris discloses limitation 1[e][i], and (2) has not contested that Omont discloses limitation 1[e][ii], which, as discussed above, requires “detect[ing] that the first parameter is outside of an acceptable threshold.”

But Petitioners’ argument is faulty because claims must be read *as a whole*. *In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983) (holding that, under Section 103, the Board cannot “dissect a claim” and ignore the specific limitations because

a “claim must be read as a whole”). Here, limitation 1[e][ii] cannot be simply divorced from limitation 1[e][i] because the “first parameter” of the former is the same “first parameter” of the latter. As such, because Omont does not disclose limitation 1[e][i], it follows that Omont also does not disclose the “first parameter” of limitation 1[e][ii]. As the Federal Circuit has repeatedly held, it is impermissible to “read [a claim] limitation in isolation, divorced from the claim as a whole.”

Univ. of Strathclyde v. Clear-Vu Lighting LLC, 17 F.4th 155, 162 (Fed. Cir. 2021); *see ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998) (“Obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention.”).

As explained next, Omont fails to teach limitation 1[e][i] and therefore also does not disclose limitation 1[e][ii]. And because, as explained above, Norris also fails to disclose limitation 1[e][ii], Ground 3 does not render the claims invalid.

A. Omont Fails to Teach Limitation 1[e][i]

As explained in the POR, the Examiner reviewed and considered the same Omont disclosures during examination of the 435 Patent. POR, 44–45. As Patent Owner also identified, the Examiner correctly determined that the Omont disclosures did not disclose or render obvious the subsequently modified limitation “transmit[ting] the first parameter” from a first device “to a second device,” each

of which being “of the plurality of pumps, the distribution system, or the wellhead” (limitation 1[e][i]). POR, 44–46; EX-2010, ¶ 95.

Petitioners rely on the same Omont disclosures as allegedly disclosing the exact same limitation that the Examiner already found was not present in Omont. Petitioners suggest that the Examiner did not consider Omont's control hardware when allowing the challenged claims, but Petitioners have not met their “especially difficult” burden of showing Examiner error for at least four reasons. *Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1323 (Fed. Cir. 1999) (“The “presumption of validity under 35 U.S.C. § 282 carries with it a ***presumption that the Examiner did his duty and knew what claims he was allowing.*** ... [T]he challenger's “burden is ***especially difficult when the prior art was before the PTO examiner during prosecution of the application.***”) (internal citations omitted).

First, in allowing the challenged claims, the Examiner stated:

[t]he ***prior art of record [i.e., Omont842 containing the Omont disclosures]*** fails to disclose or suggest transmitting a first parameter from a first device of the plurality of pumps, a distribution system, or wellhead to a second of a plurality of pumps, a distribution system, or wellhead as recited in the claimed combination and method.

EX-1002, 970. It is well established law that deference is due to the Examiner, who is ***presumed under the law “to have properly done [her] job,”*** and who is “assumed to have some ***expertise in interpreting the references [e.g., interpreting***

Omont842's control hardware] and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents.” *Shire LLC v. Amneal Pharms., LLC*, 802 F.3d 1301, 1307 (Fed. Cir. 2015). Petitioners thus have an even higher burden of showing Examiner error, which Petitioners have not met here.

Second, the Examiner previously issued a Section 103 obviousness rejection based on Omont842, which shows she properly considered it. During prosecution, the Examiner ultimately found that Omont842 fails to disclose or render obvious the challenged claims. EX-2010, ¶ 97. Specifically, the Examiner previously objected to a dependent claim 21 for containing ***allowable subject matter***. EX-1002, 998–99. Claim 21 included the following limitations:

21. (New) The method of claim 7, further comprising:

transmitting the first parameter from a first device of the plurality of pumps, the distribution system, or the wellhead to a second device of the plurality of the plurality of pumps, the distribution system, or the wellhead;

generating the automated instructions at the second device; and

automatically adjusting one or more functions of the second devices based on the automated instructions.

435 Patent File History, 1317 (EX-1002)

Id., 1317. Stated differently, the Examiner, who is “presumed to have properly done [her] job” and “assumed to have some expertise in interpreting the references [including Omont842’s control hardware] and to be familiar from their work with the level of skill in the art,” identified the allowable subject matter in then-claim 21. *Shire*, 802 F.3d at 1307. In response, Patent Owner amended the independent claims to include the allowable subject matter in the above dependent claim 21. The Examiner, in response, wrote that this “amendment to claims 1, 7, and 14 overcome[s] the previously presented 35 USC 103 rejection thereof,” including Omont842. *Id.*, 968; *see id.*, 999.

The Examiner’s reasons for allowance correctly show that Omont does not disclose or render obvious claim limitation 1[e][i]. EX-2010, ¶ 98. In allowing the claims, the Examiner noted that the prior art—including Omont842—failed to disclose or suggest this limitation.

Regarding claims 1, 7, and 14: The prior art of record fails to disclose or suggest transmitting a first parameter from a first device of a plurality of pumps, a distribution system, or wellhead to a second of a plurality of pumps, a distribution system, or wellhead as recited in the claimed combination and method.

EX-1002, 970. Thus, the Examiner clearly carefully considered the exact same Omont disclosures—via Omont842—during prosecution as evidenced by (1) issuing a Section 103 obviousness rejection based on Omont842; (2) identifying allowable subject matter that would overcome Omont842 if re-written in independent form; and (3) determining the Omont842 disclosures, which included Omont's control hardware—fail to “disclose or suggest” the challenged claims.

Third, and contrary to Petitioners' assertion that the Examiner erred, the Examiner did consider Omont842's control hardware in her initial § 103 rejection in view of Omont842 as part of the June 7, 2019 office action. There, the Examiner issued a § 103 obviousness rejection of claim 11's limitation requiring “determining that the one or more parameters are indicative of a potential failure condition,” citing, *inter alia*, Omont842, ¶ 67. EX-1002, 1136. In citing Omont ¶ 67 in her rejection, the Examiner objectively documented her awareness and understanding of the sensor/control hardware interface as explained in Omont, ¶ 67:

The coded instructions 432 stored in the local memory 414 may further include program instructions or computer program code that, when executed by the processor 412, ***facilitate one or more instances of the control hardware 400 to record the information generated by the sensors 204, 214, 222, such as for determining efficiency, accuracy, and/or other operational aspects of one or more***

components of the additive system 200 based, for example, on the information generated by the sensors 204, 214, 222. For example, the coded instructions 432 stored in the local memory 414 may also include program instructions or computer program code that, when executed by the processor 412, *facilitate one or more instances of the control hardware 400 to determine remaining functional life of one or more components* of the additive system 200, *determine remaining operational time until failure* of one or more components of the additive system 200, and/or *determine health of one or more components* of the additive system 200 based on the information generated by the sensors 204, 214, 222.

EX-2001, ¶ 67. Contrary to Petitioners' argument, the Examiner *did consider* Omont842's control hardware and its interface with sensors, as shown by her claim 11 obviousness rejection. *Id.* As the record shows, the Examiner considered Omont842's control hardware and rightly determined that Omont842—with the same disclosures as Omont—did not disclose or render obvious the 435 Patent claims. *See Shire*, 802 F.3d at 1307 (“Defendants’ primary reference is ... listed on the face of the patents-in-suit and therefore *the examiner is presumed to have considered it.*”).

Petitioners have not demonstrated that the Examiner erred in analyzing the Omont disclosures concerning limitation 1[e][i]. The Examiner correctly found that Omont did not disclose or render obvious that limitation, and, absent evidence

of clear error, which Petitioners have not shown, the Board should not second-guess the Examiner's conclusions in this proceeding. For all the reasons explained in the POR, Omont does not disclose limitation 1[e][i], and subsequently cannot disclose limitation [1][e][ii].

B. Petitioners' Example 3B Fails to Disclose or Render Obvious "transmit[ting] the first parameter" from a first device "to a second device," each of which being "of the plurality of the pumps, the distribution system, or the wellhead."

Petitioners' Example 3B cannot meet the claim requirement of "transmit[ting] the first parameter" from a first device "to a second device," each of which being "of the plurality of the pumps, the distribution system, or the wellhead." As an initial matter, nowhere in the Petition do Petitioners expressly define the claimed "second device" as Omont's control hardware. Instead, Petitioners attempt to play both sides of the coin by defining the claimed "second device" as Omont's subsystems to meet the "of the plurality of the pumps, the distribution system, or the wellhead" limitation while sneaking in Omont's control hardware to meet the "transmit[ting] the first parameter" from a first device "to a second device" limitation. Petitioners cannot have it both ways. And whether the subsystems or control hardware are mapped to the claimed "second device," both mappings fail.

First, Petitioners expressly defined Omont's sensors as the claimed "first device" and Omont's subsystems as the claimed "second device[s]". Pet., 49 ("1[e][i] – Omont's sensors are a "first device" and Omont's subsystems are "second device[s]."). Petitioners presumably mapped Omont's sensors and subsystems as the claimed first and second devices, respectively, to also meet the claim requirement that the first device and second devices must both be "of the plurality of the pumps, the distribution system, or the wellhead." But this mapping cannot meet the claim requirement of "transmit[ting] the first parameter" from a first device "to a second device" for the reasons discussed in the POR, including because "the first device (i.e., Omont's sensors) is part of the second device (i.e., Omont's subsystem)." *See* POR, 56–65. Patent Owner explained that "[t]he Petition's mapping improperly maps claimed different devices to non-separated structures." *Id.* Patent Owner also explained that "none of Omont's disclosures describe, let alone mention, Omont's sensors 204, 214, and 222 (the claimed first device) transmitting data to Omont's subsystems 212 and 220," and that "[w]ithout doing so, Omont cannot render obvious the claim limitation "transmitting a first

parameter² ... from a first device to a second device.” *Id.* Thus, Petitioners’ mapping of Omont’s subsystems as the claimed “second device” fails.

Second, mapping Omont’s control hardware as the claimed “second device” fails because Petitioners have not shown the control hardware is “of the plurality of the pumps, the distribution system, or the wellhead.” For example, Petitioners assert that “[s]ubsystems [not control hardware] are “of the plurality of pumps, the distribution system, or the wellhead” and cite supporting examples. Pet., 50. But Petitioners rely on Omont’s ““control hardware’ that ‘receive[s] information generated by the sensors’” to meet the “transmit[ing] the first parameter” from a first device “to a second device” limitation. *Id.*, 50. Petitioners must show that “control hardware” is “of the plurality of the pumps, the distribution system, or the wellhead” to meet the claim requirement, but fail to do so. Thus, mapping Omont’s control hardware as the claimed “second device” fails.

C. Petitioners’ Example 3A Fails Because Omont’s SCM Device 306 Cannot Be the Claimed “second device.”

Petitioners’ Example 3A fails because Omont’s SCM Device 306 cannot be the claimed “second device” for the reasons discussed in the POR. *See* POR, 47–

² And by failing to disclose limitation 1[e][i], Omont fails to disclose the same “first parameter” of limitation [1][e][ii].

55. In their Reply, Petitioners failed to address Patent Owner's associated arguments—supported by the Examiner's claim allowance (*id.*, 54)—or the Board's conclusion (ID, 39–40) that SCM Device 306 cannot be the claimed “second device.” The failure of Example 3A to disclose limitation 1[e][i] is thus not reasonably in dispute.

III. PETITIONERS HAVE FAILED TO SHOW THAT THE PRIOR ART IN GROUND 4 RENDERS THE CLAIMS OBVIOUS

Ground 4 presents the same problem for Petitioners as Ground 3. Once again, Petitioners allege that Norris discloses limitation 1[e][i] and Borgstadt discloses limitation 1[e][ii]. But Patent Owner showed why Borgstadt does not disclose limitation 1[e][i], POR at 65–77, and therefore, as with Omont discussed above, Borgstadt also does not disclose the “first parameter” of limitation 1[e][ii]. As such, neither Norris nor Borgstadt discloses limitation [1][e][ii], and Ground 4 fails. *Univ. of Strathclyde*, 17 F.4th at 162 (holding it is impermissible to “read [a claim] limitation in isolation, divorced from the claim as a whole.”); *ATD Corp.*, 159 F.3d at 546.

A. Petitioners Misconstrue the Claims and Impermissibly Read Out and/or Render Meaningless Multiple Claim Limitations

Petitioners now argue that the “second device” is not required to perform the claimed “generate automated control instructions” limitation (the “Generating Step”) nor the claimed “automatically adjust one or more aspects of the second

device based on the control instructions” limitation (the “Adjusting Step”). Reply, 21–22. This belated argument has no merit.

First, a plain reading of claims 1 and 13 show Petitioners’ error. Claims 1 and 13 require the Generating Step “*at the second device.*” The claims state that the generating must occur “*at*” as opposed to “for execution at” the second device. Petitioners allege that “one or more processing devices” perform the “generat[ing]” such that “generat[ing]” is not required to occur at the “second device.” Reply, 22. Even assuming that the claim requires processing devices to perform the Generating Step, claim 1 plainly requires that such processing devices are found at the “second device” for claim 1. *Id.*, cl. 1 (“generate automated instructions *at the second device*”). Further, Claims 7 and 13 do not recite “processing devices” and the plain language of both claims requires that “generating” occur “at the second device.” EX-1001, cl. 7 (“generating the automated instructions *at the second device*”); cl. 13 (“generating automated instructions *at the second device*”). Thus, the “second device” must perform the Generating Step.

Second, Petitioners’ position that the “second device” is not required to perform the Generating Step nor the Adjusting Step effectively reads one or more claim limitations out of the claims, as illustrated by Petitioners’ alleged invalidity read discussed below. As an initial matter, Petitioners continue to deny mixing and matching different parameters to the claimed “first parameter.” Though Patent

Owner's illustrations below discuss efficiency as the "first parameter," Petitioners' invalidity theory fails no matter whether Petitioners map the claimed "first parameter" to flow rate, pressure, or efficiency.

According to Petitioners' theory, Borgstadt's "pump modulator" compares "a pump's efficiency with a 'threshold efficiency value' in diagnostics." Pet., 67 (citing EX-1006, ¶ 33); EX-1006, ¶ 33 ([T]he pump modulator compares the current efficiency value of the particular pump unit 110 with a threshold efficiency value."). Petitioners appear to be relying on this comparison by the pump modulator—whether directly or indirectly through the pump modulator signaling the pump controller—to generate automated control instructions at the "second device." Pet., 67 ("Borgstadt teaches generating automated control instructions at the second device based on the first parameter. *See, e.g.*, EX1006, [0010], [0022]-[0026], Fig. 1 (illustrating generation and communication of automated control instructions at each of master controller, pump modulator, and local pump controllers).").

But this reading effectively reads out or renders unnecessary the "transmit the first parameter to the second device" limitation. If adjustments are being made because of "automated control instructions" originating from the pump modulator as Petitioners allege, there would be no need for the "transmit the first parameter to a second device" limitation. Petitioners' reading out and/or rendering meaningless

of the “transmit the first parameter to the second device” limitation is improper. *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) (holding claims must be “interpreted with an eye toward giving effect to all terms in the claim”). Stated differently, if the threshold comparison is not performed at the “second device,” there would be no need to transmit the “first parameter” to the “second device,” thus rendering the “transmit the first parameter to the second device” limitation to have no meaning. *Id.* Hence, Petitioners’ alleged theory of the pump modulator performing the claimed threshold comparison fails because it reads out—or at least renders meaningless—the “transmit the first parameter to the second device” limitation. *Id.* And by Petitioners’ own allegation, the threshold comparison is allegedly occurring in the pump modulator and not in the pump controller (i.e., the alleged “second device”). Petitioners’ modulator threshold theory thus fails.

Petitioners’ theory of measured parameters being transmitted to the “pump controller” via path 112 provides another illustration of Petitioners’ error. According to Petitioners’ theory, “Borgstadt Figure 1 illustrates measured parameters transmitted from “pump unit[s]” to “pump controller[s] [via path 112].” Pet., 66 (citing EX-1006, Fig. 1). Petitioners further allege:

Borgstadt’s local pump controllers are “second devices” that
“generate[s] automated control instructions at the second device”

based on receiving a first parameter. Borgstadt teaches that local pump controllers “may use different measured parameters ... to adjust the performance of the pump unit.” EX1006, [0024], Fig. 1. The “pump controller 108 may use a measured parameter ... to adjust the driving signal 116 sent to the pump unit.” *Id.*

Pet., 69. But Petitioners’ theory reads out and/or renders meaningless the claimed threshold comparison limitation at the second device, which Petitioners allege occurs in the pump modulator. Stated differently, if the pump controller is receiving measured parameters via path 112 and making adjustments based on receipt of the first parameter via path 112, there would be no need for the pump modulator to perform the threshold comparison step. Thus, Petitioners’ pump controller adjustment theory fails because it reads out—or at least renders meaningless—the threshold comparison step, including the “detecting that the first parameter is outside of an acceptable threshold” limitation. Indeed, Petitioners point to no equivalent threshold comparison step occurring within the “pump controller.” Further, as explained in the POR, adjustments made by the pump controller under Petitioners’ theory are being made at the pump (i.e., not at the claimed “second device”), which does not meet the “automatically adjust one or more aspects of the second device” limitation. POR, 72–73.

Accordingly, Petitioners have failed to show that Borgstadt discloses limitation 1[e][i] and by extension limitation 1[e][ii]. And because Norris does not

disclose limitation 1[e][i] for the reasons already discussed, Ground 4 fails to invalidate the claims.

IV. CONCLUSION

The Board should find that Petitioners failed to show the challenged claims are obvious by a preponderance of the evidence.

Dated: January 8, 2026

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IPR2025-00031
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Patent Owner's Sur-Reply

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that this response complies with the word-count limitations of 37 C.F.R. § 42.24(c)(4). This response contains 4,790 words as calculated by the word-count feature of Microsoft Word, the word-processing program used to create it.

The undersigned further certifies that this Petition complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and typestyle requirements of 37 C.F.R. § 42.6(a)(2)(iii). This petition has been prepared in a proportionally spaced typeface using Microsoft Word in Times New Roman 14-point font.

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CERTIFICATE OF SERVICE

I hereby certify that on this 8th day of January, 2026, I caused to be served a true and correct copy of the foregoing “**Patent Owner's Sur-Reply Brief**” by electronic mail on the following:

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