

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

MASIMO CORPORATION,
Patent Owner.

IPR2024-00290
Patent 8,190,223 B2

Before RICHARD H. MARSCHALL, DAVID COTTA, and
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

MARSCHALL, *Administrative Patent Judge*.

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

Petitioner Apple Inc. filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–4, 6, 11–22, 27, 28, 32, 34, 36, 37, and 42–44 of U.S. Patent No. 8,190,223 B2 (Ex. 1001, “the ’223 patent”). See Pet. 1. Patent Owner Masimo Corporation filed a Preliminary Response (Paper 6, “Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 7), and Patent Owner filed a Preliminary Sur-reply (Paper 8).

We have authority to determine whether to institute an *inter partes* review. See 35 U.S.C. § 314; 37 C.F.R. § 42.4(a) (2022). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information in the petition and the preliminary response “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon consideration of the evidence and arguments in the record, we institute *inter partes* review of the ’223 patent on all challenges set forth in the Petition.

BACKGROUND

A. Real Parties-in-Interest and Related Matters

Petitioner identifies itself as its only real party-in-interest. Pet. 88. Patent Owner identifies itself as its only real party-in-interest. Paper 4, 2.

The parties identify *Apple Inc. v. Masimo Corp.*, No. 1-22-cv-01378 (D. Del.) (“Delaware Litigation”), involving the ’223 patent, as a related matter. Pet. 88; Paper 4, 1. Patent Owner also identifies as related matters the following *inter partes* review proceedings involving patents asserted by Patent Owner in the Delaware Litigation:

Petitioner	Case No.	Patent No.
Apple Inc.	IPR2024-00296	10,984,911
Apple Inc.	IPR2024-00243	10,722,159
Apple Inc.	IPR2024-00244	10,722,159
Apple Inc.	IPR2024-00293	10,736,507
Apple Inc.	IPR2024-00294	10,736,507
Apple Inc.	IPR2024-00241	10,687,743
Apple Inc.	IPR2024-00242	10,687,743

Paper 4, 1–2.

B. The '223 Patent

The '223 patent relates to a “multi-parameter patient monitor” capable of displaying multiple patient parameters in various display modes.

Ex. 1001, code (57). The '223 patent describes obtaining patient measurements from signals sent by optical sensors. *Id.* at 1:55–57. In one embodiment, the displays include mode indicators providing caregivers easily identifiable visual cues, “such as LED’s, text, icons, or other indicia” indicating which parameter is being displayed. *Id.* at 4:62–66. In addition, “the display may shift, may be parameter color-coded, or the like to further ensure quick comprehension of which measured parameter is the displayed parameter.” *Id.* at 4:66–5:2.

We reproduce the '223 patent’s Figure 11B below.

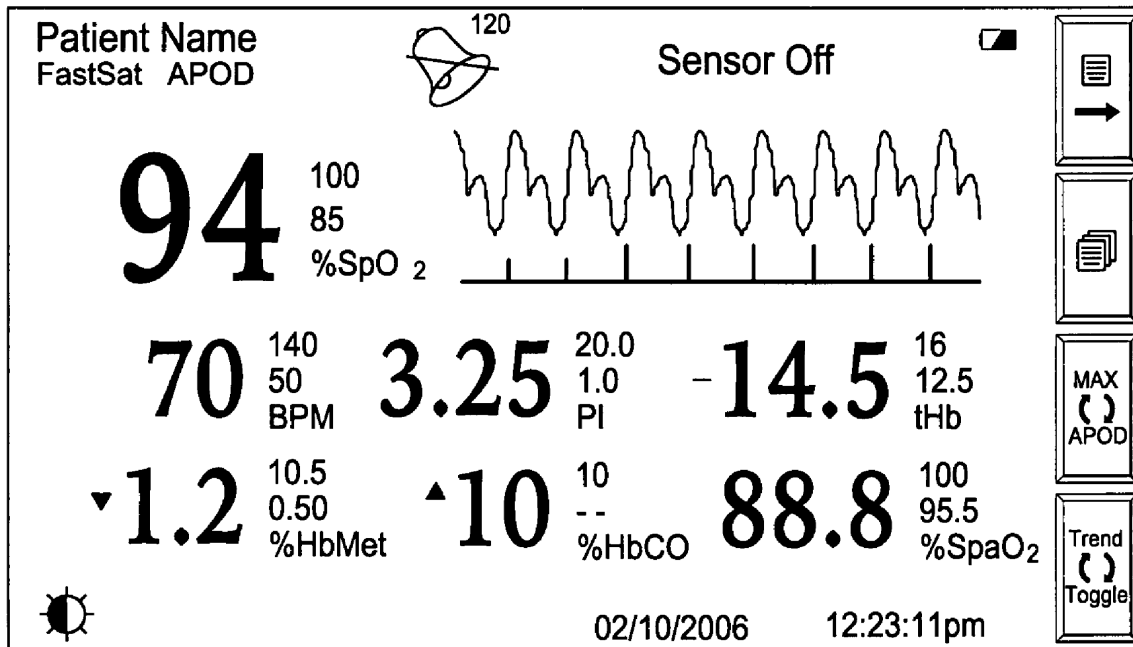


FIG. 11B

Figure 11B illustrates a display screen of the patient monitor described in the '223 patent. Ex. 1001, 4:39–43. The display shown in Figure 11B includes measured values for “a plurality of parameter data,” including the ability to show trending or prediction indicators for various parameters. *Id.* at 17:20–22, 17:42–47.

The '223 patent states that, in some embodiments, the patient monitor may employ “audio or visual alarms that alert the caregiver to particular one or more of worsening parameters” or indicate the severity of the condition or change in condition. Ex. 1001, 5:9–17. For example, “the patient monitor may automatically change display modes when a particular parameter crosses one or more thresholds.” *Id.* at 5:17–19. In addition, the '223 patent indicates that “an alarming parameter may automatically be displayed, may be emphasized, flashed, colored, combinations of the same or the like to

draw a user’s attention to the alarming parameter.” *Id.* at 14:12–15. The ’223 patent also describes enlarging or reorganizing parameter data based on the severity of the measurement, or changing the location of the alarming value on the display “so as to be readily noticeable and its display values readily ascertainable.” *Id.* at 19:24–39.

C. Challenged Claims

As noted above, Petitioner challenges claims 1–4, 6, 11–22, 27, 28, 32, 34, 36, 37, and 42–44¹ of the ’223 patent, with independent claims 1, 13, 15, 18, 21, 27, and 28 among the claims challenged. Pet. 1; Ex. 1001, claims 1–244 Claim 1, which illustrates the challenged subject matter, is reproduced below. *See* Pet. vi.

1. [1pre] A patient monitor capable of measuring at least two physiological parameters,

[1a] the patient monitor comprising a display capable of displaying a measured value of a first physiological parameter of body tissue of a monitored patient in a first display area or displaying a measured value of a second physiological parameter of the body tissue in a second display area where the first display area and the second display area comprise at least some common display area capable of displaying information,

[1b] wherein in the common display area, the display of one of the measured values of the first or second physiological parameter is replaced with the other of the measured values based on an occurrence of an event,

[1c] the event being the measured value of one of the first or second physiological parameters approaching one or more threshold values indicative of a worsening state of a patient.

¹ The claims were subject to *ex parte* reexamination, and a reexamination certificate issued on April 24, 2013. *See* Ex. 1001, 39. We address the claims as amended after reexamination. *See id.* at 40–41.

Ex. 1001, claim 1 (using bracketed additions used by Petitioner).

D. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 1):

Claim(s) Challenged	35 U.S.C. §	Basis/Reference(s)
1–4, 6, 11–18, 20–22	103(a) ²	Naghavi, ³ Hochstedler, ⁴ Burnes ⁵
19, 27, 28, 32, 34, 36, 37, 42, 43	103(a)	Naghavi, Hochstedler, Burnes, Hayashi ⁶
42–44	103(a)	Naghavi, Hochstedler, Burnes, Hayashi, Mortz ⁷

Petitioner filed a Declaration of Dr. Andrew Cockburn (Ex. 1003) with the Petition. Patent Owner filed a Declaration of Dr. R. James Duckworth (Ex. 2002) with its Preliminary Response.

ANALYSIS

A. Discretionary Denial in View of Parallel District Court Litigation

Patent Owner argues that we should deny institution under *Fintiv* based on the Delaware Litigation. Prelim. Resp. 16–25; *see Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 11–12 (PTAB Mar. 20, 2020) (precedential) (holding that PTAB has discretion to deny institution in

² Because the '223 patent issued from an application filed before March 16, 2013, the effective date of the amendment to 35 U.S.C. § 103 enacted by the Leahy-Smith America Invents Act (AIA), we apply the pre-AIA version of this section. *See* Ex, 1001, code (22); AIA, Pub. L. No. 112–29, § 3(n)(1), 125 Stat. 284, 293 (2011).

³ US 2002/0184055 A1, published December 5, 2002 (Ex. 1005, “Naghavi”).

⁴ US 6,707,476 B1, issued March 16, 2004 (Ex. 1004, “Hochstedler”).

⁵ US 2006/0064020 A1, published March 23, 2006 (Ex. 1006, “Burnes”).

⁶ US 6,151,518, issued November 21, 2000 (Ex. 1007, “Hayashi”).

⁷ US 6,385,471 B1, issued May 7, 2002 (Ex. 1009, “Mortz”).

certain circumstances where there are parallel district court proceedings). Our analysis under *Fintiv* is guided by the USPTO Director’s Memorandum issued on June 21, 2022, titled “Interim Procedure for Discretionary Denials in AIA Post Grant Proceedings with Parallel District Court Litigation” (“Director’s Memo”).⁸ Pursuant to the Director’s Memo, we “will not discretionarily deny institution . . . where a petitioner presents a [*Sotera*] stipulation.” Director’s Memo, 3 (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A)).

Because Petitioner has offered a stipulation like that in *Sotera*, i.e., a stipulation to “not pursue for the instituted claims, in [the Delaware Litigation], the same grounds as in the IPR2024-00290 petition or any grounds that could reasonably have been raised in that petition” (Ex. 1078, 1), we do not discretionarily deny institution under *Fintiv*. Patent Owner argues that Petitioner’s stipulation “does not carry the benefits underlying the Director’s Guidance” because it was filed “only after the parties and the court conducted extensive and costly fact and expert discovery, and fully briefed and argued dispositive motions.” Paper 8, 2. We find this argument unpersuasive because the Director’s Guidance does not afford us discretion to discount a *Sotera* stipulation based on how far a parallel district court litigation has progressed when the stipulation was made. Director’s Memo, 7 (explaining, without qualification, that “the PTAB will not discretionarily deny institution of an IPR or PGR in view of

⁸ Available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf.

parallel district court litigation where a petitioner stipulates not to pursue in a parallel district court proceeding the same grounds as in the petition or any grounds that could have reasonably been raised in the petition”).

Accordingly, we decline Patent Owner’s request that we deny institution based on the Delaware Litigation.

B. Legal Standards

In an *inter partes* review, “the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). If Petitioner meets its burden as to one challenged claim, we generally institute as to all challenged claims because, “[w]hen instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60 (2018); 37 C.F.R. § 42.108(a).

A claim is unpatentable as obvious under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called

secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

C. Level of Ordinary Skill in the Art

In determining the level of skill in the art, we consider the problems encountered in the art, the art’s solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986).

Petitioner refers to Dr. Kenny’s declaration testimony for the definition of a person of ordinary skill in the art (“POSITA”). *See* Pet. 9 n.2 (citing Ex. 1003 ¶¶ 22). Dr. Kenny testifies:

In my opinion, one of ordinary skill in the art relating to, and at the time of, the invention of the ’223 Patent would have had at least a bachelor’s degree in computer science, computer engineering, electrical engineering, biomedical engineering, human-computer interaction, or a related field, and would have had at least two years of relevant work experience in the design and development of graphical user interfaces (GUIs), human-computer interfaces, or equivalents thereof. Less work experience may be compensated by a higher level of education and vice versa.

Ex. 1003 ¶ 22.

Patent Owner provides its own proposed definition of a POSITA that differs from Petitioner’s proposal:

A POSITA at the time of the ’223 Patent would be a person with a Bachelor of Science degree in an academic discipline emphasizing the design of software or user interfaces, in combination with training or at least one to two years of related work experience with the design of user interfaces. EX2002, ¶37. Alternatively, the person could have also had a Master of Science degree in a relevant academic discipline with less than a

year of related work experience in the same discipline. *Id.* A POSITA would also include persons with a working knowledge of physiological monitoring technologies and/or optical sensors used in physiological monitoring technologies. *Id.*, ¶38. The person would have had a Bachelor of Science degree in an academic discipline emphasizing the design of electrical, computer, software, or optical technologies, in combination with training or at least one to two years of related work experience with capture and processing of data or information, or designing and using optical sensors or systems, including but not limited to physiological monitoring technologies. *Id.* Alternatively, the person also could have had a Master of Science degree in a relevant academic discipline with less than a year of related work experience in the same discipline. *Id.*

Prelim. Resp. 6–7. Patent Owner notes that the parties’ proposals differ and that Petitioner “does not contend that the level of skill in the art affects the patentability of the challenged claims.” *Id.* at 7 (citing Ex. 1003 ¶¶ 22–23; Ex. 2002 ¶ 40). Patent Owner argues that its proposal “is more accurate,” but states that for the reasons provided in Patent Owner’s Preliminary Response, Patent Owner “agrees that the claims’ patentability is confirmed regardless of the level of skill.” *Id.* at 7 (citing Ex. 2002 ¶ 40).

The main differences between the parties’ definitions of the POSITA appear to be Patent Owner’s inclusion of a number of alternative ways one could qualify as a POSITA, including a Master’s degree combined with less experience, although Petitioner also acknowledges that “[l]ess work experience may be compensated by a higher level of education.” Ex. 1003 ¶ 22. On the present record, we do not deem the differences in the proposals as material given their substantive overlap. In general, we find the additional specificity and alternatives in Patent Owner’s definition helpful. In addition, Patent Owner’s definition appears to be consistent with the level

of skill in the art reflected in the prior art of record and the disclosure of the '223 patent. Accordingly, for purposes of this Decision, we adopt Patent Owner's proposed definition of the person of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) ("the prior art itself [may] reflect[] an appropriate level" as evidence of the ordinary level of skill in the art) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

We note that we would reach the same outcome in this Decision under either definition of the POSITA. If the parties continue to propose differing levels of ordinary skill in the art during trial, they should explain the differences and their relevance to the patentability issues in this case, and state whether any issue in the case turns on those differences.

D. Claim Construction

We construe each claim "using the same claim construction standard that would be used to construe the claim in a civil action" under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b). Under this standard, claim terms are generally given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc) ("We have frequently stated that the words of a claim 'are generally given their ordinary and customary meaning.'" (citations omitted)). "The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner asserts that “no claim terms need to be construed to resolve issues of controversy in the present Petition.” Pet. 3 (citing *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011)). Patent Owner asserts that we “should give the claims their ordinary and customary meaning” and that the claims “require no construction.” Prelim. Resp. 15 (noting that this is the same position it took in the Delaware Litigation). Patent Owner then asserts that Petitioner proposed constructions in the Delaware Litigation for several claim terms, but that Patent Owner asserts here, as it does in the Delaware Litigation, that those terms do not require construction. *Id.* at 15–16.

We determine that no terms require express construction at this stage. During trial, to the extent the parties seek to read a claim limitation in a manner to encompass or avoid certain prior art, and the other party disagrees with that reading of the limitation (i.e., the parties do not merely disagree as to an interpretation of the prior art), the parties should set forth their proposed constructions in a separate section addressing the claim construction issues.

E. Obviousness Based on Naghavi, Hochstedler, and Burnes

Petitioner argues that the combination of Naghavi, Hochstedler, and Burnes renders claims 1–4, 6, 11–18, and 20–22 obvious. *See* Pet. 3–43. Patent Owner raises several arguments against this challenge. *See* Prelim. Resp. 25–50. We first provide a brief overview of the prior art, and then address the parties’ arguments.

1. Naghavi

Naghavi relates to a flexible “healthcare management system” for “managing and risk stratifying of patients.” Ex. 1005 ¶ 24. Naghavi’s

system acquires data from medical devices and sensors and displays the results on “an enhanced graphical user interface (GUI).” *Id.* ¶ 11. Figure 1, reproduced below, illustrates Naghavi’s overall system.

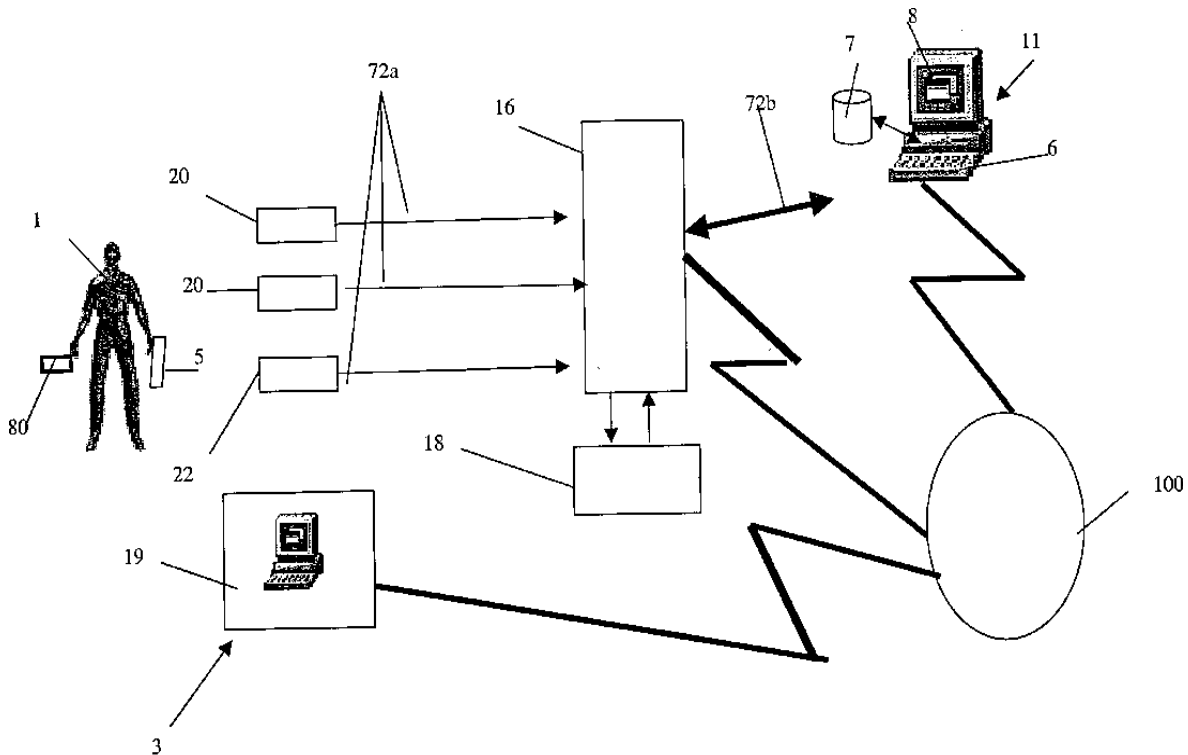


FIG. 1

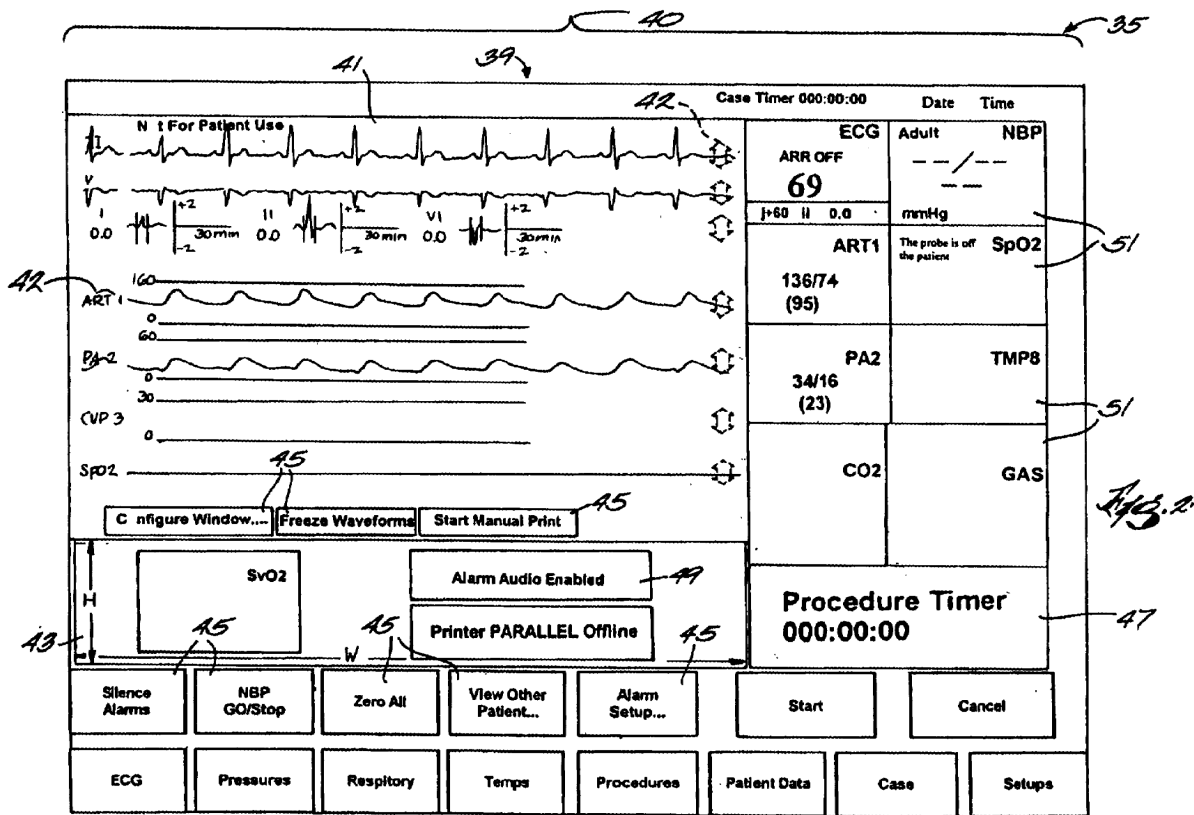
Naghavi’s Figure 1 shows a healthcare management system having “computer 11 comprising input device 6, . . . persistent data store 7 . . . , and output device 8 such as a monitor” having a display. Ex. 1005 ¶ 25. Display 8 includes a display area, and a “health-specific GUI 80” arranges icons and menus in the display area. *Id.* ¶¶ 56–57.

GUI 80 “dynamically changes and orders the display of icons, health objects, and menus according to a personal health condition and schedule.” Ex. 1005 ¶ 57. A patient “may then use GUI 80 to find those selectable items needed in a single visual display of displayed items comprising menus,

health objects, icons, and options.” *Id.* ¶ 58. The icons and health objects on the display “may change in color, shape, order, or other mutable attribute according to different time schedules and severity or degree of some of findings, e.g.,] the shape, size, color, and relative position of each icon can change according to a current health status and health plan” of the patient. *Id.* ¶ 59. Naghavi also states that “GUI 80 is interactive and dynamic, and may automatically detect changes in health status and health plan” for a patient and “automatically react and rearrange the available options to best suit the condition” of the patient. *Id.* ¶ 63.

2. Hochstedler

Hochstedler also relates to a GUI for a patient monitoring system. Ex. 1004, 1:49–55. The GUI includes components, and Hochstedler refers to the specific arrangement of components in the GUI as a “layout.” *Id.* at 1:16–19. In Hochstedler, the layout of the system changes when conditions of the system change. *Id.* at code (57). For example, a switch in the layout occurs if one of the available layouts “more closely corresponds to the currently used capabilities of the system than the current layout.” *Id.* Hochstedler’s Figure 2 is reproduced below.



Hochstedler's Figure 2 shows "an exemplary layout displayed on a monitor of the patient monitoring system" Hochstedler describes. Ex. 1004, 2:26–28. Figure 2 depicts information from sensors displayed in the GUI. *Id.* at 3:27–29.

Hochstedler monitors its system to "detect changes in the system's capabilities (e.g., an additional sensor is added) or changes in the system's environment (e.g., a switch is made from one medical procedure to another)." Ex. 1004, 1:55–60. "If an available layout more closely matches the changed system, then the system may implement an automatic change or switch of the layout or prompt the user to change the layout by presenting a selection of layout options." *Id.* at 1:63–67. In some situations, a user will be prompted to accept or reject a proposed change to the layout, or to replace

one portion of the layout within the GUI with another portion that shows the results of a different measured parameter. *Id.* at 8:30–65.

3. *Burnes*

Burnes relates to a patient monitoring system with a configurable GUI that provides summary data for multiple patients simultaneously. Ex. 1006, code (57), ¶¶ 5–6. Burnes categorizes parameter values for monitored patients “according to predefined thresholds or ranges” and a GUI “displays a summary table of categorized parameter values.” *Id.* at code (57). Burnes categorizes a parameter as “out of range” if its value “has crossed a predetermined threshold,” or as “near out of range” if “its value has come within some predetermined range or percentage of . . . the ‘out of range’ boundary.” *Id.* ¶¶ 38–40. Based on this categorization, Burnes can automatically change the GUI by sending an “[a]larm or warning messages” that “may be displayed based on summary parameter values.” *Id.* ¶ 43. In addition, Burnes describes “differentiat[ing] between categories” using “different symbols, color, font, highlighting, shading, or other formatting schemes” within its GUI. *Id.* ¶ 35. Burnes also describes using icons to indicate the overall status of the patient or parameter, such as an exclamation point for an alert indicating a need for clinical attention, a solid circle as a warning symbol, and an “OK” as a normal symbol. *Id.* ¶ 50.

4. *Claim 1*

We begin with Petitioner’s argument that independent claim 1 would have been obvious in view of Naghavi, Hochstedler, and Burnes. *See* Pet. 3–30. Petitioner contends that the references do not limit the configurations of their disclosed GUIs, “Hochstedler offers examples of GUI configurations and changes consistent with those recited by the claims, and Burnes

reinforces the obviousness of making such changes based on detected changes in patient condition, as contemplated by Naghavi.” *Id.* at 10 (citing Ex. 1003 ¶¶ 34–38; Ex. 1004, 1:54–60, 5:26–45; Ex. 1006 ¶¶ 35–40).

Petitioner argues that “it would have been obvious to replace displayed GUI icons/health objects based on “‘changes in health status,’ based on, *e.g.*, Naghavi and Burnes, *e.g.*, to display different parameter blocks or sub-layouts (based on Hochstedler) when health changes are detected.” *Id.* at 12 (citing Ex. 1003 ¶¶ 35–38; Ex. 1004, 1:54–60, 5:26–45). Petitioner also provides a number of reasons for combining the references, including (1) automatic replacement of a layout as taught by Hochstedler “advantageously allows ‘the layout of the GUI [to] change[] with the needs of users and the stage of medical treatment,’ thus helping ensure display of clinically relevant information;” (2) changing the layout based on the severity of a parameter, as taught by Naghavi and Burnes, “would provide a display that best suits the condition of the patient;” and (3) using colors or alert symbols, as taught by Burnes, would allow a parameter out of range or near out of range to be recognized, “making the GUI easier to understand.” *Id.* at 13–17 (citing Ex. 1003 ¶¶ 42–57).

For each limitation in claim 1, Petitioner points to specific portions of the references that support its position and declarant testimony addressing each limitation. *See* Pet. 17–30 (citing Ex. 1003 ¶¶ 58–82). For limitation 1a, Petitioner relies on Naghavi’s display and Hochstedler’s configurable GUI having first display areas shown in its Figure 2. *Id.* at 18–21.

Petitioner contends that a POSITA would have understood that “measured values” are displayed in each respective parameter block even though Hochstedler does not disclose measured values for each parameter, or that it

at least would have been obvious that Hochstedler was capable of displaying the measured values given the purpose of the blocks. *Id.* at 21. Petitioner next relies on Hochstedler’s replacement of sub-layouts within its GUI to show that measured values for different parameters are displayed in a common display area. *Id.* at 22–25. For example, Petitioner relies on changes to the common areas of its layout when going from Figure 2 to Figure 9 (replacing “GAS” parameter with “CO” parameter in same area) and when going from Figure 2 to Figure 13 (replacing “SvO2” parameter with “CO2” parameter in same area). *See id.* at 22–24. With the exception of the “measured value” limitation we address below, Patent Owner does not dispute that the proposed combination discloses limitation 1a, and we find Petitioner’s showing persuasive because Hochstedler discloses a display capable of displaying measured values for different parameters in a common area of the display. *See Pet.* 18–25.

For limitation 1b, Petitioner contends that in its combination, “the layout changes responsive to a change in a monitored parameter; when this occurs, the display of the measured value of one parameter is replaced with the measured value of the other parameter” as the limitation requires. *Id.* at 25–29. Petitioner relies on Hochstedler for the changing of sub-layouts in common display areas and Naghavi and Burnes for replacing the parameters based on the change in health status of a patient. *See id.* For limitation 1c, Petitioner relies on Naghavi and Burnes to show that the “event” that triggers the display change occurs when a parameter approaches a threshold value (e.g., a parameter “near out of range” in Burnes). *Id.* at 29–30.

Patent Owner argues that Petitioner fails to establish (1) that the references disclose the aspects of claim limitations 1b and 1c that require

replacing measured values based on a parameter approaching threshold values; (2) that Hochstedler discloses “measured values,” a limitation used throughout claim 1; and (3) an adequate motivation to combine the references. *See* Prelim. Resp. 25–35, 42–50. We address each argument in turn below.

a. Replacing One Measured Value with Another Measured Value Based On an Occurrence of an Event

Claim limitation 1b recites: “wherein in the common display area, the display of one of the measured values of the first or second physiological parameter is replaced with the other of the measured values based on an occurrence of an event.” Ex. 1001, claim 1. Claim limitation 1c states that the “event” referred in limitation 1b is “the measured value of one of the first or second physiological parameters approaching one or more threshold values indicative of a worsening state of a patient.” *Id.* Patent Owner refers to these limitations together as the “Replacing Limitation,” and we will follow the same approach when appropriate here. *See* Prelim. Resp. 25–26.

Patent Owner argues that the none of the references, “alone, or in combination,” disclose the Replacing Limitation. Prelim. Resp. 26 (citing Ex. 2002 ¶¶ 66–88). Patent Owner then addresses each reference and explains why each reference fails to disclose the Replacing Limitation. *See id.* at 26–35. We find these arguments generally unpersuasive, based on the current record, because Petitioner does not rely on any single reference standing alone for the Replacing Limitation and instead relies on a combination of all three references. *See* Pet. 9–17, 25–30; *In re Keller*, 642 F.2d 413, 426 (CCPA 1981) (“[O]ne cannot show non-obviousness by attacking references individually.”). For example, Patent Owner argues that Hochstedler alone does not disclose the Replacing Limitation because, even

if it replaces one parameter block with another in the same display area of its GUI (as required by limitation 1 a), it does not do so “based on one of the parameters approaching a threshold value indicating a worsening state of the patient.” Prelim. Resp. 25–31. According to Patent Owner, Hochstedler teaches replacing one parameter block with another based on a change in the system capabilities, such as a change in sensors, or a change in environment, such as a different user. *See id.* at 27–30. Even if true, however, this argument does not address Petitioner’s proposed combination, which does not rely on Hochstedler for the “event” that triggers the replacement of one measured value of a parameter for another—Petitioner relies on Naghavi and Burnes for that aspect of the Replacing Limitation. *See* Pet. 25–30.

Patent Owner also briefly argues that when Hochstedler teaches “switching from the display layout” in Figure 2 to Figure 13, it “does not ‘replace’ SvO₂ with CO₂ because CO₂ is already visible in the display” of Figure 2. Prelim. Resp. 30 (citing Ex. 2002 ¶ 76). This argument fails to undermine Petitioner’s reliance on Hochstedler for the replacement aspect of the limitation for two reasons. First, the argument does not address Petitioner’s separate reliance on Hochstedler’s replacement of the “GAS” parameter with the “CO” parameter (as opposed to CO₂) in the same area of the display, as shown when comparing the right-hand side of Figures 2 and 9, which Petitioner relies on as an independent teaching of the limitation apart from the replacement shown in Figures 2 and 13. *See* Pet. 22–23. The CO parameter does not appear in Figure 2, and Patent Owner’s argument would not seem to apply to this aspect of Petitioner’s argument. Second, Patent Owner assumes, without adequate argument or evidence, that the claims require replacing one parameter with another parameter that does not

previously appear anywhere on the display. *See* Prelim. Resp. 30–31. The claim language appears to require only replacing the measured value of one parameter with another measured value in a “common display area.” On its face, claim 1 imposes no restriction on whether or where those measured values may appear before and after the claimed replacement, so long as one of the measured values is “replaced.” *See* Ex. 1001, claim 1. To the extent Patent Owner maintains this argument during trial, it should support it with a proper claim construction argument.

Patent Owner’s argument that neither Naghavi nor Burnes discloses the Replacing Limitation also fails to address the use of the references as part of the overall combination proposed in the Petition. *See* Prelim. Resp. 31–35. For example, Patent Owner argues that Naghavi includes few details as to the changes to its GUI, while Burnes merely describes changing the status symbols of parameters, and therefore neither describes replacing one measured value of a parameter with another. *See id.* Petitioner, however, relies on Hochstedler for the specific GUI changes that show replacement of one measured value of a parameter for another, not Naghavi or Burnes. *See* Pet. 9–17, 25–30. As part of its argument addressing Naghavi, Patent Owner also contends that “Naghavi does not teach or suggest that its system monitors physiological parameters that are not displayed on the GUI” and instead Naghavi discloses all parameters on its display. Prelim. Resp. 32–33 (citing Ex. 1005, code (57), Figs. 1, 11, ¶ 58; Ex. 2002 ¶¶ 80–81). This argument, like the similar argument in the context of Hochstedler, improperly assumes that the claims require replacing a measured value of a parameter with a different measured value of another parameter that does not already appear on the display.

Patent Owner also argues that “[b]ecause none of the references teach, suggest, or render obvious the Replacing Limitation, the combination also does not disclose it or render it obvious.” Prelim. Resp. 35–36 (citing Ex. 2002 ¶ 88). While this argument pays lip service to the proposed “combination,” it improperly assumes that because none of the references, when considered in isolation, disclose the Replacing Limitation, that the resulting combination also does not disclose the limitation. *See id.* The cited declarant testimony merely repeats the statement from the Preliminary Response. *See* Ex. 2002 ¶ 88. This argument fails to address the specific combination set forth in the Petition, and does not undermine Petitioner’s showing as to this limitation because Petitioner does not rely on any reference, standing alone, as disclosing the Replacing Limitation. *See, e.g., Keller*, 642 F.2d at 426.

Based on our review of the present record, including aspects of the references that are largely undisputed at this stage, Petitioner adequately establishes that the combination of Naghavi, Hochstedler, and Burnes teaches the Replacing Limitation found in limitations 1b and 1c. *See* Pet. 9–17, 25–30.

b. Measured Value

The term “measured value” appears throughout claim 1, and first appears in limitation 1a. Ex. 1001, claim 1 (“[T]he patient monitor comprising a display capable of displaying a *measured value* of a first physiological parameter.” (emphasis added)). Patent Owner states that “[i]n the Delaware Litigation, Apple argues that the term ‘measured value’ should be construed as the ‘actual numerical value of a measurement,’” but in this proceeding Petitioner “argues that no construction is required.” Prelim.

Resp. 42 (citing Ex. 2002 ¶ 100; Ex. 2032, 16–17). Patent Owner notes that Petitioner relies on Hochstedler as displaying “measured values” but argues that Petitioner acknowledges that Hochstedler’s figures do not illustrate the values in the parameter blocks and that Petitioner adds the symbol “###” to “represent the measured numeric values.” *Id.* at 42–43 (citing Pet. 20–21, 23–24; Ex. 103 ¶ 66; Ex. 2002 ¶ 101). According to Patent Owner, this means that “Hochstedler’s figures do not display a ‘measured value’ under Apple’s proposed construction in the Delaware Litigation.” *Id.* at 43 (citing Ex. 2002 ¶ 101).

As noted above and pointed out by Patent Owner, Petitioner acknowledges Hochstedler does not disclose measured values for each parameter in its figures, and that Petitioner added symbols (“###”) to represent those measured values. *See* Pet. 21. Patent Owner’s argument stops there, and fails to address Petitioner’s argument and evidence set forth after making that concession. *See* Prelim. Resp. 42–43. Petitioner goes on to argue that “a POSITA would have understood, or at least found obvious, that the display is capable of displaying measured values . . . given the purpose of the parameter blocks (to ‘display real-time information about patient vital signs’) and given that vital signs information is often in the form of measured values.” Pet. 21 (citing Ex. 1003 ¶ 66; Ex. 1004, 1:19–23; Ex. 1006 ¶ 7). We find this argument, currently un rebutted, persuasive based on the present record. The claim requires “a display capable of displaying a measured value” and there appears to be little doubt that Hochstedler’s display is at least capable of displaying measured values of parameters or the patient monitor would have little value to users. The fact that Hochstedler’s figures do not depict actual numerical values does not, standing alone,

suggest that the Hochstedler’s display lacks the capability of displaying those values. We reach this conclusion even if we apply Petitioner’s allegedly narrower construction proposed in the Delaware Litigation.⁹ Accordingly, we determine that Petitioner adequately establishes that Hochstedler discloses the “measured value” limitation in claim 1.

c. Motivation to Combine

Patent Owner argues that a POSITA would not have been motivated to combine Naghavi, Hochstedler, and Burnes. Prelim. Resp. 43–50 (citing Ex. 2002 ¶¶ 102–116). More specifically, Patent Owner argues that (1) Petitioner relies on improper hindsight bias to combine the references and to create features the references do not disclose; (2) a POSITA would not implement Naghavi’s icons and objects into Hochstedler’s display layouts; and (3) a POSITA would not have been motivated to switch layouts when the second parameter is out of range or approaches out of range based on Burnes. *See id.*

Based on the current record, Patent Owner’s arguments do not undermine Petitioner’s showing on the motivation to combine issue. *See* Pet. 9–17 (citing Ex. 1003 34–57). The primary theme running through Patent Owner’s arguments relies on the monitoring and eventual display of

⁹ Patent Owner points to an alleged inconsistency in Petitioner’s position, but we see Petitioner’s proposed construction for “measured value” in the Delaware Litigation (“actual numerical value of a measurement”) as consistent with the ordinary meaning of “measured value.” Moreover, Patent Owner does not take a position as to the correct construction of the term and therefore does not present a dispute over the proper construction of the term. If either party asserts that the construction of “measured value” bears on any issues in this case, the party should set forth its proposed construction for the term with support from the record.

parameters that are not initially displayed. For example, Patent Owner argues that “Naghavi, Hochstedler, and Burnes do not teach, suggest, or render obvious monitoring parameters that are not displayed” and that “these references describe systems that display all the monitored parameters.” Prelim. Resp. 44 (citing Ex. 2002 ¶¶ 103–105). According to Patent Owner, “[b]ecause the systems display all the monitored parameters, a POSITA would not have been motivated to use their teachings to replace one measured value of a physiological parameter for another value of a physiological parameter.” *Id.* at 44–45 (citing Ex. 2002 ¶ 104); *see also id.* at 47 (arguing that a passage in Naghavi “does not describe adding an icon or health object to the display for a parameter that is monitored but not displayed” (citing Ex. 1005 ¶¶ 57–59; Ex. 2002 ¶ 109)), 48 (arguing that “Burnes does not describe replacing a displayed parameter with a non-displayed parameter”).¹⁰

As noted above, Patent Owner appears to assume that the claims not only require replacing the measured values of one parameter with another, but doing so using a parameter not initially displayed by the system. *See* Prelim. Resp. 30–33. Because Patent Owner does not present sufficient argument or evidence to read the claims so narrowly, we find that

¹⁰ In a related argument, Patent Owner alleges that Petitioner’s proposed combination seeks to remove parameters or hide them due to the replacement of one parameter with another. *See* Prelim. Resp. 46 (“Because all monitored parameters are displayed by both Hochstedler and Naghavi, a POSITA would not be motivated to combine Hochstedler and Naghavi to arrive at a layout that removes a monitored parameter from the display.” (citing Ex. 2002 ¶¶ 107–110)). Patent Owner cites no support in the Petition for its reading of the proposed combination to require removal or “hiding” of measured parameters. *See id.*

assumption improper, and to the extent it undergirds Patent Owner’s lack of motivation to combine argument, we find the argument unpersuasive.

In addition, Naghavi and Burnes both undermine the contention that a POSITA would not be motivated to replace a measured value of one parameter with an already-displayed measured value of another parameter. Naghavi states that

[t]he icons and health objects may change in color, shape, *order*, or other mutable attribute according to different time schedules and severity or degree of some of findings, e.g. the shape, size, color, and *relative position of each icon can change* according to a current health status and health plan of patient 1.

Ex. 1005 ¶ 59 (emphasis added); *see also id.* ¶ 63 (GUI may “automatically react and *rearrange* the available options to best suit the condition of patient 1.” (emphasis added)). Accordingly, Naghavi contemplates changing the order or relative position of *already-displayed* icons, and supports Petitioner’s position that a POSITA would have been motivated to replace parameters as claimed and taught by Hochstedler based on Naghavi. *See* Pet. 10–13 (repeatedly relying on Naghavi’s paragraph 59), 14 (citing Naghavi’s paragraph 63). Similarly, Burnes describes changing the appearance of already-displayed icons based on the severity of the parameter. *See* Ex. 1006 ¶ 35 (“values that . . . are of particular clinical concern may be formatted for display in a conspicuous manner to draw the attention of a clinician or other user”), ¶¶ 38–39 (describing formatting values for display with an “alert” symbol if it crosses a “predetermined threshold” indicating an “out of range” or reaching a “near out of range” status), Fig. 7 (depicting a table with some parameters shown with alert symbol); Pet. 10–13 (relying repeatedly on Burnes ¶¶ 38–39), 16 (citing Burnes ¶ 35).

Patent Owner acknowledges these passages in Naghavi and Burnes, but dismisses them because they do not describe adding an icon to the display for a parameter that is monitored but not displayed. *See* Prelim. Resp. 47–49. Again, Patent Owner fails to explain how the claims require display of a parameter that was previously monitored but not displayed.

Based on the foregoing and the current record, Petitioner adequately establishes that a POSITA would have been motivated to combine the references in the manner Petitioner proposes. *See* Pet. 9–17.

d. Conclusion as to Claim 1

Based on our review of the current record, Petitioner adequately establishes that the combination of Naghavi, Hochstedler, and Burnes discloses all of the limitations of claim 1 and that a POSITA would have been motivated to combine the references in the manner Petitioner proposes. *See* Pet. 9–30. We have not made a final determination on any of the issues presented, and the parties are free to revisit and further clarify these issues during trial.

5. Remaining Claims

We have reviewed Petitioner’s challenges to claims 2, 3, 6, 11–17, 21, and 22. *See* Pet. 30–43. Patent Owner does not address Petitioner’s arguments and evidence as to these claims with the exception of continued reliance on its arguments as to claim 1, which we address above. *See* Prelim. Resp. 38–42 (separately addressing claims 13, 15, and 21, but relying on arguments for claim 1). Based on our review of the current record, Petitioner adequately establishes that the combination of Naghavi, Hochstedler, and Burnes discloses all of the limitations of claims 2, 3, 6, 11–17, 21, and 22.

Patent Owner raises separate arguments as to claims 4 and 18, and by extension, claim 20 that depends from claim 18. *See* Prelim. Resp. 36–38 (addressing claim 4), 40–41 (addressing claim 18). Patent Owner argues that the combination of Naghavi, Hochstedler, and Burnes fails to disclose all of the limitations of claims 4 and 18. *See id.* at 36–38 (arguing that Hochstedler discloses default settings but not default display layouts as required by claim 4), 41 (arguing that in the prior art combination, measured values are not replaced based on which parameter “is a more critical one” as required by claim 18). We view Patent Owner’s arguments and evidence as best addressed after further development of the record during trial. We institute as to claims 4, 18, and 20 because Petitioner has already met its burden as to claims 1–3, 6, 11–17, 21, and 22. *See SAS Inst*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

F. Remaining Challenges

Petitioner argues that the combination of Naghavi, Hochstedler, Burnes, and Hayashi renders claims 19, 27, 28, 32, 34, 36, 37, 42, and 43 obvious. *See* Pet. 1, 43–68. Petitioner also argues that the combination of Naghavi, Hochstedler, Burnes, Hayashi, and Mortz renders claims 42–44 obvious. *See id.* at 1, 69–75. Patent Owner appears to rely only on its previously-raised arguments and does not present any additional arguments as to these challenges. *See* Prelim. Resp. 51–55. We institute as to claims 19, 27, 28, 32, 34, 36, 37, 42, and 43 for these additional challenges because we institute review for other challenged claims. *See SAS Inst*, 138 S. Ct. at 1354, 1359–60; 37 C.F.R. § 42.108(a).

CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail with respect to at least one claim of the '223 patent challenged in the Petition. Therefore, we grant institution of *inter partes* review as to all challenged claims based on all grounds set forth in the Petition.

We remind Patent Owner that arguments in its Preliminary Response are not preserved for trial, and any argument not included in Patent Owner's Response may be deemed forfeited or waived.

ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1–4, 6, 11–22, 27, 28, 32, 34, 36, 37, and 42–44 of the '223 patent on the unpatentability grounds asserted in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

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Patent 8,190,223 B2

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