

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC.,
Petitioner,

v.

MICHIGAN MOTOR TECHNOLOGIES LLC,
Patent Owner.

IPR2020-00446
Patent 6,763,804 B2

Before NEIL T. POWELL, SCOTT B. HOWARD, and
SEAN P. O'HANLON, *Administrative Patent Judges*.

O'HANLON, *Administrative Patent Judge*.

PRELIMINARY GUIDANCE
PATENT OWNER'S MOTION TO AMEND

I. INTRODUCTION

On August 25, 2020, we instituted trial as to claims 1–20 (“the challenged claims”) of U.S. Patent No. 6,763,804 B2 (Ex. 1001, “the ’804 patent”). Paper 9. After institution, Patent Owner, Michigan Motor Technologies LLC, filed a Contingent Motion to Amend. Paper 16 (“Motion” or “MTA”). In the Motion, Patent Owner requests that, should we determine in a final written decision that original claim 1 of the ’804 patent is unpatentable, we grant its motion to amend the ’804 patent to substitute proposed claim 21 for original claim 1. MTA 1–2. Petitioner, Volkswagen Group of America, Inc., filed an Opposition to the Motion. Paper 18 (“Opposition” or “Opp.”). Petitioner submitted a second declaration of Gerald J. Micklow, Ph.D., PE, in support of the Opposition. Ex. 1034.

In the Motion, Patent Owner requested that we provide preliminary guidance concerning the Motion in accordance with the Board’s pilot program concerning motion to amend practice and procedures. MTA 1; *see also* Notice Regarding a New Pilot Program Concerning Motion to Amend Practice and Procedures in Trial Proceedings under the America Invents Act before the Patent Trial and Appeal Board, 84 Fed. Reg. 9,497 (Mar. 15, 2019) (providing a patent owner with the option to receive preliminary guidance from the Board on its motion to amend) (“Notice”). We have considered Patent Owner’s Motion and Petitioner’s Opposition.

In this Preliminary Guidance, we provide information indicating our initial, preliminary, non-binding views on whether Patent Owner has shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend in an *inter partes*

review and whether Petitioner (or the record) establishes a reasonable likelihood that the substitute claim is unpatentable. *See* 35 U.S.C. § 316(d) (2018); 37 C.F.R. § 42.121 (2019); *Lectrosonics, Inc. v Zaxcom, Inc.*, IPR2018-01129, Paper 15 (PTAB Feb. 25, 2019) (designated precedential); *see also* Notice, 84 Fed. Reg. at 9,497 (“The preliminary guidance . . . provides preliminary, non-binding guidance from the Board to the parties about the [motion to amend].”).

For purposes of this Preliminary Guidance, we focus on the proposed substitute claim, and specifically on the amendments proposed in the Motion. *See* Notice, 84 Fed. Reg. at 9,497. We do not address the patentability of the originally challenged claims. *Id.* Moreover, in formulating our preliminary views on the Motion and Opposition, we have not considered the parties’ other substantive papers on the underlying merits of Petitioner’s challenges. We emphasize that the views expressed in this Preliminary Guidance are subject to change upon consideration of the complete record, including any revision to the Motion filed by Patent Owner. Thus, this Preliminary Guidance is not binding on the Board when rendering a final written decision. *See id.* at 9,500.

II. PRELIMINARY GUIDANCE

Initially, we note that Petitioner presents arguments other than those that relate to the statutory and regulatory requirements and the patentability of the proposed substitute claim. We address each of these issues in turn.

First, Petitioner asserts that we should deny the Motion without reaching the merits because Patent Owner did not confer with the Board prior to filing the Motion. Opp. 2. In an email dated December 1, 2020, in

response to Petitioner's request to file a Motion to Strike Patent Owner's Motion to Amend, we stated that "the panel does not view [Patent Owner's] failure to request a conference with the panel prior to filing the Motion to Amend ('MTA') as sufficient to bar the right to file the MTA in this case." Ex. 3001, 1. Thus, we have already informed Petitioner that we will not entertain a motion to strike on this basis, and likewise we will not deny the Motion on this basis.

Second, Petitioner asserts that we should deny the Motion because Patent Owner "misrepresents the proposed amendments to Substitute Claim 21." Opp. 2. In particular, Petitioner asserts that Patent Owner "disguised the full scope of the amendments by not underlining all the new claim elements." *Id.* Although we agree that Patent Owner did not underline all newly added limitations, we do not view this omission as sufficient to deny the Motion in this case because we, like Petitioner, are able to determine the newly added limitations. *See* Opp. 27–28 (presenting the proposed substitute claim with underlining to show added language). We remind Patent Owner that motions to amend "must . . . show the changes clearly." 37 C.F.R. § 42.121(b)(1).

Third, Petitioner asserts that we should deny the Motion because Patent Owner "disregard[s] the Board's Rules, precedent, and guidance," by failing to specify the contingency of substitute claim 21 on a claim-by-claim basis. Opp. 2–3. We disagree that we should deny the Motion for this reason. "[A] request to substitute claims ordinarily will be treated as contingent." *Lectrosonics*, Paper 15 at 3. Moreover, Patent Owner specifies that proposed substitute claim 21 is a "substitute for claim 1, if found unpatentable." MTA 2.

Finally, Petitioner asserts that the '804 patent will expire on October 9, 2021, and argues that, because the "IPR certificate will not issue until after the '804 patent expires, . . . further amendment proceedings [are] entirely unnecessary." Opp. 3–4, 3 n.2 (emphasis omitted). We are not persuaded that we should deny the Motion for this reason. A patent owner has the right to file a motion to amend. 35 U.S.C. § 316(d)(1) ("the patent owner may file 1 motion to amend the patent"); 37 C.F.R. § 1.121(a) ("A patent owner may file one motion to amend a patent . . ."). The fact that the certificate may not issue until after the expiration of the '804 patent does not compel us to abrogate Patent Owner's right to file a motion to amend.

A. Statutory and Regulatory Requirements

For the reasons discussed below, at this stage of the proceeding and based on the current record, it appears that Patent Owner has not shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend.

1. Reasonable Number of Substitute Claims

Does Patent Owner propose a reasonable number of substitute claims? (35 U.S.C. § 316(d)(1)(B))
Yes. Patent Owner proposes one substitute claim for challenged claim 1. MTA 2–3. Petitioner does not argue otherwise. <i>See generally</i> Opp.

2. Respond to Ground of Unpatentability

Does the Motion respond to a ground of unpatentability involved in the trial? (37 C.F.R. § 42.121(a)(2)(i))

Yes. Patent Owner presents the claim amendment in an attempt to add features to distinguish proposed substitute claim 21 as patentable over the references asserted in the instituted grounds for original claims 1–20. *See* MTA 8–12. Petitioner does not argue otherwise. *See generally* Opp.

3. Scope of Amended Claims

Does the amendment seek to enlarge the scope of the claims? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))

No. Patent Owner’s amendments add narrowing limitations to proposed substitute claim 21, as compared to original claim 1. Although proposed substitute claim 21 deletes the final “wherein” clause of original claim 1, it appears that the deleted language (regarding commanding the positioning device “to open to a hold open mode” or “to [cl]ose to a hold close mode”) is added to other parts of the claim. MTA 2–3. Petitioner does not argue otherwise. *See generally* Opp.

4. New Matter

Does the amendment seek to add new subject matter? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))

Yes. On this record, Patent Owner does not appear to set forth adequate written description support in the application as filed (“the ’030 application”) for the proposed amendments in proposed substitute claim 21. Petitioner makes several arguments asserting that the proposed amendments add new matter. We address each of these arguments in turn.

detecting a control effort required to change to change a position of the positioning device

Proposed substitute claim 21 recites “detecting whether a control effort required to change a position of the positioning device has exceeded a first

limit for at least a first predetermined time period.” MTA 2.¹ Patent Owner argues that paragraph 17, originally-filed claim 1, and Figure 2 of the ’030 application provide written description support for the proposed amendment. *Id.* at 5.

Petitioner argues that this amendment adds new matter because the portions of the ’030 application asserted by Patent Owner to support the amendment “disclose *determining* if the control effort has been more positive or negative than a given limit” rather than *detecting* the same. Opp. 5. On this record, Petitioner’s argument does not appear to be persuasive.

The ’030 application appears to use “determining” and “detecting” interchangeably. *See, e.g.*, Ex. 1002, 9 (¶ 7) (“The control effort required to change to the commanded position is detected.”), 12 (¶ 17) (“[T]he controller preferably determines if the control effort has been more positive than a predetermined limit for at least a predetermined time period.”). Petitioner does not explain persuasively any difference between “detecting” a control effort and “determining” a control effort. Given that the ’030 application discloses both “detecting” and “determining” control effort, on the current record, we find this amendment supported by the ’030 application.

hold open mode and hold close mode

Proposed substitute claim 21 recites “commanding the positioning device to change to a first commanded hold open position.” MTA 2. Patent Owner argues that paragraphs 17 and 18, originally-filed claim 1, and Figure 2 of the ’030 application provide written description support for the proposed amendments. *Id.* at 5. Proposed substitute claim 21 also recites “commanding the positioning device to change to a second commanded hold close position.” *Id.* at 3. Patent Owner argues that paragraphs 22 and 23, originally-filed claim 1, and Figure 2 of the ’030 application provide written description support for the proposed amendments. *Id.* at 7. Petitioner argues that Patent Owner “did not cite anything in the disclosure that limits the hold open mode and hold close mode to a ‘position.’”

¹ In this Preliminary Guidance, we use underlining to indicate language added to original claim 1 by the proposed amendment and bracketing to indicate language deleted from original claim 1.

Opp. 6. On this record, Petitioner’s argument does not appear to be persuasive.

In arguing that the proposed amendments are supported by the ’030 application, Patent Owner relies, in part, on the originally-filed claims. *See* MTA 4 (referencing “the claims as originally filed”) (citing Ex. 1002, 18–21). Originally-filed claim 4 recites, in relevant part, “commanding the positioning device to open to a commanded position in a hold open mode.” Ex. 1002, 18. We understand this “commanded position” to be a hold open position. Originally-filed claim 8 recites, in relevant part, “commanding the positioning device to close to a commanded position in a hold close mode.” *Id.* at 19. We understand this “commanded position” to be a hold close position. Accordingly, we find that these amendments are supported by the ’030 application.

detecting the control effort to change to the hold open and close positions

Proposed substitute claim 21 recites “detecting [a] the control effort required to change to said first commanded hold open position.” MTA 2. Patent Owner argues that paragraph 18, originally-filed claim 1, and Figure 2 of the ’030 application provide written description support for the proposed amendment. *Id.* at 5. Proposed substitute claim 21 also recites “detecting the control effort required to change to said second commanded hold close position.” *Id.* at 3. Patent Owner argues that paragraph 23, originally-filed claim 1, and Figure 2 of the ’030 application provide written description support for the proposed amendment. *Id.* at 7.

Petitioner argues that the portions of the ’030 application cited by Patent Owner “do not detect a control effort required to change to a hold open or hold close position.” Opp. 7 (citing Ex. 1034 ¶ 40). On this record, this argument appears to have merit.

The ’030 application discloses determining whether the control effort has been more positive than a predetermined limit for a predetermined time period. Ex. 1002, 12 (¶ 17). This determination is depicted in step 42 of Figure 2 (*id.*), which Patent Owner maps to “detecting whether a control effort required to change a position of the positioning device has exceeded a first limit for at least a first predetermined time period” (MTA 5). If the determination is affirmative, the system initiates a hold open mode (step 44). Ex. 1002, 13 (¶¶ 17–18). The system then determines whether it has been in the hold open mode for less than a hard open *time period*

(step 46). *Id.* (¶ 18). However, the '030 application does not appear to disclose detecting the control effort required to change to the hold open position. Patent Owner does not explain adequately how the '030 application discloses this amendment.

Similarly, the '030 application discloses determining whether the control effort has been more negative than a predetermined limit for a predetermined time period. Ex. 1002, 15 (¶ 22). This determination is depicted in step 52 of Figure 2 (*id.*), which Patent Owner maps to “detecting whether the control effort has exceeded a second time limit for at least a third predetermined time period” (MTA 6). If the determination is affirmative, the system initiates a hold close mode (step 54). Ex. 1002, 15 (¶¶ 22–23). The system then determines whether it has been in the hold close mode for less than a hard close *time period* (step 56). *Id.* (¶ 23). However, the '030 application does not appear to disclose detecting the control effort required to change to the hold close position. Patent Owner does not explain adequately how the '030 application discloses this amendment.

determining whether the control effort exceeds a threshold

Proposed substitute claim 21 recites “determining whether said control effort exceeds a first threshold for a second predetermined time period.” MTA 2. Patent Owner argues that paragraph 18, originally-filed claim 1, and Figure 2 of the '030 application provide written description support for the proposed amendment. *Id.* at 6. Proposed substitute claim 21 also recites “determining whether said control effort exceeds a second threshold for a third predetermined time period.” *Id.* at 3. Patent Owner argues that paragraph 23, originally-filed claim 1, and Figure 2 of the '030 application provide written description support for the proposed amendment. *Id.* at 7.

Petitioner argues that “[t]he controller does not determine whether a control effort ‘exceeds’ a threshold[,] let alone whether a control effort exceeds a threshold for a predetermined time period.” Opp. 7 (citing Ex. 1034 ¶ 42). According to Petitioner, the “amendment changes the disclosed operation from determining whether something is *less than a time period* to determining whether something *exceeds a threshold for a time period.*” *Id.* (citing Ex. 1034 ¶ 42). On this record, this argument appears to have merit.

As discussed above, the '030 application does not appear to disclose detecting the control effort required to change to the hold open or hold close positions. *See* Ex. 1002, 12–13 (¶¶ 17–18), 15 (¶¶ 22–23). For the same reasons, the '030 application does not appear to disclose making a determination regarding such a detected control effort.

reducing the control effort

Proposed substitute claim 21 recites “reducing said control effort when said control effort exceeds said first threshold for said second predetermined time period.” MTA 3. Patent Owner argues that paragraph 20, originally-filed claim 1, and Figure 2 of the '030 application provide written description support for the proposed amendment. *Id.* at 6. Proposed substitute claim 21 also recites “reducing said control effort when said control effort exceeds said second threshold for said third predetermined time period.” *Id.* at 3. Patent Owner argues that paragraph 25, originally-filed claim 1, and Figure 2 of the '030 application provide written description support for the proposed amendment. *Id.* at 8.

Although Petitioner does not assert that these recitations introduce new matter, we address these recitations here to provide further guidance to the parties. We determine the evidence is “readily identifiable and persuasive such that the Board should take it up in the interest of supporting the integrity of the patent system, notwithstanding the adversarial nature of the proceedings.” *Hunting Titan, Inc. v. DynaEnergetics Europe GmbH*, IPR2018-00600, Paper 67 at 13 (PTAB July 6, 2020) (designated precedential).

The '030 application discloses that, at step 50, the control effort is reduced if the system has been in the hold open mode for longer than the hard open time period. Ex. 1002, 14 (¶¶ 19–20). However, the '030 application does not appear to disclose reducing the control effort based on the control effort exceeding a threshold.

Similarly, the '030 application discloses that, at step 60, the control effort is reduced if the system has been in the hold close mode for longer than the hard close time period. Ex. 1002, 15–16 (¶¶ 24–25). However, the '030 application does not appear to disclose reducing the control effort based on the control effort exceeding a threshold.

Thus, for purposes of this Preliminary Guidance and based on the current record, we find that Patent Owner does not appear to demonstrate sufficient written description support for proposed substitute claim 21.

B. Patentability

For the reasons discussed below, at this stage of the proceeding, and based on the current record,² it appears that Petitioner (or the record) has not shown a reasonable likelihood that proposed substitute claim 21 is unpatentable.

Does the record establish a reasonable likelihood that the proposed substitute claim is unpatentable?

Indefiniteness

No. For the purposes of this Preliminary Guidance and based on the current record, Petitioner does not appear to have shown a reasonable likelihood that proposed substitute claim 21 is indefinite.

We evaluate indefiniteness in AIA proceedings, including when evaluating the indefiniteness of proposed substitute claims in an MTA, using the same indefiniteness standard as used in federal courts under *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898 (2014) and its progeny. See USPTO Memorandum, Approach to Indefiniteness under 35 U.S.C. § 112 in AIA Post-Grant Proceedings (Jan. 6, 2021) (explaining that “the Board shall . . . use the approach set forth by the Supreme Court in *Nautilus* and used by the district courts for assessing questions of indefiniteness in AIA post-grant proceedings”).³ Under *Nautilus*, “[a] patent is invalid for indefiniteness if its claims, read in light of the patent’s specification and

² We express no view on the patentability of original claims 1–20 in this Preliminary Guidance. Instead, we focus on limitations added to the original claim in Patent Owner’s Motion to Amend.

³ Available at <https://www.uspto.gov/sites/default/files/documents/IndefinitenessMemo.pdf>.

prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 572 U.S. at 898–99.

third time period

Proposed substitute claim 21 recites “detecting whether the control effort has exceeded a second limit for at least a third predetermined time period,” “in the event the control effort is detected to have exceeded the second limit for at least the third predetermined time period,” “determining whether said control effort exceeds a second threshold for a third predetermined time period,” and “reducing said control effort when said control effort exceeds said second threshold for said third predetermined time period.” MTA 3. Petitioner argues that the proposed substitute claim “is uncertain” because it is not clear whether the second recited instance of “a third predetermined time period” refers to the same time period as the previous two instances of “third predetermined time period.” Opp. 8–9 (citing Ex. 1034 ¶ 43). On this record, Petitioner’s argument does not appear to be persuasive.

Although it would be preferable for Patent Owner to use a definite article to introduce the second instance of “a third predetermined time period,” we do not determine the lack thereof to render the proposed substitute claim indefinite. Rather, because the same language is used, we understand all instances of “third predetermined time period” to refer to the same time period.

We note that Patent Owner cites to paragraph 22 of the ’030 application for support of the first recitation of “a third predetermined time period” and to paragraph 23 of the ’030 application for support of the second recitation of “a third predetermined time period.” MTA 6–7. In paragraph 22, the ’030 application discloses “a predetermined time period,” depicted in step 52 of Figure 2, during which the system “determines if the control effort has been more negative than a predetermined time limit.” In paragraph 23, the ’030 application discloses “a hard close time period,” depicted in step 56 of Figure 2, during which the system “determines whether it has called for a hold close mode.” Thus, it appears that Patent Owner intended to refer to a different time period for the second two instances of “third predetermined time period” than for the first two instances thereof. Should this be the case, we invite Patent Owner to clarify the proposed substitute claim in a revised motion to amend.

control effort

Petitioner argues that “[t]he recitation of a single ‘control effort’ throughout the entire [proposed substitute] claim also creates uncertainty about claim scope.” Opp. 8 (citing Ex. 1034 ¶ 44). Specifically, Petitioner argues that it is unclear if “control effort” recited in “reducing said control effort when said control effort exceeds said second threshold for said third predetermined time period” refers to the same control effort recited earlier in the proposed substitute claim. *Id.* at 9. “[A person of ordinary skill] would have appreciated that a control effort for opening the throttle is different than the control effort for closing the throttle.” *Id.* (citing Ex. 1034 ¶ 44). On this record, Petitioner’s argument does not appear to be persuasive.

The ’030 application discloses that the “control effort” is the “motor voltage, current, [or] duty cycle” applied to the actuator or servomotor to position the throttle plate. Ex. 1002, 8 (¶ 4). The ’030 application discloses a controller that controls an “electronic throttle servo overheat protection system by monitoring when the closing or opening control effort exceeds a threshold for a given amount of time.” *Id.* at 16 (¶ 28). Based on this disclosure, one of ordinary skill in the art would understand, and Petitioner appears to agree, that the control effort applies to opening and closing the throttle. In the context of proposed substitute claim 21, the first instance of “control effort” recites “a control effort required to change a position of the positioning device.” MTA 2. Thus, consistent with the disclosure of the ’030 application, the “change a position” recitation is not limited to changing in an opening direction or to changing in a closing direction, but rather would apply to movement in either direction. Subsequent use of “control effort” in the proposed substitute claim conditionally applies to movement in only one of these directions. For example, Patent Owner maps “detecting whether a control effort required to change a position of the positioning device has exceeded a first limit for at least a first predetermined time period” to determining if the control effort has exceeded a limit in the opening direction depicted in step 42 of Figure 2 (MTA 5 (citing Ex. 1002, 12–13 (¶ 17))) and maps “detecting whether the control effort has exceeded a second limit for at least a third predetermined time period” to determining if the control effort has exceeded a limit in the closing direction depicted in step 52 of Figure 2 (*id.* at 6 (citing Ex. 1002, 15 (¶ 22))). Thus, upon reading the proposed substitute claim in view of the ’030 application, one of ordinary skill in the

art would have been informed, with reasonable certainty, that the same control effort is referenced throughout the proposed substitute claim.

Accordingly, on this record, we are not persuaded that proposed substitute claim 21 is indefinite.

Obviousness

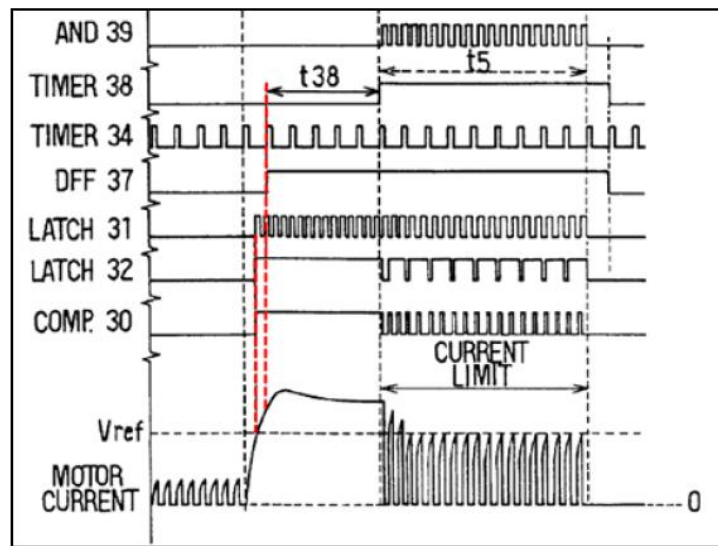
No. For purposes of this Preliminary Guidance and on the current record, Petitioner (or the record) does not appear to show a reasonable likelihood that proposed substitute claim 21 would have been obvious.

Petitioner argues that proposed substitute claim 21 would have been obvious over Itabashi. Opp. 9–25. Petitioner presents arguments based on a first embodiment depicted in Figures 2–4 and a second embodiment depicted in Figures 5–7. *Id.* Petitioner explains that “the two embodiments provide two different grounds.” *Id.* at 9.

Asserted Obviousness Over Itabashi Embodiment 1

detecting a control effort required to change a position of the positioning device

Proposed substitute claim 21 recites “detecting whether a control effort required to change a position of the positioning device has exceeded a first limit for at least a first predetermined time period.” MTA 2. Petitioner maps Itabashi’s limit level V_{ref} to the recited first limit and argues that “[t]he drive logic circuit 19 uses timer 33 to detect whether the control effort exceeds V_{ref} for predetermined time period t_{33} .” Opp. 11–12 (citing Ex. 1007, 3:64–4:1, 4:4–18, Fig. 4; Ex. 1034 ¶ 52). Petitioner defines “time period t_{33} ” as the time “between the two red dashed lines” Petitioner adds to Itabashi’s Figure 4. *Id.* at 12. This annotated figure is reproduced below:



EX1007, FIG. 4 (excerpted and annotated).

Petitioner's Figure is an excerpt of Itabashi's Figure 4, which "is a timing diagram showing a motor lock operation of the first embodiment."

Ex. 1007, 2:27–28. Petitioner's excerpt shows approximately the bottom half of Figure 4 and is annotated by Petitioner to include two red, vertical, dashed lines that Petitioner argues define "time period t33." Opp. 12.

Itabashi discloses that timer 33 is used to cycle on and off the current supplied to the motor during the motor current limiting operation.

Ex. 1007, 4:1–4. This current limiting begins after time period t38 expires. *Id.* at 7:23–43. Time period t38 begins when flip-flop 37 has a high output (*id.* at 5:8–13), which occurs on the count of timer 34 when the motor current exceeds limit level V_{ref} as indicated by comparator 30 (*id.* at 4:44–61).

The time period identified by Petitioner begins when the motor current exceeds limit V_{ref} and ends when time period t38 begins on the next count of timer 34. Opp. 12. (Petitioner's time period is the portion of the cycle of timer 34 remaining after comparator 30 indicates a high signal. *See* Ex. 1007, Fig. 4.) However, neither Petitioner nor Petitioner's declarant (*see* Ex. 1034 ¶¶ 52–53) identifies persuasively, and Itabashi does not appear to disclose, any consideration of the time period defined by Petitioner. Thus, for purposes of this Preliminary Guidance and based on the current record, we are not persuaded that Itabashi's first embodiment discloses or teaches this recitation.

Proposed substitute claim 21 recites “detecting whether the control effort has exceeded a second limit for at least a third predetermined time period.” MTA 3. Petitioner advances arguments for this recitation that are substantially the same as those discussed above. *See* Opp. 19–21. For the reasons discussed above, for purposes of this Preliminary Guidance and based on the current record, we are not persuaded that Itabashi’s first embodiment discloses or teaches this recitation.

commanding the positioning device to change

Proposed substitute claim 21 recites “in the event the control effort is detected to have exceeded the first limit for at least the first predetermined time period, commanding the positioning device to change to a first commanded hold open position.” MTA 2. Petitioner argues that, “in the event the control effort exceeds V_{ref} for at least the first predetermined time period (i.e., at the beginning of t_{38}), signals A1-A4 command the throttle to open and hold open.” Opp. 14 (citing Ex. 1007, 3:4–7, Fig. 4; Ex. 1034 ¶¶ 55–57). Petitioner interprets the proposed substitute claim as “requir[ing] only that the method commands the positioning device to move to a commanded hold open position in the event the control effort is detected to have exceeded a limit for a predetermined time period of time,” and argues “[t]hat is what Itabashi discloses.” *Id.* (citing Ex. 1034 ¶ 55).

Petitioner’s arguments are premised on Itabashi detecting the control effort in “time period t_{33} ,” which premise is, on this record, unsupported for the reasons set forth above. Thus, Petitioner’s contention that Itabashi commands the positioning device to change to a commanded hold open position based on such a detection is likewise unsupported on this record.

Furthermore, Petitioner’s assertion that “in the event the control effort exceeds V_{ref} for at least the first predetermined time period (i.e., at the beginning of t_{38}), signals A1-A4 command the throttle to open and hold open” (Opp. 14 (citing Ex. 1007, 3:4–7, Fig. 4; Ex. 1034 ¶¶ 55–57)) is unpersuasive on this record. Neither Petitioner nor Petitioner’s declarant (*see* Ex. 1034 ¶¶ 55–57) explains adequately how Itabashi alters drive command signals A1–A4 based on the control effort. Rather, Itabashi discloses that “engine control circuit 15 produces drive command signals A1–A4 to a drive control circuit 18” to “drive[] the motor 13 to rotate the throttle valve 12 to a target position.” Ex. 1007, 3:4–10. Thus, the drive command signals determine the current (control effort) that is

supplied to the motor. Petitioner does not explain adequately how Itabashi discloses the opposite, that the current supplied to the motor affects the drive command signals. Moreover, Itabashi's Figure 4 indicates that drive command signals A1–A4 are set before the time period defined by Petitioner and remain unchanged after this time period. *See* Ex. 1007, Figure 4; *see also* Ex. 1034 ¶ 55 (presenting a copy of Itabashi's Figure 4 annotated to indicate correspondence of signals A1–A4 with the beginning of time period t38).

Additionally, Petitioner implies that Itabashi's "target position" is a "hold open position" and states that the drive command signals are held "for an extended period of time." Opp. 14. However, Petitioner does not appear to provide adequate explanation for these assertions, instead presenting them in a conclusory manner. The testimony of Petitioner's declarant, which is substantially similar to Petitioner's arguments in the Opposition, likewise appears not to provide adequate support for these assertions. *See* Ex. 1034 ¶¶ 55–57. Thus, for purposes of this Preliminary Guidance and based on the current record, we are not persuaded that Itabashi's first embodiment discloses or teaches this recitation.

Proposed substitute claim 21 recites "in the event the control effort is detected to have exceeded the second limit for at least the third predetermined time period, commanding the positioning device to change to a second commanded hold close position." MTA 3. Petitioner advances arguments for this recitation that are substantially the same as those discussed above. *See* Opp. 21–22. For the reasons discussed above, for purposes of this Preliminary Guidance and based on the current record, we are not persuaded that Itabashi's first embodiment discloses or teaches this recitation.

For at least the reasons set forth above, at this stage in the proceeding and based on the current record, we find Petitioner's contentions insufficient to show a reasonable likelihood that the proposed substitute claim would have been obvious over Itabashi's first embodiment.

Asserted Obviousness Over Itabashi Embodiment 2

commanding the positioning device to change

Proposed substitute claim 21 recites "in the event the control effort is detected to have exceeded the first limit for at least the first predetermined time period, commanding the positioning device to change to a first

commanded hold open position.” MTA 2. Petitioner maps Itabashi’s high reference signal Vref(H) to the recited first limit and time period t38 to the recited first predetermined time period. Opp. 12–13. Petitioner argues that, “in the event the control effort exceeds Vref(H) for at least t38, signals A1-A4 command the throttle to open and hold open.” *Id.* at 14 (citing Ex. 1007, 3:4–7, Fig. 7; Ex. 1034 ¶¶ 97–99). Petitioner argues that this throttle position is held “for an extended period of time.” *Id.* at 14–15 (citing Ex. 1007, 6:34–39, 6:51–55, Figs. 5–7; Ex. 1034 ¶¶ 97–99).

Itabashi discloses that, if the motor current exceeds high reference signal Vref(H) for longer than time period t38, “the current limit operation is effected . . . *to limit the motor current to the low limit level.*” Ex. 1007, 9:50–54 (emphasis added). “[T]he reference signal Vref is switched to the low reference signal Vref(L)” *Id.* at 9:60–63. Thus, rather than commanding the throttle move to a hold open position, which Petitioner defines as a “motor current of 100% duty ratio” (Opp. 15), Itabashi *reduces* the motor current after time period t38 expires. *See id.* at Fig. 7 (referring to time after expiration of time period t38 as the “low limit period”). Neither Petitioner nor Petitioner’s declarant (*see* Ex. 1034 ¶¶ 97–99) addresses Itabashi’s low limit period and, thus, fails to explain persuasively how Itabashi commands the positioning device to change to a hold open position after time period t38. Thus, for purposes of this Preliminary Guidance and based on the current record, we are not persuaded that Itabashi’s second embodiment discloses or teaches this recitation.

Proposed substitute claim 21 recites “in the event the control effort is detected to have exceeded the second limit for at least the third predetermined time period, commanding the positioning device to change to a second commanded hold close position.” MTA 3. Petitioner advances arguments for this recitation that are substantially the same as those discussed above. *See* Opp. 21–22. For the reasons discussed above, for purposes of this Preliminary Guidance and based on the current record, we are not persuaded that Itabashi’s second embodiment discloses or teaches this recitation.

detecting a control effort required to change a position of the positioning device

Proposed substitute claim 21 recites “detecting [a] the control effort required to change to said first commanded hold open position.” MTA 2.

Petitioner argues that Itabashi discloses this recitation because “the engine control circuit 15 drives the motor 13 with the motor current of 100% duty ratio during the time period t1.” Opp. 15 (quoting Ex. 1007, 6:47–51).

As noted above, Petitioner argues that Itabashi commands the throttle to move to a hold open position after time period t38 expires. *See* Opp. 14–15. Itabashi discloses that during time period t1, which begins when the driver moves the accelerator pedal, a current with 100% duty is supplied to the motor. Ex. 1007, 6:46–51, 9:3–8, Fig. 6. Time period t38 begins when flip-flop 37 has a high output (*id.* at 5:8–13), which occurs on the count of timer 34 when the motor current exceeds limit level Vref(H) as indicated by comparator 30 (*id.* at 4:44–61, 8:47–51, 8:62–67). If the motor current exceeds high reference signal Vref(H) for longer than time period t38, “the current limit operation is effected . . . *to limit the motor current to the low limit level.*” Ex. 1007, 9:50–54 (emphasis added). “[T]he reference signal Vref is switched to the low reference signal Vref(L) . . .” *Id.* at 9:60–63; *see also id.* at Fig. 7. Thus, time period t1 ends when time period t38 ends. Neither Petitioner nor Petitioner’s declarant (*see* Ex. 1034 ¶ 101) explains persuasively how a 100% duty cycle is applied after expiration of time period t38. Thus, for purposes of this Preliminary Guidance and based on the current record, we are not persuaded that Itabashi’s second embodiment discloses or teaches this recitation.

Proposed substitute claim 21 recites “detecting the control effort required to change to said second commanded hold close position.” MTA 3.

Petitioner advances arguments for this recitation that are substantially the same as those discussed above. *See* Opp. 22. For the reasons discussed above, for purposes of this Preliminary Guidance and based on the current record, we are not persuaded that Itabashi’s second embodiment discloses or teaches this recitation.

For at least the reasons set forth above, at this stage in the proceeding and based on the current record, we find Petitioner’s contentions insufficient to show a reasonable likelihood that the proposed substitute claim would have been obvious over Itabashi’s second embodiment.

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