

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BROSE NORTH AMERICA, INC. AND BROSE FAHRZEUGTEILE
GMBH & CO. KG, HALLSTADT,
Petitioner,

v.

UUSI, LLC,
Patent Owner.

Case IPR2014-00417
Patent 7,579,802 B2

Before GLENN J. PERRY, HYUN J. JUNG, and JASON J. CHUNG,
Administrative Patent Judges.

CHUNG, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
Inter Partes Review
37 C.F.R. § 318(a) AND 37 C.F.R. § 42.73

I. INTRODUCTION

A. Procedural Background

Brose North America, Inc. and Brose Fahrzeugteile GmbH & Co. KG, Hallstadt (collectively “Petitioner”), filed a Corrected Petition (Paper 6, “Pet.”) to institute an inter partes review of claims 1, 6–9, and 14 of U.S. Patent No. 7,579,802 (Ex. 1005, “the ’802 patent”) pursuant to 35 U.S.C. §§ 311–319.

UUSI, LLC (“Patent Owner”) filed a Preliminary Response. Paper 10. On August 1, 2014, we instituted review as to claims 1, 6–9, and 14 of the ’802 patent and instituted trial on seven grounds of unpatentability as set forth below. Paper 11, “Dec. on Inst.”

Claims	Grounds	Reference
1, 7–9, and 14	§ 102(b)	Itoh ¹
1, 6–9, and 14	§ 103(a)	Itoh
7, 9, and 14	§ 102(b)	Kinzl ²
7, 9, and 14	§ 103(a)	Kinzl
1, 6–9, and 14	§ 103(a)	Itoh and Kinzl
7–9 and 14	§ 103(a)	Itoh and Zuckerman ³
7–9 and 14	§ 103(a)	Itoh, Kinzl, and Zuckerman

Patent Owner filed a Patent Owner’s Response (Paper 31, “PO Resp.”), and Petitioner filed a Reply (Paper 34, “Reply”).

In addition, Patent Owner filed a Motion to Exclude (Paper 41, “Motion”), seeking to exclude certain of Petitioner’s evidence in Exhibits 1054, 1055, 1057, 1058, 1063, 1065, 1066, and 2004.

¹ U.S. Patent No. 4,870,333 issued Sept. 26, 1989 (Ex. 1007, “Itoh”).

² U.S. Patent No. 4,468,596 issued Aug. 28, 1984 (Ex. 1008, “Kinzl”).

³ U.S. Patent No. 5,069,000 issued Dec. 3, 1991 (Ex. 1009, “Zuckerman”).

Petitioner opposed (Paper 44, “Opp.”) Patent Owner’s Motion to Exclude. We heard Oral Argument on April 30, 2015. Paper 48, (“Tr.”).

B. Related Matters

Petitioner indicates that the ’802 patent is being asserted in: *UUSI, LLC v. Robert Bosch LLC*, No. 2:13-cv-10444, filed in the United States District Court for the Eastern District of Michigan, on February 4, 2013; and *UUSI, LLC v. Webasto Roof Sys., Inc.*, No. 2:13-cv-11704, filed in the United States District Court for the Eastern District of Michigan, on April 15, 2013.

The ’802 patent belongs to a family of patents involved in multiple *inter partes* reviews including IPR2014-00416, IPR2014-00417, IPR2014-00648, IPR2014-00649, and IPR2014-00650.

C. Summary of Conclusions

In this Final Written Decision, issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73, we deny Patent Owner’s Motion to Exclude and we determine that Petitioner has demonstrated by a preponderance of the evidence that all claims for which trial was instituted, claims 1, 6–9, and 14, are unpatentable.

II. THE ’802 PATENT (Ex. 1005)

The ’802 patent describes a system and method for sensing an obstruction in the travel path of a moveable panel, such as a window or sunroof of a vehicle. See Ex. 1005, Abstract and Background. Figure 1 is reproduced below:

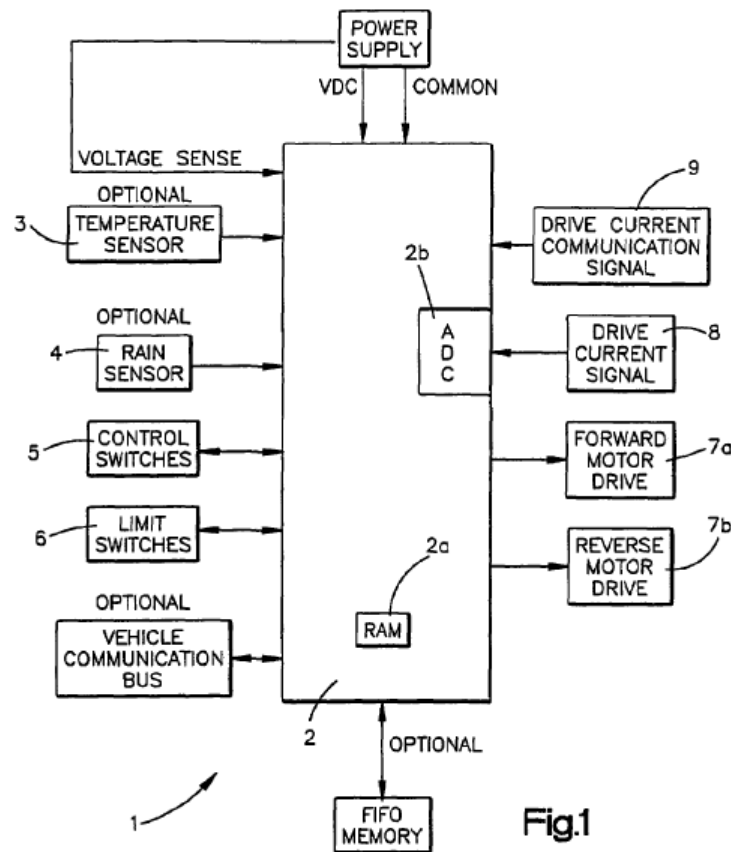


Fig.1

Figure 1 is a schematic of an exemplary actuator safety feedback control system 1. *Id.* at 2:26–27; 2:65–66. Controller 2 monitors and controls movement of a motor driven panel. *Id.* at 2:65–3:5. Motor drive outputs 7a and 7b control whether the motor (not shown in Figure 1) drives the panel in a forward or a reverse direction. *Id.* at 3:38–39. Controller 2 can sense obstacles in the panel’s path in various ways, including a paired infrared emitter and detector disposed along the panel’s path (*id.* at 3:63–4:53), a motor current monitor (*id.* at 5:53–57; 7:26–8:3), and other motor monitors (*id.* at 11:9–32).

Independent claim 7, reproduced below, is illustrative.

7. Apparatus for controlling activation of a motor for moving an object along a travel path and de-activating

the motor if an obstacle is encountered by the object comprising:

- a) a movement sensor for monitoring movement of the object as the motor moves said object along a travel path;
- b) a switch for controlling energization of the motor with an energization signal; and
- c) a controller including an interface coupled to the switch for controllably energizing the motor and said interface additionally coupling the controller to the movement sensor for monitoring signals from said movement sensor; said controller comprising a stored program that:
 - i) determines motor speed of movement from an output signal from the movement sensor;
 - ii) calculates an obstacle detect threshold based on motor speed of movement detected during a present run of said motor driven element;
 - iii) compares a value based on currently sensed motor speed of movement with the obstacle detect threshold; and
 - iv) outputs a signal from the interface to said switch for stopping the motor if the comparison based on currently sensed motor movement indicates the object has contacted an obstacle.

III. CLAIM CONSTRUCTION

As a step in our analysis, we determine the meaning of the claims for purposes of this decision. In an *inter partes* review, the proper claim construction standard in an expired⁴ patent is set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). See *In re Rambus*, 694 F.3d 42, 46 (Fed. Cir. 2012) (“[T]he Board’s review of the claims of an

⁴ The ’802 patent expired in November 2014.

expired patent is similar to that of a district court's review.”). We construe the terms below in accordance with that standard.

A. “*a sensor for measuring a parameter of a motor. . . that varies in response to a resistance to motion*” (claim 1)

Patent Owner would have us limit the term “a sensor for measuring a parameter of a motor that varies in response to a resistance to motion” (claim 1) to “a sensor that measures a magnitude of motor current.” PO Resp. 15–16. Petitioner argues the term should be construed, according to its plain meaning, to cover “any sensor that measures any motor parameter that varies as a result of resistance to motion.” Reply 1 (citing Ex. 1063 ¶ 26).

Patent Owner argues a limiting prosecution history in which Patent Owner argued that the sensor includes an “operational amplifier that amplifies a voltage across a current-measuring resistor.” PO Resp. 13–14. We do not find any clear disavowal in the prosecution history that would limit the plain and ordinary meaning of the disputed term.

Patent Owner argues support for its narrow construction in the Specification, which states “*motor current* is the primary measured parameter of immediate importance for both hard and soft obstacle detection” (emphasis added) and “motor current” denotes magnitude. *Id.* at 14 (citing Ex. 1005, 15:66–16:3, 18:35–37). The Specification of the ’802 patent states: “obstacle detection via *motor current sensing or current sensing and speed sensing* means becomes the remaining reliable backup method of detecting an obstacle” (emphasis added). Ex. 1005, 4:12–14. We are not persuaded to import this narrowing limitation from the specification based on the examples argued.

Patent Owner further argues that the doctrine of claim differentiation dictates that the sensor of claim 1 corresponds to a “current amplitude sensor,” whereas “a movement sensor” recited in claim 7 would embrace a “Hall effect sensor that senses movement of the motor shaft.” PO Resp. 15.

Although the doctrine of claim differentiation creates a presumption that the limitations in claims 1 and 7 are different in scope, this presumption can be overcome by written description or prosecution history. *See Seachange Int’l, Inc. v. C-Cor Inc.*, 413 F.3d 1361, 1369 (Fed. Cir. 2005). As discussed *supra*, the ’802 patent Specification describes “obstacle detection via *motor current sensing or current sensing and speed sensing* means becomes the remaining reliable backup method of detecting an obstacle” (emphasis added). Moreover, the Specification does not include a special definition, nor a disavowal. Reply 2.

Accordingly, for purposes of this decision, we adopt Petitioner’s construction and construe the claim term “sensor for measuring a parameter of a motor . . . that varies in response to a resistance to motion” in accordance with its plain meaning. Our construction embraces any sensor that measures any motor parameter that varies as a result of resistance to motion.

B. “a movement sensor for monitoring movement of the object” (claim 7)

Patent Owner contends that “a movement sensor for monitoring movement of the object” (claim 7) should be construed so as to be limited to only a separate discrete, physical hardware-based sensor (such as a position encoder or Hall effect sensor) and exclude sensors that measure motor current or voltage (such as a current pulse counter as used in “sensorless” motor control).” PO Resp. 37. In support, Patent Owner notes that the ’802

patent Specification states “[s]ensorless electronic sensing of motor current commutation pulses is the preferred low cost method . . . [i]n certain circumstances, it may be preferable to use . . . at least one hardware sensor means” that includes specialized sensors such as:

Hall effect, magnetoresistive, magnetodiode, magnetotransistor, Wiegand effect, and variable reluctance; capacitive; optical: Reflective and blocking; generated inductive magnetic fields: ECKO (eddy current killed oscillator), variable inductor, and variable transformer; and film resistor.

Ex. 1005, 23:49–67; 11:26–32. PO Resp. 31–32.

Patent Owner points to prosecution argument that the “movement sensor” of claim 7 corresponded to a “[m]ovement sensor, position encoder, col. 4, line 16.” PO Resp. 33–34 (citing Ex. 1019, page 20, element 12C). Moreover, Patent Owner contends the doctrine of claim differentiation dictates that the sensor of claims 1 and 14 be interpreted as “current measurement,” whereas claim 7 recites a “movement sensor.” PO Resp. 34–35.

Additionally, Patent Owner notes that claim 13, which depends from claim 7, recites “the sensor” and later in the claim recites “the current sensor.” PO Resp. 35–36. Patent Owner argues that “current sensor” is newly introduced and that “current sensor,” recited in claim 13 does not contradict claim 7’s recitation of a “movement sensor” as recited in claim 7. Thus, claim 13 should be treated as requiring both a “movement sensor” and a “current sensor.” *Id.*

Petitioner argues that “a movement sensor for monitoring movement of the object” (claim 7) should be construed as “any sensor that (directly or indirectly) monitors movement of the object.” Reply 6–7.

We agree with Patent Owner that claim 13's recitation of a "current sensor" is consistent with the claim 7 recitation of a "movement sensor." We disagree, however, with Patent Owner that claim 13 should be treated as having both a "movement sensor" and a "current sensor" because claim 13 recites "*the* sensor" (emphasis added), which looks to claim 7's "movement sensor" for antecedent basis. It would make no sense for claim 13 to specify that "*the* sensor" (emphasis added) of claim 7 is a "current sensor" unless the sensor of claim 7 is sufficiently broad to include a current sensor and other sensors. Moreover, the Specification of the '802 patent suggests that "movement sensor" is sufficiently broad to include a current sensor, among a broader range of sensors. For example, the Specification of the '802 patent recites "obstacle detection via motor current sensing *or current sensing and speed sensing means* becomes the remaining reliable backup method of detecting an obstacle" (emphasis added). Ex. 1005, 4:12–14.

Patent Owner's claim differentiation argument is not persuasive for similar reasons. Claim 13 is narrower in scope than claim 7. It further limits the sensor set forth in claim 7 to be a current sensor, thus differentiating it from claim 7. We do not read the prosecution history as limiting the "movement sensor" so as to exclude a "current sensor." *Id.*

Accordingly, we construe "a movement sensor for monitoring movement of the object" as "any sensor that directly or indirectly monitors movement of the object." Our construction embraces a speed sensor and a current sensor that indirectly monitors movement.

C. “travel path” (claim 7)

Claim 7 refers to a “travel path.” Patent Owner contends that this term refers to the “*entire* travel path” of the object and not to a portion of the entire travel path. PO Resp. 37–38. Patent Owner argues that although the doctrine of claim differentiation normally applies to a claim depending on another claim, the doctrine also requires that “all or part of a range of motion” in independent claim 1 be differentiated from independent claim 7, which recites “a travel path.” *Id.* Moreover, Patent Owner argues the controlling activation of a motor described in claim 7 along the entire travel path is critical to the protection of a body part that the window encounters. *Id.* at 38–40.

Petitioner contends the specification and prosecution history do not include a special definition of the “travel path” limitation, nor a clear disavowal of the plain meaning of “travel path,” and Patent Owner does not argue otherwise. Reply 8. We agree with Petitioner.

Although the doctrine of claim differentiation suggests claim 7 does not require “all or part of a range of motion” because claim 1 recites “all or part of a range of motion” and claim 7 merely recites “a travel path,” this suggestion is not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history. *Seachange Int’l*, 413 F.3d at 1369.

The ’802 patent specification does not provide a special definition nor provide a clear disavowal of the plain meaning of the “travel path” limitation, and Patent Owner does not argue otherwise. Reply 8. Instead, the Specification of the ’802 patent indicates during and immediately after the startup phase, obstacle detection will not occur. Reply 8 (citing Ex. 1063

¶ 96). The Specification of the '802 patent refers to *I* as motor current and *PP* as pulse period in discussing obstacle detection along a travel path. Ex. 1005, 15:57–67. In particular, the Specification of the '802 patent states “after allowing some small initial amount of time for the motor rotor to begin rotation, *I* is immediately measured and compared against a fixed maximum threshold value and *PP* is immediately measured and compared against some maximum threshold number of clock cycles” (emphasis added). *Id.* at 16:31–36. Thus, in this embodiment, obstacle detection is not performed along the *entire* travel path.

Because the Specification of the '802 patent indicates obstacle detection is not performed along the entire travel path and the prosecution history does not include a special definition nor a clear disavowal of the plain meaning (Ex 1005, 16:31–36), we conclude from the totality of the evidence that the “travel path” recited in claim 7 is not limited to the “entire travel path.” Rather, it can refer to a portion of the entire travel path.

D. Means Plus Function – “decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping” (claim 14)

Patent Owner contends that the term “decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping” as used in claim 14 invokes 35 U.S.C. § 112, sixth paragraph⁵, means plus function analysis because decision making logic is not and was not a known structure to those

⁵ Section 4(c) of the Leahy-Smith America Invents Act (“AIA”) re-designated 35 U.S.C. § 112, ¶ 6, as 35 U.S.C. § 112(f). Pub. L. No. 112-29, 125 Stat. 284, 296 (2011). Because the '802 patent has a filing date before September 16, 2012 (effective date of § 4(c)), we will refer to the pre-AIA version of § 112.

skilled in the art prior to the priority date of the '802 patent. PO Resp. 49. Further, Patent Owner contends because the Specification of the '802 patent does not explicitly recite a “decision making logic,” the term “decision making logic” is a nonce word combined with the preposition “for” and functional language. *Id.* at 49–50. We disagree.

The Federal Circuit held that “mechanism for,” “module for,” “device for,” “unit for,” “component for,” “element for,” “member for,” “apparatus for,” “machine for,” or “system for,” are non-structural generic placeholders that may invoke pre-AIA 35 U.S.C. § 112, sixth paragraph. *Welker Bearing Co., v. PHD, Inc.*, 550 F.3d 1090, 1096 (Fed. Cir. 2008); *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006); *Personalized Media Commc'ns, LLC v. ITC*, 161 F.3d 696, 704 (Fed. Cir. 1998); *Mas-Hamilton Group v. LaGard, Inc.*, 156 F.3d 1206, 1214–15 (Fed. Cir. 1998). Although this list is not exhaustive, and other generic placeholders may invoke pre-AIA 35 U.S.C. § 112, sixth paragraph, “decision making logic for” is not on the list of generic placeholders. As such, a rebuttable presumption applies that the term is not within the purview of 35 U.S.C. § 112, sixth paragraph. *See Phillips*, 415 F.3d at 1310.

Furthermore, pre-AIA 35 U.S.C. § 112, sixth paragraph does not apply if persons of ordinary skill in the art reading the specification understand the term to be the name for the structure that performs the function, even when the term covers a broad class of structures or identifies the structures by their function. *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372–73 (Fed. Cir. 2003); *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002); *Watts v. XL Sys. Inc.*, 232 F.3d 877, 880–81 (Fed. Cir. 2000); *Personalized Media*, 161 F.3d at 704; *Greenberg v.*

Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) (“Many devices take their names from the functions they perform.”). The term is not required to denote a specific structure or a precise physical structure to avoid the application of pre-AIA 35 U.S.C. § 112, sixth paragraph. *See Watts*, 232 F.3d at 880. In this case, the Specification of the ’802 patent states “[t]he circuitry of FIGS. 2A–2D includes a number of operational amplifiers which require higher voltage than the five volt VCC *logic circuitry* power signal” (emphasis added). Ex. 1005, 6:30–32. As a result, one of ordinary skill in the art reading the Specification of the ’802 would understand the term “logic” to be the name of a type of *circuitry* (e.g., structure) that performs the function.

Moreover, “circuit” has been found to be a structural term that does not invoke pre-AIA 35 U.S.C. § 112, sixth paragraph. *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1321, (Fed. Cir. 2004); *Apex*, 325 F.3d at 1373; *Greenberg*, 91 F.3d at 1583–84; *Personalized Media*, 161 F.3d at 704–05; *CCS Fitness*, 288 F.3d at 1369–70; *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 531 (Fed. Cir. 1996); *Watts*, 232 F.3d at 881; *Al-Site Corp. v. VSI Int’l, Inc.*, 174 F.3d 1308, 1318–19 (Fed. Cir. 1999).

Because one of ordinary skill in the art reading the Specification of the ’802 patent would understand the term “logic” to be the name of a type of circuitry and “circuit” has been found not to invoke pre-AIA 35 U.S.C. § 112, sixth paragraph, we conclude from the totality of the evidence that claim 14 does not invoke pre-AIA 35 U.S.C. § 112, paragraph 6.

Itoh's pulse-detecting circuit 30 that detects a ripple current corresponding to the rotational frequency of motor 20, and outputs a motor pulse signal to CPU 34 and counter 36 of controller 32 to calculate the rotational speed of the motor. Pet. 15, 30; Ex. 1001, ¶ 94; Ex. 1007, 7:60–64; 8:33–61; 9:37–62; Fig. 7.

Patent Owner argues the correct construction for “a sensor for measuring a parameter of a motor that varies in response to a resistance to motion” (claim 1) is “a sensor that measures a magnitude of motor current.” *See supra* Part III.A. As a result, Patent Owner argues Itoh does not disclose, teach, or suggest “a sensor for measuring a parameter of a motor that varies in response to a resistance to motion” (claim 1) because “‘Itoh simply measures the timing of binary motor commutation current pulses, which is inversely proportional to speed.’” PO Resp. 16–19 (quoting Ex. 2001 ¶ 57).

We are not persuaded by Patent Owner's argument that Itoh fails to disclose, teach, or suggest “a sensor for measuring a parameter of a motor that varies in response to a resistance to motion.” At the outset, we construed the claim 1 limitation “sensor for measuring a parameter of a motor . . . that varies in response to a resistance to motion” as “any sensor that measures any motor parameter that varies as a result of resistance to motion” rather than as “a sensor that measures a magnitude of motor current.” *See supra* Part III.A.

The cited portions of Itoh relied upon by Petitioner disclose circuit 30 detects a ripple current corresponding to the rotational frequency of motor 20, and outputs a motor pulse signal to CPU 34 and counter 36 of controller 32, which discloses “a sensor for measuring a parameter of a motor” as

recited in claim 1. Pet. 15, 30; Ex. 1007, 8:33–40. Moreover, the cited portions of Itoh relied upon by Petitioner disclose CPU 34 detects if an obstacle is stuck between the window frame and window and determines whether to descend or interrupt the motion of the window, which discloses “varies in response to a resistance to motion” as recited in claim 1. Pet. 15, 30; Ex. 1007, 8:49–9:62; Figs. 6–7.

Based on our claim construction discussed *supra* in part III.A, Itoh’s disclosure discussed *supra*, and the record before us, we conclude that Petitioner has established by a preponderance of evidence that claim 1 is anticipated by Itoh.

2. Claims 7–9

The parties’ arguments focus on “a movement sensor for monitoring movement of the object” (claim 7) and the “travel path” (claim 7). We begin with Petitioner’s contentions regarding the limitation “a movement sensor for monitoring movement of the object.”

Petitioner’s arguments concerning claims 7–9 focus on Embodiment 3 of Itoh, already discussed above. Pet. 18–21, 32–36. According to Petitioner, claim 7’s “a movement sensor for monitoring movement of the object” embraces Itoh’s pulse detecting circuit 30 indirectly monitoring movement of window 26 by sensing pulses generated by motor 20 as it drives movement of window 26. Pet. 33; Ex. 1001 ¶¶ 118–121; Ex. 1007, 7:60–8:11; 8:33–61; 9:16–62; Fig. 7.

We are not persuaded by Patent Owner’s argument that Itoh fails to disclose, teach, or suggest “a movement sensor for monitoring movement of the object” because we construed the claim 7 limitation “a movement sensor for monitoring movement of the object” as “any sensor that directly or

indirectly monitors movement of the object” rather than as “a separate discrete, physical hardware-based sensor (such as a position encoder or Hall effect sensor)” that is mounted. *See supra* Part III.B.

The cited portions of Itoh relied upon by Petitioner disclose a pulse detecting circuit 30 indirectly monitoring movement of window 26 by sensing pulses generated by motor 20 as it drives movement of window 26, which discloses “a movement sensor for monitoring movement of the object” as recited in claim 7. Pet. 33; Ex. 1001 ¶¶ 118–121; Ex. 1007, 7:60–8:11; 9:16–62; Fig. 7.

Regarding the “travel path” limitation, Petitioner argues claim 7’s “travel path” embraces Itoh’s pulse detecting circuit 30 indirectly monitoring movement of window 26 along a travel path in a window frame 24. Pet. 33; Ex. 1001 ¶¶ 118–121; Ex. 1007, 7:47–8:11; 8:33–48; 9:16–62; Fig. 7.

We are not persuaded by Patent Owner’s argument that Itoh fails to disclose, teach, or suggest “travel path” because we construed that the claim 7 limitation “travel path” can refer to a portion of the travel path. *See supra* Part III.C.

The cited portions of Itoh relied upon by Petitioner disclose a pulse detecting circuit 30 indirectly monitoring movement of window 26 along a travel path in window frame 24, which discloses “monitoring movement of the object . . . along a travel path” as recited in claim 7. Pet. 33–34; Ex. 1001 ¶¶ 118–121; Ex. 1007, 7:47–8:11; 8:33–48; 9:16–62; Fig. 7.

Based on our claim construction discussed *supra* in part III.B and III.C, Itoh’s disclosure discussed *supra*, and the record before us, we conclude that Petitioner has established by a preponderance of evidence that claims 7–9 are anticipated by Itoh.

3. Independent Claim 14

Claim 14 has many limitations which are substantially similar to limitations discussed in connection with claim 7. The parties' arguments focus on "decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping" (claim 14). We begin with Petitioner's contentions regarding this limitation.

According to Petitioner, the claim 14 limitation "decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping" embraces Itoh's controller 32 that executes an algorithm for monitoring, calculating, comparing, and stopping. Pet. 21–23, 38–39; Ex. 1001 ¶¶ 161–177; Ex. 1007, 7:47–64; 8:33–61; 9:16–62; 10:33–11:20; Fig. 7.

We are not persuaded by Patent Owner's argument that Itoh fails to disclose, teach, or suggest the limitation "decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping" because we construed the claim 14 limitation "decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping" as not invoking 112 sixth paragraph. *See supra* Part III.D.

The cited portions of Itoh relied upon by Petitioner disclose controller 32 executing an algorithm for monitoring, calculating, comparing, and stopping, which discloses "decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping" as recited in claim 14. Pet. 21–23, 38–39; Ex. 1001 ¶¶ 161–177; Ex. 1007, 7:47–64; 8:33–61; 9:16–62; 10:33–11:20; Fig. 7.

Based on our claim construction discussed *supra* in part III.D, Itoh's disclosure discussed *supra*, and the record before us, we conclude that

Petitioner has established by a preponderance of evidence that claim 14 is anticipated by Itoh.

B. Other Asserted Grounds – Itoh as the primary reference

For reasons stated below, we conclude, based on a preponderance of the evidence, that claims 1, 6–9, and 14 are unpatentable over Itoh and one or more of the following: knowledge of one ordinary skill in the art, Kinzl, and Zuckerman.

1. Claims 1, 7–9, and 14

Petitioner and Patent Owner present various alternate arguments reliant on claim interpretations we have not adopted.

Based on our claim construction discussed *supra* in part III, Itoh’s disclosure described *supra* in part IV.A, and the record before us, we conclude that Petitioner has established by a preponderance of evidence that claims 1, 7–9, and 14 are unpatentable over Itoh and one or more of the following: knowledge of one of ordinary skill in the art, Kinzl, and Zuckerman.

2. Claim 6

The parties’ arguments focus on “immediate past measurements are sensed within a forty millisecond interval” (claim 6). We begin with Petitioner’s contentions regarding this limitation.

Petitioner contends claim 6 is obvious over Itoh (*see* Pet. 28–39), or over Itoh and Kinzl (*see id.* at 49–56). Petitioner contends the 40 millisecond timeframe would have been obvious to one of ordinary skill in art as a discovering of the optimum or workable range of a general condition. Pet. 17, 28, 32; Ex. 1001 ¶ 109.

Petitioner contends a 1.2 millisecond pulse period is an example within the scope of Itoh for more than 33 cycles of the motor pulse signal (“Tp”) samples to elapse in 40 milliseconds. Reply 4. Moreover, Petitioner contends 40 milliseconds would have been an obvious design choice to a person having ordinary skill in the art because 40 milliseconds are not “uniquely successful” and Itoh implicitly teaches the time period for sampled data is a parameter to be selected. *Id.*

Patent Owner contends design choice rationale does not apply because Petitioner fails to present: 1) evidence for why one of skill in the art would choose a fixed time window instead of a number of samples; and 2) how 40 milliseconds might be derived. PO Resp. 23–28.

Because a 1.2 millisecond pulse period is an example within the scope of Itoh for more than 33 Tp samples to elapse in 40 milliseconds and one of ordinary skill in the art reading the Specification of the ’802 patent would understand there is no unique success of 40 milliseconds, we conclude from the totality of the evidence that claim 6 is an obvious design choice.

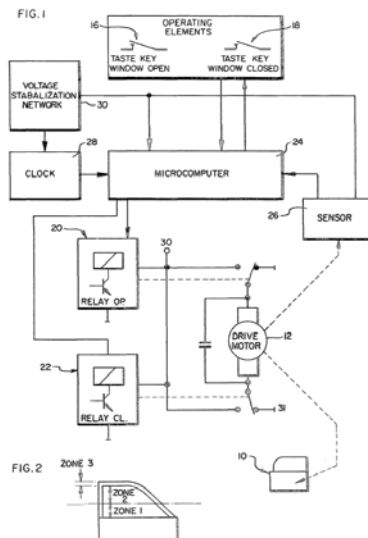
C. Challenges based on Kinzl

For reasons stated below, we conclude, based on a preponderance of the evidence, that claims 7, 9, and 14 are anticipated by Kinzl and obvious over Kinzl.

1. Claims 7 and 9

The parties’ arguments focus on “a movement sensor for monitoring movement of the object” (claim 7) and the “travel path” (claim 7). We begin with Petitioner’s contentions regarding the limitation “a movement sensor for monitoring movement of the object.”

Petitioner relies on Figures 1 and 2 of Kinzl, which are shown below:



Pet. 41. Figure 1 shows a diagram of a system for operating an electric window of an automotive vehicle, and Figure 2 shows three zones established for operation of the system. Ex. 1008, 1:7–13, 2:37–41.

Microcomputer 24 uses sensor 26 to monitor the opening and closing of electric window 10, via drive motor 12. *Id.* at 2:44–57. Microcomputer 24 determines from sensor 26 whether window 10 has been blocked and, if a block is detected, responds in different manners (including stopping and/or reversing) dependent upon whether window 10 is in zone 1, 2, or 3. *Id.* at 3:6–26.

Petitioner argues the claim 7 limitation “a movement sensor for monitoring movement of the object as the motor moves said object along a travel path” embraces Kinzl’s sensor 26 monitoring opening and closing of a window 10 in a window pane either directly via window 10 itself, or indirectly via drive motor 12. Pet. 41; Ex. 1001 ¶¶ 197–198; Ex. 1008, 2:11–26; 2:54–56; Abstract; Fig. 1.

We are not persuaded by Patent Owner’s contention that Kinzl fails to disclose, teach, or suggest “travel path” because we construed that the claim 7 “travel path” can include a portion of the travel path. *See supra* Part III.C.

The cited portions of Kinzl relied upon by Petitioner disclose a sensor 26 monitoring opening and closing of a window 10 in a window pane either directly via window 10 itself, or indirectly via drive motor 12, which discloses, teaches, and suggests “a movement sensor for monitoring movement of the object as the motor moves said object along a travel path” as recited in claim 7. Pet. 41; Ex. 1001 ¶¶ 197–198; Ex. 1008, 2:11–26; 2:54–56; Abstract; Fig. 1.

Based on our claim construction discussed *supra* in part III.C, Kinzl’s disclosure discussed *supra*, and the record before us, we conclude that Petitioner has established by a preponderance of evidence that claim 7 is anticipated by Kinzl and obvious over Kinzl.

2. Independent Claim 14

Claim 14 has many limitations which are substantially similar to limitations discussed in connection with claim 7. The parties’ arguments focus on “decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping” (claim 14). We begin with Petitioner’s contentions regarding this limitation.

According to Petitioner, the claim 14 limitation “decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping” embraces Kinzl’s microcomputer 24 that runs a logic algorithm for monitoring, calculating, comparing, and stopping. Pet. 46–49; Ex. 1008, 2:19–28; 3:21–49; 4:24–41; Fig. 1; Abstract.

We are not persuaded by Patent Owner’s argument that Kinzl fails to disclose, teach, or suggest the limitation “decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping” because we construed the claim 14 limitation “decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping” as not invoking 112 sixth paragraph. *See supra* Part III.D.

The cited portions of Kinzl relied upon by Petitioner disclose a microcomputer 24 that runs a logic algorithm for monitoring, calculating, comparing, and stopping, which discloses, teaches, and suggests “decision making logic for . . . monitoring . . . calculating . . . comparing . . . stopping” as recited in claim 14. Pet. 21–23, 38–39; Ex. 1001, ¶¶ 222–232; Ex. 1008, 2:19–28; 3:21–49; 4:24–41; Fig. 1; Abstract.

Based on our claim construction discussed *supra* in part III.D, Kinzl’s disclosure discussed *supra*, and the record before us, we conclude that Petitioner has established by a preponderance of evidence that claim 14 is anticipated by Kinzl and obvious over Kinzl.

V. OTHER ARGUMENTS

A. *Expert not Familiar with the State of the Art*

Patent Owner contends Dr. C. Arthur MacCarley did not have personal experience with the state of the art in 1992 at the time of filing and is not an expert in automotive vehicle window or sunroof movement mechanisms or their control systems. PO Resp. 4–10.

We are persuaded, however, that Dr. MacCarley is an expert in the field of electrical and computer engineering since before 1992. Ex. 1063 ¶ 7. Dr. MacCarley’s specific expertise is in electro-mechanical control systems, computer-based control systems, microprocessor-based control

systems, and indirect sensing methods, which are all in the field of automotive engineering. Ex. 1063 ¶ 7. Accordingly, we conclude that Dr. MacCarley is an expert familiar with the State of the Art of automotive engineering in 1992.

B. Enablement of References

Patent Owner contends Itoh and Kinzl are non-enabling references that would require undue experimentation to make or use because of an inordinate amount of false positives and false negatives that would occur with Itoh's and Kinzl's respective algorithms. PO Resp. 2–4, 59–60. Moreover, Patent Owner contends Itoh and Kinzl do not overcome many real-world vehicle problems such as the varying loads caused by wind buffeting or booming caused by the pressure difference between the inside and the outside of the passenger compartment of a vehicle moving at high speeds. PO Resp. 4.

Regarding the asserted grounds under § 102, Patent Owner, however, does not contend Itoh and Kinzl are non-enabling as to any specific claim. Reply 14. Instead, Patent Owner merely asserts a generalized argument that Itoh and Kinzl are non-enabling references. *Id.*

Regarding the asserted grounds under § 103, we have determined that Itoh and Kinzl provide sufficient disclosure to allow a person having ordinary skill in the art to make and use the inventions recited in each of the challenged claims. *In re Antor Media Corp.*, 689 F.3d 1282, 1290 (Fed. Cir. 2012) (“Enablement of prior art requires that the reference teach a skilled artisan to make or carry out what it discloses in relation to the claimed invention. Even if a reference discloses an inoperative device, it is prior art for all that it teaches.” (quotation omitted) (citations omitted)); *Symbol*

Techs., Inc. v. Opticon, Inc., 935 F.2d 1569, 1578 (Fed. Cir. 1991) (“[A] non-enabling reference may qualify as prior art for the purpose of determining obviousness under § 103.”).

VI. MOTION TO EXCLUDE

Patent Owner argued in its Motion (see Paper 41) that: an excerpt of a textbook by Clarence W. deSilva entitled “Control Sensors and Actuators” (Ex. 1065), a complete color copy of the same textbook (Ex. 1066), and pages 185–193 and lines 15–18 of page 198 of the transcript of the deposition of Dr. MacCarley (Ex. 2004) comprise newly raised evidence; and the dictionary definition of “logic” (Exs. 1054, 1057, 1058) and “sensor” (Ex. 1055) and portions of the Reply Declaration of Petitioner’s expert Dr. MacCarley (Ex. 1063) rely on dictionary definitions that are published after the priority date of the ’802 patent. Motion 3–5.

A. Newly Raised Evidence

On November 5, 2014, Patent Owner filed the Patent Owner’s Response. Paper 31. On February 5, 2015, Petitioner filed Petitioner’s Reply along with Exhibits 1065 and 1066. Paper 34. On March 26, 2015, Patent Owner filed a Motion to Exclude Evidence of Exhibits 1065, 1066, and 2004. Paper 41. On April 9, 2015, Petitioner filed an Opposition to the Motion to Exclude. Paper 44.

In its Motion to Exclude, Patent Owner contends that Exhibits 1065 and 1066 and certain pages of Exhibit 2004 should be excluded because these exhibits are proffered in support of arguments Petitioner presents for the first time in the Reply. Motion 3 and 5.

At the outset, “[m]otions to exclude are for evidentiary objections previously made on the record,” and are “not a proper vehicle for user by a

party to raise the issue of a reply exceeding the proper scope.” *Honeywell Int’l Inc. v. Int’l Controls & Measurements Corp.*, Case IPR2014-00219, slip op. at 2 (PTAB Jan. 5, 2015) (Paper 38) (expunging improper motion to exclude).

B. Dictionary Definition Priority Dates

In its Motion to Exclude, Patent Owner contends that Exhibits 1054, 1055, 1057, and 1058 provide evidence of dictionary definitions published in 1994 or 1995. Motion 4. Patent Owner contends these Exhibits should be excluded because the definitions were published after the 1992 priority date. *Id.* Moreover, Patent Owner argues Petitioner’s Exhibits 1054, 1055, 1057, and 1058 were heavily relied upon in forming Exhibit 1063; thus, certain pages of Exhibit 1063 should be excluded. *Id.*

Although we cite the MacCarley Declaration (Ex. 1001) in this Decision, we do not rely on Exhibits 1054, 1055, 1057, 1058, 1063, 1065, 1066, and 2004. Because an expert may rely upon evidence regardless of whether the evidence is admissible and we do not rely on any of the definitions, we dismiss the Motion as moot.

C. Conclusion

For the reasons stated above, Patent Owner’s Motion to Exclude is dismissed as moot.

VII. CONCLUSIONS

For the reasons set forth above, we are persuaded that Petitioner has shown by a preponderance of the evidence that:

(1) claims 1, 7–9, and 14 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Itoh;

- (2) claims 1, 6–9, and 14 are unpatentable under 35 U.S.C.
§ 103(a) as obvious over Itoh;
- (3) claims 7, 9, and 14 are unpatentable under 35 U.S.C.
§ 102(b) as anticipated by Kinzl;
- (4) claims 7, 9, and 14 are unpatentable under 35 U.S.C.
§ 103(a) as obvious over Kinzl;
- (5) claims 1, 6–9, and 14 are unpatentable under 35 U.S.C.
§ 103(a) as obvious over Itoh and Kinzl;
- (6) claims 7–9 and 14 are unpatentable under 35 U.S.C.
§ 103(a) as obvious over Itoh and Zuckerman; and
- (7) claims 7–9 and 14 are unpatentable under 35 U.S.C.
§ 103(a) as obvious over Itoh, Kinzl, and Zuckerman.

VIII. ORDER

Accordingly, it is

ORDERED that Patent Owner’s Motion to Exclude is dismissed as moot;

FURTHER ORDERED that claims 1, 6–9, and 14 of U.S. Patent 7,579,802 have been shown to be unpatentable; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2014-00417
Patent 7,579,802 B2

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