

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STRYKER CORPORATION,
Petitioner,

v.

KARL STORZ ENDOSCOPY-AMERICA, INC.,
Patent Owner.

Case IPR2015-00673
Patent 7,471,310 B2

Before BRYAN F. MOORE, BARRY L. GROSSMAN, and
MICHELLE N. WORMMEESTER, *Administrative Patent Judges*.

WORMMEESTER, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

A. *Background*

Stryker Corporation (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–16, 19–22, 25, and 26 of U.S. Patent No. 7,471,310 B2 (Ex. 1101, “the ’310 patent”). Karl Storz Endoscopy-America, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . 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 Petition, and for the reasons explained below, we determine that Petitioner has not established a reasonable likelihood that it would prevail with respect to any of the challenged claims.

B. *Related Proceedings*

The parties identify the following case involving the ’310 patent: *Karl Storz Endoscopy-Am., Inc. v. Stryker Corp.*, Case No. 3:14-cv-00876-RS (N.D. Cal., Feb. 26, 2014). Pet. 1; Paper 5, 3. The parties also identify seven other pending requests for *inter partes* review involving the ’310 patent or a patent related to the ’310 patent. Pet. 1–2; Paper 5, 3.

C. *The ’310 Patent*

The ’310 patent is titled “Intelligent Camera Head.” The Abstract describes the subject matter as follows:

A video imaging system that minimizes the effect of EMI on the image data, provides a small, lightweight easy to use camera head, permitting interchangeable use of a variety of

intelligent camera heads with a single camera control unit, and allows the utilization of new camera heads with new functions as they become available without having to replace the existing CCU.

Ex. 1101, Abstract.

D. The Challenged Claims

Petitioner challenges claims 1–16, 19–22, 25, and 26 of the '310 patent. Independent claim 1 is illustrative of the claimed subject matter and is reproduced below:

1. A video imaging system comprising:
 - a camera control unit processing a continuous stream of digital video data;
 - a cable, connected to said camera control unit, for transmitting the stream of digital video data to said camera control unit; and
 - a camera head, connected to said cable, for providing the stream of digital video data, said camera head including:
 - an imager, for generating an analog stream of video data;
 - a timing generator, generating a timing signal particular to said camera head, the timing signal actuating said imager and sent to said camera control unit;
 - a converter, for converting the analog stream of video data into the stream of digital video data;
 - a serializer, for serializing the stream of digital video data for transmission over said cable;
 - at least one digital serial driver;
 - a processor; and
 - a memory device, accessible by said processor, containing camera head information;said camera control unit having at least one digital serial receiver and is controlled based at least in part upon said timing signal particular to said camera head.

Ex. 1101, 9:17–39.

E. Asserted Grounds of Unpatentability

Petitioner contends that the challenged claims are unpatentable under 35 U.S.C § 103 based on the following grounds. Pet. 4–5, 9–60.

References	Claims Challenged
Eto ¹ and Okada ²	1–3, 6, 9–12, 15, 16, 21, 22
Eto, Okada, and Adler ³	4, 5, 7, 8, 13, 14, 19, 20, 25, 26
Eto, Okada, and TI-LVDS ⁴	4, 5, 7, 8, 13, 14, 19, 20, 25, 26
Eto, Okada, and King ⁵	1–3, 6, 9–12, 15, 16, 21, 22
Nakamura ⁶ and Okada	1, 2, 9–12, 15, 16, 21, 22
Nakamura, Okada, and Adler	3–8, 13, 14, 19, 20, 25, 26
Nakamura, Okada, and TI-LVDS	3–8, 13, 14, 19, 20, 25, 26

II. ANALYSIS

A. Claim Construction

We construe claims in an unexpired patent by applying the broadest reasonable interpretation in light of the specification. *See* 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, – F.3d –, No. 2014-1301, 2015 WL 4097949, at *7–8 (Fed. Cir. July 8, 2015) (“Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA,” and “the standard was properly adopted by PTO regulation”). Under the broadest reasonable construction standard, claim terms are given their

¹ Eto, US 5,701,581, issued Dec. 23, 1997 (Ex. 1103).

² Okada, US 6,476,852 B1, issued Nov. 5, 2002 (Ex. 1104).

³ Adler, US 6,659,940 B2, issued Dec. 9, 2003 (Ex. 1105).

⁴ Texas Instruments, *Interface Circuits for TIA/EIA-644 (LVDS) Design Notes*, Mixed Signal Products (Nov. 1998) [hereinafter “TI-LVDS”] (Ex. 1106).

⁵ King, US 6,608,647 B1, issued Aug. 19, 2003 (Ex. 1107).

⁶ Nakamura, US 6,278,492 B1, issued Aug. 21, 2001 (Ex. 1108).

ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). On the other hand, a “claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer” and clearly set forth a definition of the claim term in the specification. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002).

In light of Petitioner’s challenges to the patentability of the claims, we address the following terms in the challenged claims: “video imaging system” and “camera head.” Other terms in the challenged claims need no express construction at this time.

1. “*video imaging system*”

The preambles of independent claims 1, 9, 15, and 21 recite “[a] video imaging system.” Ex. 1101, 9:17, 60, 10:32, 62. Asserting that “the patent claims do not have meaning removed from the context of the disclosure,” Patent Owner contends that the preambles are limiting. Prelim. Resp. 7. In particular, Patent Owner contends that the recited video imaging system means “*endoscopic video imaging equipment for use in medical procedures.*” *Id.* at 6. In support of its contention, Patent Owner explains:

The specification describes explicitly the context in which the inventive video imaging system arose: “video endoscopy,” “[which] includes medical diagnostic and therapeutic disciplines that utilize endoscopes to penetrate and view otherwise inaccessible body cavities utilizing minimally invasive surgical procedures.” The terms “endoscopic” or “endoscopy” automatically evokes [sic] medical imaging in the minds of those of skill in the art. The specification describes numerous issues and characteristics unique to the field of video endoscopy.

Id. at 7 (internal citation omitted).

Petitioner, on the other hand, contends that the preambles are not limiting because the recited video imaging system “describes only the intended use.” Pet. 6. We are persuaded by Petitioner’s contention in this regard.

In general, a preamble limits the invention if it recites essential structure or steps, or if it is “‘necessary to give life, meaning, and vitality’ to the claim.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (citing *Pitney Bowes Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999)). A preamble, however, is not limiting where the claim body defines a structurally complete invention and the preamble only states a purpose or intended use for the invention. *Id.*

Each of the bodies of independent claims 1, 9, 15, and 21 recites a system that includes a camera control unit, a cable, and a camera head. Each recited camera head includes some combination of the following components: an imager, a timing generator, a converter, a serializer, a digital serial driver, a processor, and a memory device. The recited systems correspond at least to the embodiment shown in Figure 1 of the ’310 patent, which illustrates a “camera head, universal cable and camera control unit.” Ex. 1101, 4:45–47. Figure 1 shows that the camera head includes an imager, a converter, a timing generator, a multiplexer, a processor, a memory, a serializer, and a driver. *See id.*, Fig. 1. Thus, each of the bodies of claims 1, 9, 15, and 21 recites a structurally complete invention.

Moreover, although the Specification may be “replete with . . . references to endoscopic/medical imaging,” as Patent Owner contends, (Prelim. Resp. 7), we note that Patent Owner does not direct our attention to

any language in the Specification that *defines* a video imaging system as endoscopic video imaging equipment for use in medical procedures. Claim terms should generally be given their ordinary and customary meaning unless “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). “To act as its own lexicographer, a patentee must ‘clearly set forth a definition of the disputed claim term’” *Id.* (quoting *CCS Fitness*, 288 F.3d at 1366). Accordingly, based on the record before us, we determine that the preambles of claims 1, 9, 15, and 21 do not recite any essential structure not already recited in the bodies of these claims.

In view of the foregoing, we agree with Petitioner that the preambles of claims 1, 9, 15, and 21 are non-limiting.

2. “*camera head*”

Independent claims 1, 9, 15, and 21 recite “a camera head.” Ex. 1101, 9:23, 66, 10:38, 11:1. Petitioner argues that this limitation means “a device that generates an uninterrupted sequence of data that represents moving visual images.” Pet. 6. We are unpersuaded by Petitioner’s argument.

In support of its construction, Petitioner points out that claims 1, 9, 15, and 21 further “recite[] that the camera head must provide a ‘stream of digital video data’ and the camera control unit processes a ‘continuous stream of digital video data.’” Pet. 6. Given these further recitations, Petitioner contends that the recited camera head must therefore “be a device that generates an uninterrupted (i.e., continuous) sequence of data (i.e., stream of data) representing moving visual images (i.e., video).” *Id.* In light

of the issues before us at this stage of the proceeding, however, it is not necessary for us to decide whether the camera head generates an *uninterrupted* sequence of data. We therefore decline to limit our construction accordingly.

Petitioner also contends that the recited camera head “is not limited to an endoscopic video camera, at least in part because dependent claim 21 is narrower in requiring an endoscope.” *Id.* According to Petitioner, “[i]f a ‘camera head’ in claim 1 was limited to an endoscopic video camera, then the quoted language from claim 21 would be redundant.” *Id.* at 7. We are unpersuaded by Petitioner’s contention in this regard. Petitioner does not direct us to any evidence showing that an endoscopic video camera necessarily is or includes an endoscope.

Petitioner further contends that, during prosecution, Patent Owner “never argued that [the Examiner’s] . . . rejections were improper because the [applied] references lacked disclosure of an endoscopic video camera.” *Id.* We also are unpersuaded by Petitioner’s contention in this regard. As discussed above, we construe claims *in light of the specification*. See *Cuozzo*, 2015 WL 4097949, at *7–8. As Patent Owner points out, the Specification defines “camera head” as an endoscopic video camera. Prelim. Resp. 9 (citing Ex. 1101, 1:18–19).

We note Patent Owner’s contention that an endoscopic video camera is “a video camera that includes or is adapted to be connected to an endoscope.” *Id.* at 9 (emphasis omitted). On this record, we agree with Patent Owner. See Ex. 1101, 1:15–17 (“[c]oupling of video imaging cameras (incorporating solid-state imagers) to endoscopes”), 11:1 (“a camera head, connected to said cable and an endoscope”).

Based on the record before us, we determine that, under a broadest reasonable construction in light of the Specification, the recited term “camera head” means an endoscopic video camera, which is a video camera that includes or is adapted to be connected to an endoscope.

B. Obviousness over Eto and Okada

Petitioner argues that claims 1–3, 6, 9–12, 15, 16, 21, and 22 of the ’310 patent would have been obvious over Eto and Okada. *See* Pet. 9–27. Petitioner relies on a Declaration by Dr. John Grindon (Ex. 1109). *See id.* We are unpersuaded that Petitioner’s analysis and supporting evidence have established a reasonable likelihood of Petitioner prevailing in showing the unpatentability of the claims.

1. Eto

Eto describes a video signal transmission system including a television camera 1, a cable 7, and a camera control unit (“CCU”) 2. *See* Ex. 1103, Fig. 1. The system also includes a transmitting/receiving apparatus 150 on the camera side. *See id.* The apparatus 150 includes A/D converters and a multiplexer. *See id.* The camera and CCU are coupled using a single transmission path through which video, audio, and control signals are multiplexed and transmitted in a bidirectional manner. *Id.* at 1:7–13.

2. Okada

Okada describes an imaging system for an endoscope. Ex. 1104, 1:12–13. The system has a scope side and a processor side. *See id.*, Fig. 1. The scope side includes a CCD 1, an A/D converter 6, a timing generator 16, a ROM 21, and a CPU 20. *See id.* The timing generator is selectively connected to a NTSC oscillator 17 and a PAL oscillator 18, which generate

different frequencies. *See* at 3:26–49, Fig. 1. When one of the oscillators 17, 18 is selected, picture data is written (on the scope side) and read (on the processor side) in the same timing of the signal formed in the timing generator 16. *See id.* at 5:21–26. This helps minimize screen flicker, which arises when the write-in signal is based on the NTSC frequency and the read-out signal is based on the PAL frequency. *See id.* at 1:66–2:3, 2:20–25, 2:57–64.

3. *Claims 1–3, 6, 9–12, 15, 16, 21, and 22*

Independent claims 1, 9, 15, and 21 recite “a camera head.” For this limitation, Petitioner relies on Eto. *See* Pet. 11–12, 23–25; Ex. 1109 ¶¶ 59, 86. In particular, Petitioner contends that a skilled artisan would recognize that Eto’s camera 1 and transmitting/receiving apparatus 150 together constitute the recited camera head. *See* Pet. 12; Ex. ¶ 59. Based on the record before us, we are unpersuaded by Petitioner’s contention in this regard. As discussed above, we construe the recited camera head to mean an endoscopic video camera. Petitioner does not direct us to any disclosure in Eto that describes the camera 1 or the transmitting/receiving apparatus 150 as an endoscopic video camera. In fact, Petitioner directs us to disclosure in Eto that explicitly describes the camera 1 as a television camera. *See* Pet. 12 (citing Ex. 1103, 7:7–18); *see also id.* at 10 (citing Ex. 1103, 1:8–14).

Petitioner appears to also contend that Okada alternatively teaches the recited camera head. *See* Pet. 25 (claim chart citing Ex. 1104, 4:4–15). Based on the cited portion of Okada, we are persuaded that Okada alternatively teaches the recited camera head. *See id.*; Ex. 1104, 4:4–15.

It is not sufficient, however, for Petitioner to demonstrate that each of the components is known. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398,

418 (2007). Petitioner must also provide “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). In that regard, Petitioner does not provide any rationale for combining Eto and Okada to obtain the recited camera head (i.e., an endoscopic video camera). Petitioner’s citation to Okada as teaching this feature appears in a claim chart without further explanation. *See* Pet. 25; *see also id.* at 11–12 (“Fourth, Eto discloses a ‘camera head, connected to said cable, for providing the stream of digital video data,’ as recited by claims 1, 9, and 15”). Accordingly, we are not persuaded that Petitioner has provided adequately articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *See Kahn*, 441 F.3d at 988.

In view of the foregoing, we determine that Petitioner has not established a reasonable likelihood of prevailing in showing that independent claims 1, 9, 15, and 21 would have been obvious over Eto and Okada. Claims 2, 3, 6, 10–12, 16, and 22 depend from claims 1, 9, 15, and 21. We therefore also determine that Petitioner has not established a reasonable likelihood of prevailing in showing that these depending claims would have been obvious over Eto and Okada.

C. Obviousness over Eto, Okada, and Adler

Petitioner argues that claims 4, 5, 7, 8, 13, 14, 19, 20, 25, and 26 of the ’310 patent would have been obvious over Eto, Okada, and Adler. *See* Pet. 28–31. These claims depend from claims 1, 9, 15, and 21. As discussed above, we determine that Petitioner has not established a reasonable likelihood of prevailing in showing the unpatentability of claims

1, 9, 15, and 21 based on Eto and Okada. For the same reasons, we also determine that Petitioner has not established a reasonable likelihood of prevailing in showing the unpatentability of depending claims 4, 5, 7, 8, 13, 14, 19, 20, 25, and 26 based on Eto, Okada, and Adler.

D. Obviousness over Eto, Okada, and TI-LVDS

Petitioner argues that claims 4, 5, 7, 8, 13, 14, 19, 20, 25, and 26 of the '310 patent would have been obvious over Eto, Okada, and TI-LVDS. *See* Pet. 31–33. These claims depend from claims 1, 9, 15, and 21. As discussed above, we determine that Petitioner has not established a reasonable likelihood of prevailing in showing the unpatentability of claims 1, 9, 15, and 21 based on Eto and Okada. For the same reasons, we also determine that Petitioner has not established a reasonable likelihood of prevailing in showing the unpatentability of depending claims 4, 5, 7, 8, 13, 14, 19, 20, 25, and 26 based on Eto, Okada, and TI-LVDS.

E. Obviousness over Eto, Okada, and King

Petitioner argues that claims 1–3, 6, 9–12, 15, 16, 21, and 22 of the '310 patent would have been obvious over Eto, Okada, and King. *See* Pet. 33–37. In particular, Petitioner contends that the combination of Eto and Okada teaches all the limitations recited in independent claims 1, 9, and 15, and 21. *See* Pet. 33. For example, Petitioner contends that the combination of Eto and Okada teaches the recited camera head. *See* Pet. Pet. 11–12, 23–25. As discussed above, we are unpersuaded by Petitioner's contention in this regard.

Although Petitioner relies on King for alternatively teaching certain of the recited limitations in claims 1, 9, 15, and 21, Petitioner does not contend that King alternatively teaches the recited camera head. *See* Pet. 33–34 (“This includes the requirement of ‘*a timing generator . . .*’ [and] ‘*a plurality of camera heads . . .*’ Alternatively, even if these elements were not disclosed in the combination of Eto and Okada, it would have been obvious to include these features in view of King.”). Accordingly, based on the record before us, we determine that Petitioner has not established a reasonable likelihood of prevailing in showing that claims 1, 9, 15, and 21 would have been obvious over Eto, Okada, and King. As claims 2, 3, 6, 10–12, 16, and 22 depend from claims 1, 9, 15, and 21, we also determine that Petitioner has not established a reasonable likelihood of prevailing in showing that these depending claims would have been obvious over Eto, Okada, and King.

F. Obviousness over Nakamura and Okada

Petitioner argues that claims 1, 2, 9–12, 15, 16, 21, and 22 of the ’310 patent would have been obvious over Nakamura and Okada. *See* Pet. 37–55. Petitioner relies on the Grindon Declaration (Ex. 1109). *See id.* We are unpersuaded that Petitioner’s analysis and supporting evidence have established a reasonable likelihood of Petitioner prevailing in showing the unpatentability of the claims. We discussed Okada above.

1. Nakamura

Nakamura describes a digital transmission system that includes a camera head 10 and a camera control unit 20. *See* Ex. 1108, Fig. 2. The camera head 10 includes CCDs 13, A/D conversion circuits 15, and a

parallel/serial (PS) conversion circuit 17. *See id.* Serial digital video signals outputted from the camera head 10 are sent to the camera control unit 20 via a cable. *See id.* at 5:27–29.

2. *Claims 1, 2, 9–12, 15, 16, 21, and 22*

Independent claims 1, 9, 15, and 21 recite “a camera head.” Petitioner contends that the camera head 10 in Nakamura teaches this limitation. *See* Pet. 40 (citing Ex. 1108, Fig. 2), 50, 53; Ex. 1109 ¶ 136. Based on the record before us, we are unpersuaded by Petitioner’s contention in this regard. As discussed above, we construe the recited camera head to mean an endoscopic video camera. Petitioner does not direct us to any disclosure in Nakamura that describes the camera 10 as an endoscopic video camera. *See* Prelim. Resp. 38; *see also* Pet. 59–60 (“Eto and Nakamura, however, disclose the various ’310 patent claim elements Okada discloses the same type of video imaging system, but specifically for use in an endoscope.”). In fact, as Patent Owner points out, Nakamura describes the camera 10 in the context of a television transmission system. *See* Prelim. Resp. 39–40; Ex. 1108, 1:12–19 (“portable television camera”), 2:14–15 (“format of so-called SMPTE (Society of Motion Picture and Television Engineers) 295M composite signals”), 5:39 (“SMPTE 295M standard composite digital video signals are outputted from the camera control unit **20**”).

Petitioner appears to also contend that Okada alternatively teaches the recited camera head. *See* Pet. 53 (claim chart citing Ex. 1104, 4:4–15). Based on the cited portion of Okada, we are persuaded that Okada alternatively teaches the recited camera head. *See id.*; Ex. 1104, 4:4–15.

As discussed above, it is not sufficient for Petitioner to demonstrate that each of the components is known. *See KSR*, 550 U.S. at 418. Petitioner must also provide “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Kahn*, 441 F.3d at 988. Petitioner does not, however, provide any rationale for combining Nakamura and Okada to obtain the recited camera head (i.e., an endoscopic video camera). Petitioner’s citation to Okada as teaching this feature appears in a claim chart without further explanation. *See* Pet. 53; *see also id.* at 40 (“Fourth, Nakamura discloses a ‘camera head, connected to said cable, for providing the stream of digital video data,’ as recited by claims 1, 9, and 15.”). Accordingly, we are not persuaded that Petitioner has provided adequately articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *See Kahn*, 441 F.3d at 988.

In view of the foregoing, we determine that Petitioner has not established a reasonable likelihood of prevailing in showing that independent claims 1, 9, 15, and 21 would have been obvious over Nakamura and Okada. Claims 2, 10–12, 16, and 22 depend from claims 1, 9, 15, and 21. We therefore also determine that Petitioner has not established a reasonable likelihood of prevailing in showing that these depending claims would have been obvious over Nakamura and Okada.

G. Obviousness over Nakamura, Okada, and Adler

Petitioner argues that claims 3–8, 13, 14, 19, 20, 25, and 26 of the ’310 patent would have been obvious over Nakamura, Okada, and Adler. *See* Pet. 55–57. These claims depend from claims 1, 9, 15, and 21. As discussed above, we determine that Petitioner has not established a

reasonable likelihood of prevailing in showing the unpatentability of claims 1, 9, 15, and 21 based on Nakamura and Okada. For the same reasons, we also determine that Petitioner has not established a reasonable likelihood of prevailing in showing the unpatentability of depending claims 3–8, 13, 14, 19, 20, 25, and 26 based on Nakamura, Okada, and Adler.

H. Obviousness over Nakamura, Okada, and TI-LVDS

Petitioner argues that claims 3–8, 13, 14, 19, 20, 25, and 26 of the '310 patent would have been obvious over Nakamura, Okada, and TI-LVDS. *See* Pet. 57–59. These claims depend from claims 1, 9, 15, and 21. As discussed above, we determine that Petitioner has not established a reasonable likelihood of prevailing in showing the unpatentability of claims 1, 9, 15, and 21 based on Nakamura and Okada. For the same reasons, we also determine that Petitioner has not established a reasonable likelihood of prevailing in showing the unpatentability of depending claims 3–8, 13, 14, 19, 20, 25, and 26 based on Nakamura, Okada, and TI-LVDS.

III. CONCLUSION

For the foregoing reasons, we are not persuaded that Petitioner has demonstrated a reasonable likelihood that it would prevail on any of the challenges to patentability of the '310 patent set forth in the Petition.

IV. ORDER

For the reasons given, it is
ORDERED that the Petition is *denied* as to all challenged claims, and no trial is instituted.

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Patent 7,471,310 B2

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