

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION NO. 12-12243-DPW

EXERGEN CORPORATION

v.

BROOKLANDS, INC.

---

CIVIL ACTION NO. 13-10628-RGS

EXERGEN CORPORATION

v.

KAZ USA, INC.

---

CIVIL ACTION NO. 13-11243-DJC

EXERGEN CORPORATION

v.

THERMOMEDICS, INC. and  
SANOMEDICS INTERNATIONAL HOLDINGS, INC.

---

MEMORANDUM AND ORDER ON CLAIM CONSTRUCTION

August 15, 2014

STEARNS, D.J.

In these three intellectual property cases, plaintiff Exergen Corporation accuses defendants Brooklands, Inc.; Kaz USA, Inc.; and Thermomedics, Inc. and Sanomedics International Holdings, Inc. (collectively the Sanomedics defendants) of infringing U.S. Patents Nos. 6,292,685 (the '685 patent) and 7,787,923 (the '923 patent).<sup>1</sup> Before the court are the parties' briefs on claim construction.<sup>2</sup> The court heard argument, pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996), on August 13, 2014.

### BACKGROUND<sup>3</sup>

The '685 and '938 patents are both entitled "Temporal Artery Temperature Detector" and list Dr. Francesco Pompei as the inventor. The '685 patent was issued on September 18, 2001, and the '938 patent was issued on August 31, 2010. The '938 patent is a continuation of the application that matured into the '685 patent, and the two patents share virtually the same specification.

---

<sup>1</sup> Exergen asserts only the '938 patent against Brooklands.

<sup>2</sup> The cases are pending in three separate sessions in this court. The parties agreed to a joint *Markman* proceeding in this session.

<sup>3</sup> The court's description of the highlighted features of the patented invention is not intended to act as a limitation on the scope of the patents' claims.

Both patents involve the measuring of a human being's core, or deep body temperature. See '685 patent, col. 1, lls. 19-20. Arteries, because they "receive blood directly from the heart, [] are a good choice for detecting core temperature." '685 patent, col. 2, lls. 14-15. However,

an artery at the extremities of the body, such as those felt as pulse points at the wrist or ankle, are highly subject to vasoconstriction. This means, for example, that when an individual is extremely sick, in shock, or even just cold or nervous, the arteries constrict to reduce the flow of blood to that area as a means of retaining heat, or as in the case of shock, in an effort to redirect the blood to more critical areas of the body. This can result in a large temperature change at the artery which is a local artifact only and not representative of core temperature.

*Id.* col. 2, lls. 15-26.

The patents seize on the fact that the external branch of the temporal artery, which "travels in front of the ear and up into the soft temple area, terminating in a fork directly between the skin and the skull adjoining the eyebrow", *id.* col.2, lls. 46-48, is "as short a distance from the heart as possible, with a high and relatively constant blood flow, and [] is readily accessible on all individuals"; it therefore provides a reliable source for core temperature measurement. *Id.* col. 2, lls. 29-32. The patents disclose methods and apparatuses for detecting the temperature at the forehead over the temporal artery, and for computing an internal body temperature based on "a weighted difference of surface temperature

and ambient temperature with a weighting coefficient  $h/pc$ .<sup>4</sup> *Id.* col. 3, lls. 14-16. Claims 1 and 14 of the '685 patent and claims 39 and 54 of the '938 patent are representative:

1 ('685 patent). A method of detecting human body temperature comprising:

laterally scanning a temperature detector across a forehead; and

providing a peak temperature reading from plural readings during the step of scanning.

14 ('685 patent). A method of detecting human body temperature comprising:

detecting temperature at a forehead through a lateral scan across the temporal artery; and

computing an internal body temperature of the body as a function of ambient temperature and sensed surface temperature.

39 ('938 patent). A body temperature detector comprising:

a radiation detector;

electronics that measure radiation from at least three readings per second of the radiation detector as target skin surface over an artery is viewed and that process the detected radiation to provide a body temperature approximation based on heat flow from an internal body temperature to ambient.

---

<sup>4</sup> In the coefficient  $h/pc$ , "h is a heat transfer coefficient between the target surface and ambient, p is perfusion rate and c is blood specific heat." *Id.* col. 3, lls. 25-27.

54 (938 patent). A method of detecting human body temperature comprising:

measuring radiation as target skin surface of the forehead is viewed, and

processing the measured radiation to provide a body temperature approximation based on heat flow from an internal body temperature to ambient temperature.

## DISCUSSION

Claim construction is in most instances a question of law for determination by the court. *See Markman*, 517 U.S. at 388-389. Claim terms are generally given their ordinary and customary meaning to a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-1313 (Fed. Cir. 2005) (en banc) (citations omitted). “The person of ordinary skill in the art is deemed to read the claim term . . . in the context of the entire patent, including the specification.” *Id.* at 1313.

The patent specification “is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term.” *Id.* at 1315, quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Because the purpose of the specification is to “teach and enable those of skill in the art to make and use the invention and to provide the best mode for doing so,”

*Phillips*, 415 F.3d at 1323, it is “entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims.” *Id.* at 1317.

In addition to the patent’s specification, although “it often lacks the clarity of the specification and thus is less useful for claim construction purposes,” the prosecution history “can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Id.* Although not as reliable as the patent and its prosecution history, the court may also consider extrinsic evidence “if the court deems it helpful in determining the true meaning of language used in the patent claims.” *Id.* at 1318. Ultimately, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention [in the specification] will be, in the end, the correct construction.” *Id.* at 1316.

To ease the burden on the court of construing the number of claims at issue, the parties have grouped the disputed terms under six broad categories, which the court will adopt.

#### Group I—Temperature and Measuring Terms

*'938 patent – “measuring temperature of a region of skin of the forehead” & “measuring radiation as target skin surface of the forehead is viewed”*

The terms “measuring temperature of a region of skin of the forehead,” and “measuring radiation as target skin surface of the forehead is viewed,” appear in claims 51 and 54 of the '938 patent. Claim 54 is recited *supra*.

51 ('938 patent). A method of detecting human body temperature comprising:

measuring temperature of a region of skin of the forehead; and

processing the measured temperature to provide a body temperature approximation based on heat flow from an internal body temperature to ambient temperature.

(Emphasis added to indicate disputed claim term).

Exergen proposes that these terms be given their ordinary and customary meanings, consistent with the wording of the claim. Brooklands and the Sanomedics defendants<sup>5</sup> propose that both terms be construed to mean “scanning across the surface of the skin over the temporal artery to detect the peak temperature reading from a plurality of surface temperature readings.” Defendants’ reading is based on the argument that Exergen, in statements that it made in the patent

---

<sup>5</sup> Kaz takes no position regarding these two terms.

specifications and prosecution history, disavowed the scope of “forehead,” save for the skin over the temporal artery, and disavowed the scope of “measuring,” other than scanning to detect the peak temperature from a plurality of temperature readings.

Claim scope is disavowed “[w]here the specification [or prosecution history] makes clear that the invention does not include a particular feature [such that] that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.” *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001). The standard for finding disavowal of claim scope is “exacting.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1366 (Fed. Cir. 2012). Patentees may demonstrate an “intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification *expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.*” *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002) (emphasis added); *see also Home Diagnostics, Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1358 (Fed. Cir. 2004) (“Absent a *clear* disavowal in the specification or the prosecution history,



the patentee is entitled to the full scope of its claim language.”) (Emphasis added).

Defendants contend that Exergen’s claim scope disavowal is clear and unambiguous. The argument is based on the following disclosures. With respect to “forehead,” the Abstract of the patents states that “[b]ody temperature measurements are obtained by scanning a thermal radiation sensor *across the side of the forehead over the temporal artery.*” (Emphasis added). The first sentence of the Summary of the Invention characterizes “[t]he present invention” as “provid[ing] for particularly convenient temperature readings of neonate, child and adult temperatures by detecting the temperature of the forehead *directly over the superficial temporal artery.*” ’938 patent, col. 2, lls. 20-23 (emphasis added). See *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007) (“When a patent thus describes the features of the ‘present invention’ as a whole, this description limits the scope of the invention.”). Likewise, Figure 1 is described as “illustrat[ing] an infrared thermometer scanning the *temporal artery in the forehead in accordance with the present invention.*” *Id.* col. 3, lls. 55-58 (emphasis added).

The specification extols the particular benefits of the temporal artery as a site providing core temperature measurements of an accuracy superior to that of other possible sites. See '938 patent, col. 2, lls. 25-35 (arteries at the extremities are subject to vasoconstriction and therefore variable temperatures); *id.* col. 2, lls. 48-51 (the carotids, although directly extending from the aorta, are at best “partially embedded” and “not accessible at the skin”). In contrast,

[d]emonstrably, the temporal artery is very easily accessible; in fact in most individuals, it is usually quite visible. Terminating in a two-prong fork, it easily doubles the assurance of measuring the correct area. Touching it does not present a risk of injury. There are no mucous membranes present, thus eliminating the risk of contaminates such as those found in the mouth and rectum. And, despite lying so close to the skin surface, the temporal artery perfusion, which is the flow of blood per unit volume of tissue, remains relatively constant and so ensures the stability of blood flow required for our measurement.

*Id.* col. 2, lls. 57-67.

Similarly, during the prosecution of the asserted patents and those in the same family sharing the same specification, Exergen promoted the invention's ability to capitalize on aspects of the temporal artery that make it particularly sensitive to temperature measurement. See, e.g., '938 patent prosecution history (PH), 3/19/2010 amendment at 17 (discussing asserted claims 51 and 54 and referring to Exergen's

Temporal Artery Thermometer—“[i]t was only after years of research that Applicant recognized that a certain ‘region of skin of the forehead’ may be used to obtain accurate internal body temperature.”); ’685 patent PH, 8/2/2000 Amendment at 8 (“[T]he superficial temporal artery, illustrated in Figure 1, offset from the center of the forehead where contact forehead temperatures are typically made, provides an exceptionally reliable temperature reading. Once Mr. Pompei recognized the significance of superficial temporal artery measurement, he had to devise a device and method by which an untrained individual could reliably obtain that temperature reading despite the unreliable surrounding temperatures of the forehead.”); United States Patent Application No. 09/923,240 (the ’240 application) PH, 5/29/2003 Amendment at 2 (“Walsall et al. has been cited for measurement of the forehead. However, forehead measurements are typically taken at the center of the forehead and there is no suggestion in Walsall of taking a measurement to the side of the forehead over the temporal artery.”).

With respect to “measuring,” the Abstract discloses that “[b]ody temperature measurements are obtained by *scanning a thermal radiation sensor* across the side of the forehead over the temporal artery. *A peak temperature measurement* is processed to compute an internal

temperature of the body . . . .” (Emphasis added). Figure 1 is described as “*scanning* the temporal artery.” (Emphasis added). ’938 patent, col. 3, lls. 56-57. Scanning and peak detection is also the disclosed method for locating the temporal artery. “To locate the temporal artery, a temperature detector, preferably a radiation detector [], is scanned across the side of the [] forehead over the temporal artery while electronics in the detector search for the peak reading which indicates the temporal artery.” *Id.* col. 4, lls. 18-22. The specification distinguishes prior art detectors on the basis of the scan feature. *Id.* col. 8, l. 66-col. 9, l. 2 (“However, none of those designs provide the unique combination of elements which enable consistent measurements of core temperature by *scanning* across a superficial artery.”) (Emphasis added).

Likewise, the prosecution history emphasizes the inventiveness of scanning and peak detection. *See, e.g.*, ’938 patent PH, 3/19/2010 Amendment at 13 (“Seacord does not teach or suggest ‘moving a radiation detector to scan skin over an artery and measure radiation emitted from the skin over the artery.’”); ’685 patent PH, 4/12/01 Amendment at 6 (“In the context of the present disclosure, peak temperature reading is to indicate the temperature of the temporal artery across which the detector is scanned.”).

With this sampling of defendants' evidence in mind, the court will turn first to the prosecution history, heeding the caution that

while the prosecution history can inform whether the inventor limited the claim scope in the course of prosecution, it often produces ambiguities created by ongoing negotiations between the inventor and the PTO. *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1289 (Fed. Cir. 2009). Therefore, the doctrine of prosecution disclaimer only applies to unambiguous disavowals. *Id.*

*Grober v. Mako Prods., Inc.*, 686 F.3d 1335, 1341 (Fed. Cir. 2012), *reh'g denied* (Sept. 14, 2012). When viewed in the context of the "ongoing negotiations between the inventor and the PTO," the prosecution history establishes no unambiguous disavowal. The referenced discussion of "a certain region of the forehead" in the '978 patent prosecution history occurred while Exergen sought to distinguish its prior art patents directed to tympanic temperature thermometers. See '978 patent PH, 3/19/2010 Amendment at 17. Because the prior art involved another body site, there was no imperative for Exergen to cede the claim scope of "forehead" to overcome this prior art. Although Exergen touted the desirability of the temporal artery for temperature measurement over the forehead generally,

[m]ere criticism of a particular embodiment encompassed in the plain meaning of a claim term is not sufficient to rise to the level of clear disavowal. *Epistar Corp. v. Int'l Trade Comm'n*, 566 F.3d 1321, 1335 (Fed. Cir. 2009) (holding that

even a direct criticism of a particular technique did not rise to the level of clear disavowal). In *Spine Solutions, Inc. v. Medtronic Sofamor Danek USA, Inc.*, [620 F.3d 1305, 1315 (Fed. Cir. 2010),] we explained that even where a particular structure makes it “particularly difficult” to obtain certain benefits of the claimed invention, this does not rise to the level of disavowal of the structure.

*Thorner*, 669 F.3d at 1366. Similarly, the cited '685 prosecution statements were made in the context of overcoming an obviousness rejection based on a combination of several prior art references. See '685 patent PH, 8/2/2000 Amendment at 7-8. In these statements, Exergen did not unambiguously cede the scope of “forehead,” other than to observe that “exten[ding] the peak detection technique from a tympanic membrane measurement to a temporal artery measurement would not have been obvious.” *Id.* at 8. Exergen also similarly distinguished Walsall in the context of a (non)obviousness analysis. See '240 application, 5/29/2003 Amendment at 3 (“[N]one of the references [including Walsall] teach a body temperature detector which is programmed to provide a temperature display based on a model of heat balance relative to arterial temperature as a temperature detector is scanned across an artery.”).

The “measuring” prosecution history statements, on close examination, also do not unambiguously reflect an intent to disavow

claim scope. Although Exergen distinguished Seacord on the basis of scanning, “Seacord merely describes an ear thermometer that is inserted into the ear to measure the infrared radiation emitted by the tympanic membrane.” ’938 patent PH, 3/19/2010 Amendment at 12. Scanning, in other words, is not the only distinction between the relevant claims and Seacord. The scanning and peak detection discussion of the ’685 patent prosecution history occurred in the context of overcoming anticipation rejections for claims 1 and 2, *see* ’685 patent PH, 4/12/2001 Amendment at 5-6, which explicitly recite scanning and peak detecting elements, *see* ’685 patent, claims 1-2, and thus do not restrict other claims based on the same specification.

The cited statements in the specification also fall short of an unambiguous disavowal. The specification, by its own terms, contemplates measuring the forehead generally, even though the temporal artery is the preferred region for measuring purposes. *See* ’938 patent, col. 3, lls. 1-3 (“In accordance with one aspect of the invention, a temperature sensor is scanned across the forehead, preferably in the vicinity of the temporal artery.”). With respect to scanning and peak detection, although it is a feature that distinguishes the claimed invention from prior art, it is not the only such feature. *See id.*, col. 9, lls.

2-7 (“Specifically, the Exergen D501 Industrial Temperature Detector used in [sic] emissivity compensating cup and provided a peak temperature based on about ten temperature readings per second. However, that device did not perform a heat balance computation and was thus not suited to measurement of core temperature.”).

Most significantly, the claims of the '938 patent refute the contention that the inventor intended to disavow the scope of “forehead” and “measuring” as defendants contend. With respect to “forehead,” claims 53 and 56, which depend on claims 51 and 54 respectively, specifically claim “wherein the region of the skin is over a temporal artery.” As for “measuring,” claim 26 shares the same “measuring radiation as target skin surface [] is viewed” limitation with claim 54. Claim 33, which depends on claim 26, recites “the method of claim 26 further comprising moving the radiation detector to scan the region of the skin.” Claim 34, which depends on claim 33, also recites “measuring radiation emitted in at least three readings per second.” Claim 35, which depends on claim 34, further recites “providing a peak temperature reading.”

Under the doctrine of claim differentiation, “two claims of a patent are presumptively of different scope.” *Kraft Foods, Inc. v. Int’l Trading Co.*, 203 F.3d 1362, 1366 (Fed. Cir. 2000). While defendants correctly



point out that the claim differentiation presumption may be overcome if warranted by the specification or the prosecution history, *Seachange Int'l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1369 (Fed. Cir. 2005), the presumption is strongest, where, as here, “the limitation that is sought to be ‘read into’ an independent claim already appears in a dependent claim.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004). Indeed,

[a]lthough, in some cases [overcoming the presumption] *might* be possible, the doctrine of claim differentiation “normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.” *Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971-972 (Fed. Cir. 1999) (stating that this interpretative tool stems from “the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope”). In sum, the argument that dependent claims, which require tenacious engagement, “more clearly . . . distinguish from the art” does not mean that claims from which those claims depend are equally limited.

*Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1123 (Fed. Cir. 2004) (emphasis in original).

Here, the very existence of narrower dependent claims having the same scope as defendants’ proposed construction reflects Exergen’s intent

that the independent claims “not [be] equally limited.”<sup>6</sup> Because defendants’ evidence does not satisfy the “exacting” standard for claim scope disavowal, the court will construe “measuring temperature of a region of skin over the forehead,” and “measuring radiation as target skin surface of the forehead is viewed,” according to their plain meaning as written.<sup>7</sup>

*'938 patent – “measured temperature” & “measured radiation”*

The terms “measured temperature” and “measured radiation” appear in claims 51 and 54 of the '938 patent. Brooklands and the Sanomedics defendants argue that because “measuring” necessarily means “scanning . . . to detect the peak temperature . . . ,” the “measured temperature/radiation” is necessarily “the detected peak surface temperature reading.” As the court finds that there is no clear and unambiguous disavowal of the “measuring” limitation, the court will also construe these claim terms to convey their plain meaning as written.

---

<sup>6</sup> This does not mean, however, that the broader scope of the independent claims is immune from challenges to their validity. This court’s role is limited to construing the language of the claims. In doing so, it passes no judgment on enablement, written description, anticipation, obviousness, patentable subject matter, or any other grounds of invalidity not expressly discussed in this opinion.

<sup>7</sup> Where, as here, the claim language is clear, the court sees no need to attempt to improve on the wording of a term as any rephrasing by the court may inadvertently inject confusion or alter the claim scope.

*'938 patent – “body temperature approximation”*

Although the parties agree that “human body temperature” should be construed as the “core temperature of a human being,” they disagree over the construction of the term “body temperature approximation.” The term is a limitation in claims 1-6, 11, 14-19, 21, 23, 26-31, 36, 39, 43, 45, 48, 51, 54, 57, and 60-62 of the '938 patent. Claims 51 and 54, recited, *supra*, are representative.

Exergen contends that “body temperature approximation” is used in its ordinary sense in the patent. For support, it relies on the passage in the specification that defines core temperature “as a term used to describe deep body temperature” and then goes on to say that it “is approximated by oral, rectal, ear, pulmonary artery, esophageal and bladder temperatures and the like.” '938 patent, col. 1, lls. 30-32. Thus, Exergen proposes that “body temperature approximation” should be construed as “a temperature approximating human body temperature, including temperatures such as arterial core, tympanic (eardrum), oral, rectal, pulmonary artery, esophageal, bladder, axillary (underarm), and temporal artery.”

Defendants offer two narrower constructions. Kaz argues that because “body temperature approximation” is determined in the claims by using the measured skin temperature and ambient temperature, and

because the only arguably enabled formula disclosed in the patents is one for calculating core temperature,<sup>8</sup> “body temperature approximation” should be construed to mean “core temperature.” Kaz draws an analogy to the claim held invalid in *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336 (Fed. Cir. 2005). In *LizardTech*, the Federal Circuit held that a generic claim directed to seamless wavelet transformations was invalid for inadequate written description because the specification disclosed only a single method for forming seamless wavelet transformations that would not have enabled a person of ordinary skill in the art would to form seamless wavelet transformations generally. *Id.* at 1345.

Kaz’s reliance on *LizardTech*, however, is misplaced. The Federal Circuit did not apply the invalidity finding of the generic claim to claim construction in attempt to rehabilitate claim scope (as Kaz proposes here). Indeed, “[e]nablement concerns do not justify departing from the

---

<sup>8</sup> The patents disclose that based on “well known” heat balance principles and equations (because human skin maintains a generally constant temperature, the heat lost as a result of thermal radiation is equal to the heat gained from the flow of warm blood from the heart), see ’685 patent, col. 6, l. 58-col. 7, l. 32, the formula derived for computing core temperature is  $T_c = (h/pc)(T_s - T_a) + T_s$ , *id.* col. 7, l. 45, and that an empirically determined value for  $1+h/pc = 0.0035888T_s^2 - 0.707922T_s + 36.0981$ . *Id.* col. 8, l. 45.

plain and ordinary meaning of [a claim term].<sup>9</sup> *Hill-Rom Servs., Inc. v. Stryker Corp.*, 2014 WL 2898495, at \*4 (Fed. Cir. June 27, 2014). Moreover, Kaz's proposed construction equates "body temperature approximation" with the parties' agreed upon construction for "body temperature," and reads out the concept of an "approximation." See *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 93 F.3d 1572, 1579 (Fed. Cir. 1996) (different claim terms are presumed to have different meanings).

For their part, Brooklands and the Sanomedics defendants propose that "body temperature approximation" should be construed as "the temporal artery temperature." For support, they rely on the title of the patents—"Temporal Artery Temperature Detector"—and statements made in the specification, prosecution history, and during prior litigation highlighting as a primary inventive aspect the measuring of core body temperature at the skin over the temporal artery (as compared to prior art methods of measuring temperature at, for example, the tympanic membrane).

---

<sup>9</sup> Whatever the merit of Kaz's (non)enablement contentions, as the court noted in its August 1, 2014 Order (Dkt. # 85), they are prematurely raised at this juncture.

This evidence, however, is not sufficient to meet the “exacting” standard to disavow other temperatures that may approximate body temperature. *Thorner*, 669 F.3d at 1366. Instead of “expressions of manifest exclusion or restriction,” *Teleflex*, 299 F.3d at 1327, the specification and claims reflect the patentee’s intent to include in the “body temperature approximation” temperatures other than the one measured at the temporal artery. *See, e.g.*, ’938 patent, col. 1, lls. 30-32 (core temperature may be approximated by the temperature at a variety of body sites); *id.*, col. 3, ll. 6-7 (“The method can be extended to other arteries near the skin such as in the axilla.”); *id.*, claims 26 & 48 (processing radiation detected at “a target skin surface over an artery” (not specifying a particular artery) to determine a “body temperature approximation”); and *id.*, claims 27-28, and 61-62 (“body temperature approximation” explicitly corresponding to oral and rectal measurements/temperatures). Moreover, as Kaz points out, “body temperature approximation” is, in some claims, not a value detected at a body site, but a value computed using the skin and ambient temperature measurements.

In sum, defendants’ evidence and arguments do not demonstrate that “body temperature approximation” was used in the ’938 patent in any

way other than its ordinary and customary meaning. Exergen's proposal comes closer to the mark, but its listing of specific body sites implies that a temperature approximating the human body temperature must necessarily be the temperature at a particular body site, whereas the "human temperature approximation" may also be a computed value. Thus, the court will construe "body temperature approximation" to mean "a temperature approximating human body temperature" encompassing all such possible temperatures.

#### Group Two—Processing/Computation Terms

'938 patent— *“processing the measured [temperature/radiation] to provide a body temperature approximation based on heat flow from an internal body temperature to ambient temperature”; “electronics that . . . process the detected radiation to provide a body temperature approximation based on heat flow from an internal body temperature to ambient”; “the body temperature approximation is [determined] based on heat flow from the body to ambient”*

These terms reciting the process of determining “a body temperature approximation based on heat flow from an internal body temperature to ambient temperature” appear in claims 11, 23, 36, 39, 48, 51, 54 of the '938 patent. Claims 51 and 54, which are representative, are recited *supra*.

Exergen proposes that these terms be construed consistent with their ordinary and customary meaning – that is, “a body temperature

approximation” is determined by “taking in account ambient temperature and thermodynamic principles of heat transfer within a body to the surrounding environment.”<sup>10</sup>

Kaz contends that these terms are indefinite because under the laws of physics, heat does not flow from one temperature to another. Rather, heat flows from a body or region of space to another body or region. Thus, the claim terms that require “heat flow from internal body temperature to ambient temperature” are meaningless and therefore indefinite. In the alternative, Kaz posits that these terms must be construed to require “calculating the core temperature from the measured temperature (or radiation) using an equation that models heat flow from the body’s core to the surrounding environment.” Kaz bases this argument on the contention that the disclosed equation for computing core body temperature is the only arguably enabled method for determining a “body temperature approximation.”

Exergen faults Kaz for not supporting its contention with an expert declaration. Although such a declaration might be of assistance in understanding a matter of technical complexity, it would add little to the

---

<sup>10</sup> At the *Markman* hearing, Exergen stated that its proposed construction is not intended to alter the claim scope and that it would agree to the original claim language as a proper construction.



comprehension of basic principles of physics. Kaz's argument, while accurate in so far as it goes, ignores the fact that temperature is a numeric measurement of heat. The '938 patent clearly recognizes that heat flows from one body to another (or the environment), *see* '938 patent, col. 7, lls. 22-24 ("Heat flow from the core arterial source to the skin is via blood circulation 32, which is many times more effective than tissue conduction."). The patent describes heat flow from body temperature to ambient temperature as shorthand for heat flows from the body at a body temperature to the environment at an ambient temperature. *See id.*, col. 1, lls. 40-43 ("The arterial heat balance approach is based on a model of heat flow through series [sic] thermal resistances from the arterial core temperature to the ear skin temperature and from the ear skin temperature to ambient temperature.").

In addition, as the court previously noted, "body temperature approximation" encompasses more than just the core body temperature. As Exergen points out, the "processing/determining" limitation is broader than simply making a calculation using the disclosed equation. U.S. Patent No. 5,012,813 (the '813 patent), which is incorporated in the '938 patent specification, *id.*, col. 1, lls. 48-52, discloses the use of a "look up

table” to obtain computed temperature values.<sup>11</sup> See '813 patent, col. 10, lls. 48-50. Enablement, which is the real issue Kaz is attempting to raise, is a matter to be resolved at summary judgment or trial.

Brooklands and the Sanomedics defendants<sup>12</sup> argue that these terms and the asserted claims are invalid because they are indefinite and/or lacking in adequate written description or enablement because the claims fail to recite a step to measure the ambient temperature. In the alternative, Brookland and the Sanomedics defendants propose that the terms be construed as “detecting the ambient temperature to which the scanned skin surface is exposed and inputting that ambient temperature and the measured temperature (or radiation) into heat flow model equations to calculate and display the body temperature approximation.”

---

<sup>11</sup> At the *Markman* hearing, defendants argued that the look-up tables themselves are pre-computed using equations and therefore equations are necessarily a limitation of the claims. See '813 patent, col. 10, lls. 48-50. That may be so, however, what is important is that the claims do not require that a device performing the asserted methods necessarily itself perform a calculation using a given equation.

<sup>12</sup> Brooklands and the Sanomedics defendants addressed the terms in claims 51 and 54, in so far as they were asserted against them. However, their arguments would have force with respect to all the terms in this group.

The lack of an explicit step for obtaining an ambient temperature is not an argument for indefiniteness – Brooklands and the Sanomedics defendants do not suggest that a person of ordinary skill in the art would not understand the language of the claim terms themselves. The argument, rather, is that the person skilled in the art would not know how to effectively practice the claims based on the specification. As with Kaz, Brooklands and the Sanomedics defendants may raise this written description/enablement argument at summary judgment or trial.<sup>13</sup>

Brooklands and the Sanomedics defendants' proposed alternative construction incorporates several additional limitations into the claim terms that are not reflected by the plain meaning of these terms. For example, the claims do not require displaying the resultant body temperature approximation. And, as noted before, the claims also do not require an explicit calculation using an equation.

Consistent with the foregoing analysis, the court construes the disputed terms as follows:

---

<sup>13</sup> Although the parties have not discussed the person of ordinary skill in the art and his/her relevant educational background, experience, and knowledge, it would be difficult for the court to imagine such a person in the art of thermometry not to know how to obtain an ambient temperature.

Claim Term	Construction
“processing the measured [temperature/radiation] to provide a body temperature approximation based on heat flow from an internal body temperature to ambient temperature”	processing the measured [temperature/radiation] to provide a body temperature approximation based on heat flow from an internal body temperature to ambient temperature
“electronics that . . . process the detected radiation to provide a body temperature approximation based on heat flow from an internal body temperature to ambient”	electronics that . . . process the detected radiation to provide a body temperature approximation based on heat flow from an internal body temperature to ambient
“the body temperature approximation is [determined] based on heat flow from the body to ambient”	the body temperature approximation is [determined] based on heat flow from the body to ambient

*'938 patent – “electronically determining a body temperature approximation, distinct from skin surface temperature, from the radiation detector”; “determining the body temperature approximation based on ambient temperature to which the human body is exposed”; “providing a body temperature approximation based on ambient temperature to which the human body is exposed and the peak temperature reading”; “evaluating a plurality of radiation readings to determine the body temperature approximation”; “providing a body temperature approximation from a peaking temperature reading from plural readings taken from plural locations during the scan”*

*'685 patent – “comput[es/ing] an internal temperature of the body as a function of ambient temperature and sensed surface temperature”; “computing an internal body temperature as a function of ambient temperature and the peak temperature reading”<sup>14</sup>*

---

<sup>14</sup> Brooklands takes no position regarding these terms. The Sanomedics defendants dispute only “electronically determining a body temperature approximation, distinct from skin surface temperature, from

Exergen and Kaz dispute the scope of these processing/computing terms. The '938 patent terms appear in claims 1, 5, 18, 26, 29-30, 36, 42, 57, and 60. Claim 1 is representative.

1 (938 patent). A method of detecting human body temperature comprising moving a radiation detector to scan across skin over an artery and measure radiation as target skin surface over the artery is viewed, and electronically determining a body temperature approximation, distinct from skin surface temperature, from the radiation detector as the target skin surface over the artery is viewed.

(Emphasis added to highlight disputed claim term).

The '685 patent claims appear in claims 4, 25, 30, 32-33, and 35-37. Claims 4 (which depends on claim 1, recited *supra*) and 35 are representative.

4 (685 patent). A method as claimed in claim 1 further comprising computing an internal body temperature as a function of ambient temperature and the peak temperature reading.

35 (685 patent). A body temperature detector system comprising:

---

the radiation detector,” based on the same argument advanced regarding the lack of an explicit step to obtain an ambient temperature. In the alternative, the Sanomedics defendants propose to construe the term as “electronically determining the temperature of the temporal artery, distinct from skin surface temperature, using heat flow model equations which include an ambient temperature measurement.” The court has already rejected equating “body temperature approximation” with the temporal artery temperature, and the requirement of using equations, and will not repeat its reasoning here.

a temperature detector; and

electronic circuitry which measures peak temperature from at least three readings per second during scan of the temperature detector across an artery and which processes the measured peak temperature to provide a temperature display based on a model of heat balance relative to a detected arterial temperature, the electronic circuitry computing an internal temperature of the body as a function of ambient temperature and sensed surface temperature, the function including a weighted difference of surface temperature and ambient temperature, the weighting being a linear approximation having a minimum between 96° F. and 97° F.

(Emphases added to highlight disputed claim terms).

Exergen proposes to construe the terms according to their ordinary and customary meaning. Kaz injects two additional narrowing limitations – that “body temperature approximation” be construed as the core body temperature (a proposal the court has declined to adopt), and that the processing/computing terms be construed as based on a “mathematical relationship.” Although presumably any functional relationship between body temperature and the measured skin and ambient temperatures will be mathematical in nature,<sup>15</sup> nothing in the

---

<sup>15</sup> At the *Markman* hearing, the attorney for the Sanomedics defendants made the interesting suggestion that look-up tables may not

patents explicitly disavows other types of relationships.<sup>16</sup> According, the court will construe this group of terms as follows:

Claim Term	Construction
“electronically determining a body temperature approximation, distinct from skin surface temperature, from the radiation detector”	using electronics to determine a body temperature approximation, distinct from skin surface temperature, based on readings from the radiation detector
“determining the body temperature approximation based on ambient temperature to which the human body is exposed”	determining the body temperature approximation based on ambient temperature to which the human body is exposed
“providing a body temperature approximation based on ambient temperature to which the human body is exposed and the peak temperature reading”	providing a body temperature approximation based on ambient temperature to which the human body is exposed and the peak temperature reading
“evaluating a plurality of radiation readings to determine the body temperature approximation”	evaluating a plurality of radiation readings to determine the body temperature approximation
“providing a body temperature approximation from a peak temperature reading from plural readings taken from plural locations during the scan”	providing a body temperature approximation from a peak temperature reading from plural readings take from plural locations during the scan

---

reflect pre-computed values based on an equation, but rather collated clinical measurements.

<sup>16</sup> Some claims, such as claims 33 and 35-37 of the '685 patent, expressly recite and describe a mathematical relationship.

“comput[es/ing] an internal temperature of the body as a function of ambient temperature and sensed surface temperature”	Comput[es/ing] an internal temperature of the body as a function of ambient temperature and sensed surface temperature
“computing an internal body temperature as a function of ambient temperature and the peak temperature reading”	computing an internal body temperature as a function of ambient temperature and the peak temperature reading

### Group Three–Artery Terms<sup>17</sup>

*'938 patent – “[the artery having] a relatively constant blood flow”*

The term “[the artery having] a relatively constant blood flow” is a limitation recited in claims 10, 22, 26, and 48 of the '938 patent. Claim 26 is representative.

26 (938 patent). A method of detecting human body temperature comprising, with a radiation detector, measuring radiation as target skin surface over an artery is viewed, the artery having a relatively constant blood flow, and electronically determining a body temperature approximation, distinct from skin surface temperature, from the radiation detector as the target skin surface over the artery is viewed.

(Emphasis added to highlight disputed claim term).

Because the specification identifies the temporal artery as an artery having relatively constant blood flow, Exergen proposes that the claim

---

<sup>17</sup> Brooklands takes no position regarding these claim terms.



term be construed as “blood flow having a stability comparable to that of the superficial temporal artery at the forehead.” Kaz, for its part, contends that because the claim term is one of degree, it is indefinite unless coupled to an objective standard determining its scope. See *Seattle Box Co. v. Indus. Crating & Packing, Inc.*, 731 F.2d 818, 826 (Fed. Cir. 1984). In the alternative, Kaz proposes that the term be construed as “blood flow that does not vary over time.” The Sanomedics defendants argue that because the claims are necessarily limited to the temporal artery, the term should be construed as “the temporal artery,” or alternatively, held indefinite and/or lacking in adequate written description and/or enablement because the specification provides no other example of arteries with relative constant blood flow.

The specification of the '938 patent does provide an objective standard for arteries “having relatively constant blood flow.” In discussing the suitability of the superficial temporal artery as a temperature measurement site, the specification notes that “there are no known arterial/venous anastomoses, that is, shunts between the artery and veins for regulation of skin temperature. Accordingly, *the blood flow is relatively stable, varying a maximum of only 50%* as opposed to as much as 500% in other areas of the skin.” '938 patent, col. 4, lls. 12-17

(emphasis added). Thus, the court will construe “[the artery having] a relatively constant blood flow” to mean “[the artery having] blood flow varying a maximum of 50%.”

*'938 patent – “target (skin) surface (area) over an/the artery” and “as target skin surface over an artery is viewed”*

The claim terms “target (skin) surface (area) over an/the artery” and “as target skin surface over an artery is viewed” are recited in claims 1, 26, 39, and 48 of the '938 patent. Claim 26, recited *supra*, is representative.

Exergen and Kaz agree that these terms should be construed according to their ordinary and customary meaning, that is “(as) a region of skin over an artery (is viewed).” The Sanomedics defendants argue that because the specification identifies only the temporal artery as a viable location for temperature measurement, *see* '938 patent, col. 2, lls. 23-67, the terms should be construed as “as target skin over the temporal artery is viewed.” Alternatively, the Sanomedics defendants contend that the terms are indefinite and/or lacking in adequate written description or enablement.

Although the specification describes the characteristics of the temporal artery as being particularly suitable for temperature measurement, the patent does not limit its measurement methods to the temporal artery. For example, the patent explicitly states that “[t]he

method [of scan and peak detection] can be extended to other arteries near the skin such as in the axilla.” *Id.* col. 3, lls. 6-7. Thus, the court will construe “target (skin) surface (area) over an/the artery” and “as target skin surface over an artery is viewed” as written.<sup>18</sup>

*'685 patent – “measuring temperature of the temporal artery through skin” and “temporal artery temperature is measured”*

The terms “measuring temperature of the temporal artery through skin” and “temporal artery temperature is measured” appear in claims 27 and 28 of the '685 patent. Claim 27 is representative:

27 (685 patent). A method of detecting human body temperature comprising measuring temperature of the temporal artery through skin.

(Emphasis added to highlight disputed claim term).

Exergen proposes that these terms be given their ordinary and customary meaning – “measuring temperature of the temporal artery through skin by using an external temperature detector.” Kaz contends, based on the Federal Circuit’s opinion in a prior Exergen litigation, that the claim term requires an additional computational step. Kaz proposes that the term be construed as “measuring the temperature of the skin

---

<sup>18</sup> Again, the Sanomedics defendants’ enablement and written description arguments are matters deferred for summary judgment or trial.

above the temporal artery, and then performing a further computation to arrive at the temperature of the temporal artery.”

In *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312 (Fed. Cir. 2009), the Federal Circuit discussed the requirements of “measuring temperature of the temporal artery through skin” in the context of an infringement analysis. There, the Court found that the accused SAAT device did not infringe claim 27 because it measured the temperature of the skin over the temporal artery, which the Court held “is not a measurement of the temperature of the temporal artery beneath the skin.” *Id.* at 1325. The Court went on to further distinguish the SAAT device. “It requires a further computation to arrive at the temperature of the temporal artery, a computation that SAAT’s device indisputably does not perform.” *Id.*

The Federal Circuit did not inject a calculation requirement into the claim term. Rather, it explained that the SAAT device did not infringe because it not provide a measured temporal artery temperature, and moreover, it did not provide even a computed temporal artery temperature. What is clear from the prior decision is that measuring the temperature of the skin over the temporal artery, as the SAAT device did, is not part of the claim scope. Therefore, the court will construe

“measuring temperature of the temporal artery through skin” to be “measuring temperature of the temporal artery (and not of the skin covering the temporal artery) through skin.”

#### Group 4–Forehead Terms<sup>19</sup>

*'938 patent – “across skin of a region of a forehead”*

The term “across skin of a region of a forehead” appears in claim 57 of the '938 patent.

57 (938 patent). A method of detecting human body temperature comprising:

moving a temperature detector to scan across skin of a region of a forehead; and

providing a body temperature approximation from a peak temperature reading from plural readings taken from plural locations during the scan.

(Emphasis added to highlight disputed claim term).

Exergen proposes that this term be given its ordinary and customary meaning—“from one side of a region of skin of a forehead to another.” Relying on the prior Exergen litigation, Kaz contends that the term should be construed as “from one side of the forehead to the other.”

Kaz’s reliance, however, is misplaced. In *Exergen*, the Federal Circuit considered the term “across a forehead”<sup>20</sup> as it appears in claim 1 of

---

<sup>19</sup> Brooklands and the Sanomedics defendants take no position regarding these terms.

the '685 patent. The Court found that SAAT instructed users of its device to scan in an oval pattern in the temple region, which was not “across a forehead,” and that it therefore did not induce infringement. *Exergen*, 575 F.3d at 1322-1324. Here, the addition of the language “a region of a forehead” narrows the claim term to only a portion of the forehead. Moreover, as Exergen points out, interpreting this claim term to require scanning across the entire forehead would read out a preferred embodiment of scanning across the portion of the forehead over the temporal artery. See '938 patent, Figure 1. Therefore, the court will construe this “across skin of a region of a forehead” as “from one side of a region of skin of a forehead to another.”

#### Group Five—Reading Terms<sup>21</sup>

*'938 patent – “the temperature detector makes at least three readings per second”*

The term “the temperature detector makes at least three readings per second” appears in claim 67 of the '938 patent, which depends on claim 57, recited, *supra*.

---

<sup>20</sup> The parties agree that “across a forehead” means “from one side of the forehead to the other.”

<sup>21</sup> Brooklands and the Sanomedics defendants take no position regarding these terms.

67 (938 patent). A method of claim 57 wherein the temperature detector makes at least three readings per second as it is moved.

(Emphasis added to highlight disputed claim term).

Exergen proposes that this term be given its ordinary and customary meaning. Kaz contends that because independent claim 57 requires “moving a temperature detector” and “providing a body temperature approximation from a peak temperature reading,” the temperature detector must itself, without relying on another component of the device, conduct at least three readings per second. Thus, Kaz proposes that the term be construed to mean “the radiation sensor (detector) is by itself capable of making at least three measurements per second.”

Kaz’s argument, in reality, is not directed at a *Markman* issue, but to an infringement analysis of what may or may not constitute a temperature detector. The claim language as it stands is clear and nothing in the specification would require Kaz’s proposed elaboration. Thus, the court construes “the temperature detector makes at least three readings per second” at face value.

*’938 patent – “measuring radiation emitted in at least three readings per second”*

The term “measuring radiation emitted in at least three readings per second” appears in claims 8 and 34 of the ’938 patent. Claim 8, which depends on independent claim 1 (recited *supra*), is representative.

8 (’938 patent). The method of claim 1 further comprising measuring radiation emitted in at least three readings per second.

(Emphasis added to highlight disputed claim term).

Exergen proposes that the term be construed according to its ordinary and customary meaning—“measuring radiation in at least three readings per second.” Kaz contends that this term is indefinite because radiation cannot be emitted as disclosed, nor can such radiation be measured. Alternatively, Kaz proposes that the claim be construed as “the radiation detector takes at least three readings every second.”

The court is confident that a person of ordinary skill<sup>22</sup> in the art would understand, with a reasonable degree of certainty, the scope of this term without the need of translation. *See Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129-2130 (2014). Although the phrasing may be slightly awkward, “radiation emitted” plainly means “the radiation that is emitted” or “the emitted radiation.” Thus, the court will

---

<sup>22</sup> Although the parties acknowledge the claims are construed from the perspective of the ordinary person skilled in the art, their briefs offer no discussion of the qualifications and knowledge of such a hypothetical person at the time of the invention.



construe “measuring radiation emitted in at least three readings per second” to mean what it says.

#### Group Six–Remaining Terms<sup>23</sup>

##### *'685 patent – “laterally scanning” and “lateral scan”*

The terms “laterally scanning” and “lateral scan” appear in claims 1, 14, and 22 of the '685 patent. Claims 1 and 14 are recited *supra*.

Exergen and Kaz dispute whether the terms mean “moving a scanning device in a *generally* horizontal direction relative to the human body” (Exergen, emphasis added), or “scanning in a horizontal direction relative to the human body” (Kaz). Kaz contends that its interpretation is the right one because Exergen, in the prior litigation, agreed that “laterally” means “horizontal relative to the human body.” *Exergen*, 575 F.3d at 1322.

Exergen’s agreement with defendants in prior litigation is neither binding precedent (as no court passed judgment on the agreement), nor the law of the case. Exergen’s proposed construction is consistent with the ordinary definition of “lateral.” Moreover, as Exergen accurately points out, Figure 1 of the '685 patent, shown below, demonstrates that the scan may be “generally horizontal,” but not strictly horizontal.

---

<sup>23</sup> Brooklands and the Sanomedics defendants take no position regarding these terms.

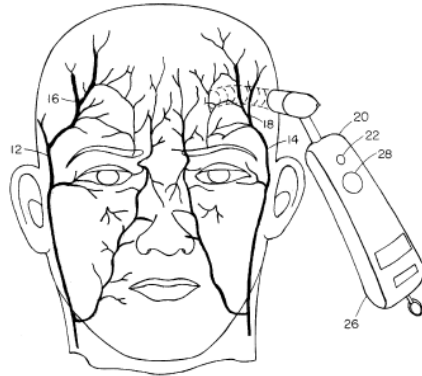


FIG. 1

Thus, the court will construe “laterally scanning” and “lateral scan” as “moving a scanning device in a generally horizontal direction relative to the human body.”

*'685 patent – “from plural readings during the step of scanning”*

The term “from plural readings during the step of scanning” appears in claims 1 and 22 of the '685 patent. Claim 22 is representative.

22 (685 patent). A method of detecting human body temperature comprising:

laterally scanning a temperature detector across an artery;  
and

providing a peak temperature reading from plural readings during the step of scanning.

(Emphasis added to highlight disputed claim term).

Exergen contends that the claim term should be construed according to its ordinary and customary meaning—“from multiple readings taken by the detector during the scanning step.” Kaz does not disagree,

but proposes what it believes to be a clarifying construction – “from multiple measurements that are made while the temperature detector is moving.” To remain as consistent with the plain and clear language of the claim as possible, the court will construe the term to mean “from plural readings taken by the detector during the scanning step.”

*'685 patent – “detecting temperature at a forehead”*

The claim term “detecting temperature at a forehead” appears in claims 1 and 32 of the '685 patent. Claim 32 is representative.

32 ('685 patent). A method of detecting human body temperature comprising:

detecting temperature at a forehead; and

computing an internal body temperature of the body as a function of ambient temperature and sensed surface temperature, the function including a weighted difference of surface temperature and ambient temperature, the weighting including an approximation of  $h/pc$  at a forehead artery where  $h$  is a heat transfer coefficient between the target surface and ambient,  $p$  is perfusion rate and  $c$  is blood specific heat.

(Emphasis added to highlight disputed claim term).

Exergen proposes that this term be given its ordinary and customary meaning—“detecting temperature at a forehead.” Kaz proposes that it be construed as “placing a temperature detector in physical contact with the forehead to measure its surface temperature.”

For support, Kaz relies on portions of the specification which describe a preferred embodiment of the invention:

FIG. 2A illustrates one sensor assembly for the radiation detector of FIG. 1. . . . A shoulder defines an aperture 66 at the base of a conical cup 68 through which the thermopile views the target. The cup is preferably of low emissivity in order to provide emissivity compensation as disclosed in U.S. Pat. No. 4,636,091 [(the '091 patent)].

'685 patent, col. 4, lls. 29-42. "During the scanning of the radiation detector across the forehead, *contact of the housing 78 with the skin* can cause cooling of the skin. To minimize that cooling, a circular lip 80 protrudes axially beyond the tip of the heat sink []." *Id.* col. 5, lls. 53-56 (emphasis added). Kaz contends that the claimed invention would not work without contact with the skin because radiation would otherwise escape and "ruin the functionality of the 'emissivity compensating cup.'" Kaz Markman Br., Dkt. # 54 at 19.

Although Kaz is correct that the invention would probably not work as efficiently without skin contact (as illustrated in the preferred embodiment), the claims are not directed to an emissivity compensating cup or other solutions to compensate for radiation emission. Indeed, the '091 patent, which Kaz references, explicitly describes radiation detectors that function without contact with the target. *See* '091 patent, col. 1, lls. 20-21 ("Radiation detectors have been used as a *noncontact alternative* to

such temperature sensors.”) (Emphasis added). Nothing in the ’685 patent expressly disavows these noncontact detectors. *See Thorner*, 669 F.3d at 1366 (“[E]ven where a particular structure makes it ‘particularly difficult’ to obtain certain benefits of the claimed invention, this does not rise to the level of disavowal of the structure.”). Thus, the court will construe “detecting temperature at a forehead” as it is stated in the claim.

*’938 patent – “the body temperature approximation corresponds to an [oral/rectal] measurement”*

The term “the body temperature approximation corresponds to an [oral/rectal] measurement” appears in claims 2-3, 15-16, 27-28, 40-41, and 61-62 of the ’938 patent. Exergen proposes that this term be construed according to its ordinary and customary meaning—“the body temperature approximation is an [oral/rectal] temperature that corresponds to the detected core temperature.” Kaz maintains that this term is indefinite because, as discussed above, the only temperature computation that is arguably enabled is one for core body temperature. Therefore, a person of ordinary skill in the art would not grasp the correspondence between the core temperature and the oral or rectal temperature. Alternatively, Kaz proposes that the term be construed to mean that “the determined core temperature may be used to compute an equivalent [oral/rectal] temperature.”

Exergen has identified a portion of the specification that it argues supports the determination of oral and rectal temperatures based on the measured temperature.

Since all body site temperatures of interest arise from the arterial temperature source, the arterial heat balance can be applied to any site. Accordingly, based on the Thevenin equivalents theorem, oral and rectal diagnostic equivalents  $T_o$  and  $T_r$  of arterial temperature can be calculated by appropriate selection of k-Factor, empirically taking into consideration resistances  $R_o$  and  $R_r$ .

'938 patent, col. 8, lls. 56-62. As the court explained in its August 1, 2014 Order, in addition to being premature, the court does not at this junction have sufficient information to fairly evaluate whether a person of ordinary skill in the art at the time of the invention (whoever that is) would or would not know how to determine the corresponding oral and rectal temperatures based on the disclosures in the patent. Again, the issues of written description and enablement are reserved for summary judgment or trial. For present purposes, the court will construe the terms according to their plain and clear meaning as written.

*'685 patent – “temperature is detected in the vicinity of [an artery/a temporal artery]”*

The term “temperature is detected in the vicinity of [an artery/a temporal artery]” appears in claims 20 and 21 of the '685 patent. Claims

20 and 21 depend on independent claim 14, which is recited, *supra*. Claim 20 is representative.

20 (685 patent). A method as claimed in claim 14 wherein temperature is detected in the vicinity of an artery.

(Emphasis added to high disputed claim term).

Exergen proposes that the term be construed according to its ordinary and customary meaning – “temperature is detected near [an artery/a temporal artery].” Kaz contends that the term is indefinite because “in the vicinity of” is a term of degree, and the specification does not provide an objective standard to define its scope (such as a measurable distance). *See Seattle Box*, 731 F.2d at 826. In the alternative, Kaz contends that the term should be construed as “temperature is detected at [an artery/a temporal artery].”

Although Kaz correctly states the law regarding words of degree, it does not cite a case where “in the vicinity of” is so considered. Indeed, the Federal Circuit has construed “near” as a claim term without a specific distance requirement. *See Accentra, Inc. v. Staples, Inc.*, 500 Fed. Appx. 922, 930-931 (Fed. Cir. 2013) (“near” means “at or in the vicinity of”). Additionally, the disputed term must be considered in the context of the claims. Claims 20 and 21 depend on independent claim 14, which recites “detecting temperature at a forehead through a lateral scan across the

temporal artery.” It is unclear how “in the vicinity of [an artery/a temporal artery]” further limits the scope of scanning across the temporal artery, but “in the vicinity of [an artery/a temporal artery]” is limited by “scanning across the temporal artery.” Nonetheless, the meaning of the term is plain. The court will construe “temperature is detected in the vicinity of [an artery/a temporal artery]” as it is set out in the patent.

**ORDER**

The claim terms at issue will be construed for the jury and for all other purposes in the pending litigations in a manner consistent with the above rulings of the court.

**SO ORDERED.**

/s/ Richard G. Stearns

---

**UNITED STATES DISTRICT JUDGE**