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755 F.3d 1367

United States Court of Appeals,
Federal Circuit.

[HILL-ROM SERVICES, INC.](#), Hill-Rom Company, Inc., and Hill-Rom Manufacturing, Inc., Plaintiffs-Appellants,
v.
STRYKER CORPORATION (doing business as Stryker Medical) and Stryker Sales Corporation, Defendants-Appellees.

No. 2013-1450.

June 27, 2014.

Synopsis

Background: Patentee brought infringement action against a competitor, alleging that the competitor infringed on its patents for systems and methods for enabling hospital personnel to remotely monitor the status of hospital beds. The United States District Court for the Southern District of Indiana, [Jane Magnus-Stinson, J.](#), [2013 WL 364568](#), granted summary judgment to the competitor. The patentee appealed.

Holdings: The Court of Appeals, [Moore](#), Circuit Judge, held that:

[1] term “datalink” was not limited to wired connections;

[2] term “interface board including a processor” did not require that messages be sent to a remote location via a wall interface unit;

[3] term “message validation information” meant one or more data fields within a message that is used to verify that the message was received exactly the same as it was sent; and

[4] term “bed condition message” meant a message that indicates the status of a monitored bed condition.

Reversed and remanded.

[Reyna](#), Circuit Judge, filed a dissenting opinion.

Attorneys and Law Firms

***1370** [David K. Callahan](#)¹, Kirkland & Ellis, LLP, of Chicago, IL, argued for plaintiffs-appellants. With him on the brief were [Mary E. Zaug](#) and [Joshua M. Reed](#).

¹ Mr. Callahan subsequently withdrew from the case.

[Steven E. Derringer](#), Bartlit Beck Herman Palenchar & Scott LLP, of Chicago, IL, argued for defendants-appellees. With him on the brief were [Christopher J. Lind](#) and [Brian C. Swanson](#).

Before [MOORE](#), [SCHALL](#), and [REYNA](#), Circuit Judges.

Opinion

Opinion for the court filed by Circuit Judge [MOORE](#).
Dissenting opinion filed by Circuit Judge [REYNA](#).

[MOORE](#), Circuit Judge.

Hill-Rom Services, Inc., Hill-Rom Company, Inc., and Hill-Rom Manufacturing, Inc. (collectively, Hill-Rom) appeal from the district court's grant of summary judgment that Stryker Corporation and Stryker Sales Corporation (collectively, Stryker) do not infringe asserted claims of [U.S. Patent Nos. 5,699,038 \(#038 patent\)](#), [6,147,592 \(#592 patent\)](#), and [7,538,659 \(#659 patent\)](#). Because the district court's judgment of non-infringement was premised on erroneous claim constructions, we *reverse and remand*.

BACKGROUND

The patents-in-suit, which claim priority to the same parent application,² are directed to systems and methods for enabling hospital personnel to remotely monitor the status of hospital beds. [#038 patent](#) col. 1 l. 61–col. 2 l.38. The patents-in-suit disclose hospital beds equipped with sensors that monitor bed parameters, such as the patient's presence in the bed and the bed height. *Id.* col. 2 ll. 6–9, col. 5 l. 63–col. 6 l. 23. These systems send data about the status

of a hospital bed to a remote location for monitoring by hospital personnel. *Id.* col. 2 ll. 59–65. Claim 1 of the [#038 patent](#), from which asserted claim 13 depends, contains three of the four disputed claim limitations and is treated by the parties as representative:

² The #592 and the [#659 patents](#) are continuations of the [# 038 patent](#).

A bed status information system ... comprising:

at least one bed condition input signal generator ...;

an *interface board including a processor* ... said interface board operable for receiving said bed condition input signal and processing said input signal to create *bed condition messages* indicating the status of the monitored condition;

a processing station remote from the bed and coupled with said interface [*1371](#) board by a *datalink*, the processing station operable for receiving said *bed condition messages* over the *datalink* and processing said messages ... such that the status of the monitored condition of the patient bed is indicated to attending personnel at a location remote from the bed.

[#038 patent](#) claim 1 (emphases added). Claim 17 of the [#592 patent](#) includes the fourth disputed claim term and recites: “The patient monitoring system ... wherein the message includes *message validation information*.” [#592 patent](#) claim 17 (emphasis added).

Hill–Rom brought suit against Stryker alleging infringement of various claims. The parties stipulated to non-infringement based on the court’s construction of the claim terms “datalink,” “interface board including a processor,” “message validation information,” and “bed condition message.” Hill–Rom appeals. We have jurisdiction under [28 U.S.C. § 1295\(a\)\(1\)](#).

DISCUSSION

^[1] ^[2] ^[3] We review claim construction *de novo*. [Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.](#), 744 F.3d 1272, 1276–77 (Fed.Cir.2014) (en banc). Claim terms are generally given their plain and ordinary meanings to one of skill in the art when read in the context of the specification and prosecution history. See [Phillips v. AWH Corp.](#), 415 F.3d 1303, 1313 (Fed.Cir.2005) (en

banc). “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the 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).

A. “datalink”

^[4] The district court construed the term “datalink” to mean “a cable connected to the bed that carries data.” [Hill–Rom Servs., Inc. v. Stryker Corp.](#), No. 1:11–CV–1120, 2013 WL 364568, at *8 (S.D.Ind. Jan. 30, 2013) (*District Court Decision*). Hill–Rom argues that the district court erred by limiting “datalink” to a “cable,” *i.e.*, a wired datalink. It argues that “datalink” should be given its plain and ordinary meaning, which is a link that carries data and encompasses both wired and wireless connections. Stryker argues that the district court was correct that the plain and ordinary meaning of “datalink” is limited by the specification to a wired connection. We agree with Hill–Rom.

^[5] ^[6] While we read claims in view of the specification, of which they are a part, we do not read limitations from the embodiments in the specification into the claims. [Lieber–Flarsheim Co. v. Medrad, Inc.](#), 358 F.3d 898, 904 (Fed.Cir.2004). We depart from the plain and ordinary meaning of claim terms based on the specification in only two instances: lexicography and disavowal. [Thorner](#), 669 F.3d at 1365. The standards for finding lexicography and disavowal are exacting. “To act as its own lexicographer, a patentee must clearly set forth a definition of the disputed claim term other than its plain and ordinary meaning” and must “clearly express an intent to redefine the term.” *Id.* at 1365 (quotations omitted).

“[T]his court has expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” [Lieber–Flarsheim](#), 358 F.3d at 906 (listing cases rejecting attempts to import limitations from the [*1372](#) specification into the claims). The court continued, “[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using ‘words or expressions of manifest exclusion or restriction.’ ” *Id.*

(quoting [Teleflex, Inc. v. Ficosa N. Am. Corp.](#), 299 F.3d 1313, 1327 (Fed.Cir.2002)).

[7] Disavowal requires that “the specification [or prosecution history] make[] clear that the invention does not include a particular feature,” [SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.](#), 242 F.3d 1337, 1341 (Fed.Cir.2001), or is clearly limited to a particular form of the invention, [Edwards Lifesciences LLC v. Cook Inc.](#), 582 F.3d 1322, 1330 (Fed.Cir.2009) (“[W]hen the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment.”) (quotation omitted). For example, we have held that disclaimer applies when the patentee makes statements such as “the present invention requires ...” or “the present invention is ...” or “all embodiments of the present invention are...” See [Regents of Univ. of Minn. v. AGA Med. Corp.](#), 717 F.3d 929, 936 (Fed.Cir.2013); [Honeywell Int'l, Inc. v. ITT Indus., Inc.](#), 452 F.3d 1312, 1316–19 (Fed.Cir.2006); [SciMed](#), 242 F.3d at 1343–44; [AstraZeneca AB v. Hanmi USA, Inc.](#), 554 Fed.Appx. 912, 915 (Fed.Cir.2013) (nonprecedential). We have also found disclaimer when the specification indicated that for “successful manufacture” a particular step was “require[d].” [Andersen Corp. v. Fiber Composites, LLC](#), 474 F.3d 1361, 1367 (Fed.Cir.2007) (“Those statements are not descriptions of particular embodiments, but are characterizations directed to the invention as a whole.”). We found disclaimer when the specification indicated that the invention operated by “pushing (as opposed to pulling) forces,” and then characterized the “pushing forces” as “an important feature of the present invention.” [SafeTCare Mfg., Inc. v. Tele-Made, Inc.](#), 497 F.3d 1262, 1269–70 (Fed.Cir.2007). We found disclaimer when the patent repeatedly disparaged an embodiment as “antiquated,” having “inherent inadequacies,” and then detailed the “deficiencies [that] make it difficult” to use. [Chicago Bd. Options Exch., Inc. v. Int'l Sec. Exch., LLC](#), 677 F.3d 1361, 1372 (Fed.Cir.2012) (“[T]he specification goes well beyond expressing the patentee's preference ... and its repeated derogatory statements about [a particular embodiment] reasonably may be viewed as a disavowal....”). Likewise, we found disclaimer limiting a claim element to a feature of the preferred embodiment when the specification described that feature as a “very important feature ... in an aspect of the present invention” and disparaged alternatives to that feature.

[Inpro II Licensing, S.A.R.L. v. T-Mobile USA Inc.](#), 450 F.3d 1350, 1354–55 (Fed.Cir.2006).

There is no such disclaimer or lexicography here. There are no words of manifest exclusion or restriction. The patents-in-suit do not describe the invention as limited to a wired datalink. There is no disclosure that, for example, the present invention “is,” “includes,” or “refers to” a wired datalink and there is nothing expressing the advantages, importance, or essentiality of using a wired as opposed to wireless datalink. Nor is there language of limitation or restriction of the datalink. Nothing in the specification or prosecution history makes clear that the invention is limited to use of a cable as a datalink. Absent such language, we do not import *1373 limitations from the specification into the claims.

[8] It is true that the specifications of the patents-in-suit use the terms “datalink 39,” “cable 39,” and “serial datalink 39” to describe the same component of the preferred embodiment. [#038 patent](#) col. 12 ll. 61–64, col. 6 ll. 29–33, 47–50. However, those terms are used synonymously *only* in describing a particular numbered component in the figure depicting the preferred embodiment, and never in describing the datalink of the invention generally. See *id.* This disclosed embodiment undisputedly uses a cable to convey data, and the patent does not disclose an alternative embodiment that uses a wireless datalink. However, absent some language in the specification or prosecution history suggesting that the wired connection is important, essential, necessary, or the “present invention,” there is no basis to narrow the plain and ordinary meaning of the term datalink to one type of datalink—a cable. There are no magic words that must be used, but to deviate from the plain and ordinary meaning of a claim term to one of skill in the art, the patentee must, with some language, indicate a clear intent to do so in the patent. And there is no such language here.

In fact, this specification states that the figures depicting the use of a wired datalink merely “illustrate embodiments of the invention.” [#038 patent](#) col. 4 ll. 59–65; see also *id.* col. 5 ll. 30–31 (“DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS”); *id.* col. 22 ll. 20–31 (the “description of various embodiments” is not intended “to restrict or in any way limit the scope of the appended claims to such detail”). Nothing in the language of the specification suggests that datalink should be limited to the cable used in the preferred embodiment. Therefore,

we see no basis for deviating from the plain and ordinary meaning.

[9] An examiner's statement during prosecution of later unrelated [U.S. Patent Application No. 13/336,044 \(#044 application\)](#) that the [#038 patent](#) does “not teach ... the bed having a wireless receiver” does not convince us that one of skill in the art at the time of filing (i.e., the effective filing date of the patents-in-suit) would understand “datalink” to be limited to wired connections. The examiner stated only that the [#038 patent](#) specification does “not teach” a wireless receiver, and he expressed no views on the meaning of the term “datalink.” No doubt the patentee would agree with the examiner that the specification does not contain an embodiment that teaches use of a wireless receiver. However, a patent specification need not disclose or teach what is known in the art. [Streck, Inc. v. Research & Diagnostic Sys., Inc.](#), 665 F.3d 1269, 1288 (Fed.Cir.2012) (“It is well-established ... that a specification need not disclose what is well-known in the art.”); see also [Hybritech Inc. v. Monoclonal Antibodies, Inc.](#), 802 F.2d 1367, 1384 (Fed.Cir.1986). The absence of an embodiment teaching a wireless receiver does not prevent the claimed datalink from being given its plain and ordinary meaning at the relevant time. Holding that the plain meaning of datalink at the time of the filing included both wired and wireless connections for carrying data is not inconsistent with the examiner's statement that the [#038 patent](#) does not teach a wireless receiver. We do not interpret the examiner's statement about the teachings of the specification as one about his understanding of the meaning of the term “datalink” to one of skill in the art at the time of filing.

*1374 Indeed, the only evidence in the record of how one of ordinary skill in the art at the time of filing would understand the term “datalink” is from Hill–Rom's expert. He testified that as of the effective filing date of the patents-in-suit, “a person of ordinary skill would understand that ‘datalink’ does not refer solely to physical connection” and “can be established over wired, wireless, optical, or other connection.” J.A. 454, 472.

Stryker does not dispute that wireless datalinks were known at the time the patent was filed, nor does it suggest that the plain meaning of datalink at the relevant time was a cable. Instead, Stryker insists that “datalink” ought to be given its plain and ordinary meaning in the context of the specification. We agree. This is not, however, a

license to read limitations from the embodiments in the specification into the claims. The plain and ordinary meaning of datalink at the relevant time is a connection that carries data. And neither the specification nor the prosecution history gives reason to limit the term to a wired connection.

[10] This construction—a datalink is a link that carries data and can be wired or wireless—is supported by the claims of the patent. The [#659 patent](#) contains several dependent claims that expressly recite the requirement of a wired datalink, and they depend from independent claims that do not contain such a requirement. Claim 2, which depends from claim 1, recites “[t]he system of claim 1, wherein the datalink comprises a wired datalink.” [#659 patent](#) claim 2. The only distinction between claim 1 and claim 2 is the limitation that the “datalink” is a wired datalink. See also *id.* claims 10, 18. “[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim.” [Lieber–Flarsheim](#), 358 F.3d at 910. This presumption is especially strong where the limitation in dispute is the only meaningful difference between an independent and dependent claim. *Id.* Of course, claim differentiation is not a hard and fast rule, and the presumption can be overcome by a contrary construction required by the specification or prosecution history. [Seachange Int'l, Inc. v. C–COR, Inc.](#), 413 F.3d 1361, 1369 (Fed.Cir.2005). However, nothing in this specification or prosecution history rebuts the presumption established by the doctrine of claim differentiation.

[11] [12] [13] The district court explained that if datalink was not limited to a wired link, and in particular, if the term were construed to “include wireless communication,” the claim would not be enabled. *District Court Decision* at *7. Enablement concerns do not justify departing from the plain and ordinary meaning of “datalink.” Where the meaning of a claim term is clear, as it is here, we do not rewrite the claim to preserve its validity. [Lieber–Flarsheim](#), 358 F.3d at 911. Moreover, the parties point to no evidence in this record that establishes an enablement problem and the district court did not cite to any. *Id.* Courts should be cautious not to allow claim construction to morph into a mini-trial on validity. Claim terms should be given their plain and ordinary meaning to one of skill in the art at the relevant time and cannot be rewritten by the courts to save their validity. We hold

that “datalink” in the claims at issue is any link over which data is transferred and can be wired or wireless.

The dissent argues that our construction is incorrect because it defines “datalink” in functional terms. But, as we have previously explained, defining a particular claim *1375 term by its function is not improper and “is not sufficient to convert a claim element containing that term into a ‘means for performing a specified function’ within the meaning of [35 U.S.C. § 112(6)].” *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed.Cir.1996). Indeed, “[m]any devices take their names from the functions they perform. The examples are innumerable, such as ‘filter,’ ‘brake,’ ‘clamp,’ ‘screwdriver,’ or ‘lock.’” *Id.* There is nothing improper about defining “datalink” as a link that conveys data. If one of skill in the art at the relevant time would understand that datalinks can be both wired and wireless, then the patentee is entitled to the full range of that claim term.³

³ The dissent also raises a concern that our construction of “datalink” could theoretically cover unknown technologies created in the future. Dissent at 2. Such unknown technologies are not at issue here, however, and we see no persuasive reason to depart from the plain and ordinary meaning of a term based on such unknowns.

Next, the dissent contends that a person of ordinary skill could not have understood “datalink” to include wireless connections because there is no evidence that wireless connections were known to persons of ordinary skill in the art at the relevant time. To the contrary, the record evidence establishes that wireless connections were known and used by persons of ordinary skill during the relevant time frame. The Background of the Invention of the patents-in-suit describes a prior art patent disclosing a “personnel locating system” using “infrared transmitters,” *i.e.*, wireless transmitters, to transmit a “pulse-coded signal which corresponds to the identity of the wearer.” #038 patent col. 1 ll. 42–46 (describing U.S. Patent No. 4,275,385). This is an unequivocal disclosure, in the patent itself, of wireless datalinks. Furthermore, Hill-Rom’s expert testified that at the time of the patent’s filing, a person of ordinary skill would have understood “datalink” to include a wireless connection. J.A. 454, 472. Even Stryker does not dispute that, at the relevant time period, data could be carried through a wired or wireless connection. We hold that, consistent with the record evidence, the plain and ordinary meaning of datalink at

the time of the patent filing would be a link that carries data in a wired or wireless fashion.

B. “interface board including a processor”

[14] The district court construed “interface board including a processor” as “a board that processes an input signal to create bed condition messages and sends those messages to a remote location via the wall interface unit.” *District Court Decision* at *9. The court noted that “[i]t can also receive messages through the wall interface unit.” *Id.* Hill-Rom argues that the “interface board including a processor” should be given its plain and ordinary meaning, which is the interface between the bed components and the off-bed components that processes the bed condition input signals into bed condition messages. First, Hill-Rom argues that the district court improperly imported “the wall interface unit” limitation into “interface board including a processor.” Second, it contends that the district court erred by requiring the “interface board including a processor” to receive messages from a remote location.

Stryker responds that the district court’s inclusion of the “wall interface” unit in its construction is supported by the specification, and argues further that the construction should require “a board that *1376 includes the electronics that control the sending of messages to, and the receiving of messages from, a remote location.” It argues that the patents-in-suit describe the invention as including an interface board that is capable of sending and receiving messages from a remote location through the wall interface unit. *See* #038 patent col. 3 ll. 53–56; col. 4 ll. 18–21; col. 19 ll. 4–17. Moreover, Stryker argues that several dependent claims describe sending messages to the interface board, suggesting that the interface board must be capable of receiving messages from a remote location. *See id.* claims 9, 13, 14, 15, 24.

[15] We hold that the “interface board including a processor” is the interface between the bed components and the off-bed components that processes the bed condition input signals. An interface is a point of interaction. Interface devices are sometimes capable of both sending and receiving data and sometimes limited to sending data. Claim 1 of the #038 patent articulates with specificity the functions that the claimed interface board must perform: the interface board must “receiv[e] ...

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