

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

NORTHWESTERN UNIVERSITY,)
)
Plaintiff,)
)
v.) C.A. No. 21-149 (MN)
)
UNIVERSAL ROBOTS A/S and)
UNIVERSAL ROBOTS USA, INC.,)
)
Defendants.)

MEMORANDUM ORDER

At Wilmington, this 22nd day of January 2024:

The Court heard arguments for the disputed claim terms of U.S. Patent No. 6,907,317 (“the ’317 Patent”), U.S. Patent No. 6,928,336 (“the ’336 Patent”), and U.S. Patent No. 7,120,508 (“the ’508 Patent”) on June 16, 2023. (*See* D.I. 229). IT IS HEREBY ORDERED that the claim terms of the ’317, ’336, and ’508 Patents with agreed-upon constructions are construed as follows (*see* D.I. 225 at 1):

1. The preamble in claim 1 of the ’317 Patent is limiting;
2. The preamble in claim 1 of the ’336 Patent is limiting;
3. The preamble in claim 1 of the ’508 Patent is not limiting with respect to “configuration system” but is limiting with respect to “for an intelligent assist system, the intelligent assist system comprising a module, and a computational node on the module”;
4. “a modular architecture” means “an architecture that can allow different modules to be assembled, disassembled and re-assembled in different configurations” (’336 Patent, claim 1); and
5. “the nodes” refers to “the computational nodes” (’336 Patent, claim 1).

Further, as announced at the hearing on June 16, 2023, IT IS HEREBY ORDERED that the disputed claim terms of the ’317, ’336, and ’508 Patents are construed as follows:

1. “an intelligent assist system” means “a system comprising at least one of a class of computer-controlled machines or devices that interact with a human operator to assist in moving a payload” (’317 Patent, claim 1; ’336 Patent, claim 1; ’508 Patent, claim 1);
2. “module” is not indefinite and means “a component within the intelligent assist system” (’317 Patent, claim 1; ’336 Patent, claims 5-7; ’508 Patent, claims 1-7);
3. “motion module” is not indefinite, is not a means-plus-function term subject to 35 U.S.C. § 112(f), and means “a component that can provide support or motion of a payload” (’336 Patent, claims 1, 4 & 18);
4. “programmable logic” means “logic capable of being programmed” (’317 Patent, claim 1); and
5. “host computer system” means “computer on which the configuration software resides” (’508 Patent, claims 1 & 7).

The parties briefed the issues (D.I. 219) and submitted an appendix containing intrinsic and extrinsic evidence (D.I. 220).¹ The Court carefully reviewed all submissions in connection with the parties’ contentions regarding the disputed claim terms, heard oral argument (*see* D.I. 229), and applied the legal standards below in reaching its decision.

I. LEGAL STANDARDS

A. Claim Construction

“[T]he ultimate question of the proper construction of the patent [is] a question of law,” although subsidiary fact-finding is sometimes necessary. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 325 (2015). “[T]he words of a claim are generally given their ordinary and

¹ On May 30, 2023, the Court ordered the parties to meet and confer regarding the disputed claim terms and file an amended joint claim construction chart. (*See* D.I. 222). On June 9, 2023, the parties filed an amended joint claim construction chart and a joint letter indicating that the parties had agreed upon a construction with respect to term 4 (“the nodes” and “the computational nodes”) in their initial claim construction briefing. (*See* D.I. 225 & 226). The Court adopted the agreed-upon construction. *See supra*. The parties also resolved their dispute with respect to “at least one other module.” (*See* D.I. 226). The parties, however, maintained their dispute with respect to the other related “module” terms.” (*See* D.I. 226 & 219 at 39-49).

customary meaning [which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (internal citations and quotation marks omitted). Although “the claims themselves provide substantial guidance as to the meaning of particular claim terms,” the context of the surrounding words of the claim must also be considered. *Id.* at 1314. “[T]he ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent.” *Id.* at 1321 (internal quotation marks omitted).

The patent specification “is always highly relevant to the claim construction analysis . . . [as] it is the single best guide to the meaning of a disputed term.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). It is also possible that “the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316. “Even when the specification describes only a single embodiment, [however,] 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.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (internal quotation marks omitted) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)).

In addition to the specification, a court “should also consider the patent’s prosecution history, if it is in evidence.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). The prosecution history, which is “intrinsic evidence, . . . consists of the complete record of the proceedings before the PTO [Patent and Trademark Office] and includes the prior art cited during the examination of the patent.” *Phillips*,

415 F.3d at 1317. “[T]he 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.*

In some cases, courts “will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva*, 574 U.S. at 331. Extrinsic evidence “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980. Expert testimony can be useful “to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.” *Phillips*, 415 F.3d at 1318. Nonetheless, courts must not lose sight of the fact that “expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence.” *Id.* Overall, although extrinsic evidence “may be useful to the court,” it is “less reliable” than intrinsic evidence, and its consideration “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Id.* at 1318-19. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999) (citing *Vitronics*, 90 F.3d at 1583).

B. Indefiniteness

“The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, *e.g.*, competitors of the patent owner, can

determine whether or not they infringe.” *All Dental Prodx, LLC v. Advantage Dental Prods., Inc.*, 309 F.3d 774, 779-80 (Fed. Cir. 2002) (citing *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 28-29 (1997)). Put another way, “[a] patent holder should know what he owns, and the public should know what he does not.” *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 731 (2002).

A patent claim is indefinite if, “viewed in light of the specification and prosecution history, [it fails to] inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014). A claim may be indefinite if the patent does not convey with reasonable certainty how to measure a claimed feature. *See Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1341 (Fed. Cir. 2015). But “[i]f such an understanding of how to measure the claimed [feature] was within the scope of knowledge possessed by one of ordinary skill in the art, there is no requirement for the specification to identify a particular measurement technique.” *Ethicon Endo-Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1319 (Fed. Cir. 2015).

Like claim construction, definiteness is a question of law, but the Court must sometimes render factual findings based on extrinsic evidence to resolve the ultimate issue of definiteness. *See, e.g., Sonix Tech. Co. v. Publications Int’l, Ltd.*, 844 F.3d 1370, 1376 (Fed. Cir. 2017); *see also Teva*, 574 U.S. at 334-36. “Any fact critical to a holding on indefiniteness . . . must be proven by the challenger by clear and convincing evidence.” *Intel Corp. v. VIA Techs., Inc.*, 319 F.3d 1357, 1366 (Fed. Cir. 2003); *see also Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1338 (Fed. Cir. 2008).

II. THE COURT'S RULING

The Court's ruling regarding the disputed claim terms of the '317, '336, and '508 Patents was announced during the Markman hearing on June 16, 2023 as follows:

At issue, there are five disputed claim terms in three patents.^[2] I am prepared to rule on each of the disputes. I will not be issuing a written opinion, but I will issue an order stating my rulings. I want to emphasize before I announce my decisions that although I am not issuing a written opinion, we have followed a full and thorough process before making the decisions I am about to state. I have reviewed the patents and all the evidence submitted by the parties. There was full briefing on each of the disputed terms and we had argument today. All of that has been carefully considered.

As to my rulings, I am not going to read into the record my understanding of claim construction law and indefiniteness. I have a legal standard section that I have included in earlier opinions, including recently in *Supernus Pharmaceuticals v. Lupin*, Civil Action No. 21-1293 (MN). I incorporate that law and adopt it into my ruling today and will also set it out in the order that I issue.

The first term is “an intelligent assist system” in claim 1 of the '317 Patent, claim 1 of the '336 Patent and claim 1 of the '508 Patent. The parties agree the term is limiting, even when it appears in the preamble. Plaintiff proposes the construction, “a computer-controlled, multi-axis system that safely operates in proximity to or in collaboration with a human.” Defendants propose “a system comprising at least one of a class of computer-controlled machines that interact with a human operator to assist in moving a payload using a hybrid programmable computer-human control system to provide human strength amplification, guiding surfaces, or both.” I am going to adopt a modified version of the parties' proposed constructions.

Both parties use the definitions of “intelligent assist device” provided in the specification in supporting their construction of “intelligent assist system.” Per the specification, intelligent assist devices are “a class of computer-controlled machines that interact

² The '317, '336, and '508 Patents.

with a human operator to assist in moving a payload.”^[3] As Plaintiff points out in its briefing, during the prosecution history, the inventors also defined “an intelligent assist system” as “a particular class of devices that interact with human operators to assist in moving a payload.”^[4]

Plaintiff’s proposed construction, however, does not require any interaction or assistance provided by the intelligent assist system. Although Plaintiff denied it at the hearing, I think the better reading of Plaintiff’s assertion that the claimed system must either safely operate in proximity to a human or operate in collaboration with a human is that the construction improperly reads out the concept of assisting or collaborating by simply allowing safe operation within unspecified proximity.

Defendants argue that the term should be limited to systems that “provide human strength amplification, guiding surfaces, or both.” However, Defendants pull this language from one portion of the specification^[5] but have not shown that the inventors intended the invention to be limited in such a way.

Thus, “an intelligent assist system” means “a system comprising at least one of a class of computer-controlled machines or devices that interact with a human operator to assist in moving a payload.” I will, however, clarify that by interact, I am not requiring there to be physical contact between the human and the machine. I think that the specification makes clear that the collaboration or assistance may include hands-off or hands-free work that does not require the user to specifically touch the components of the system.^[6]

The second group of terms are the “module” terms – “module” and “second module” – in claim 1 of the ’317 Patent,

³ (’336 Patent at 1:63-65). The parties agree the specifications for all three patents are the same and cite to the specification of the ’336 Patent as the exemplary specification. (*See* D.I. 219 at 2).

⁴ (D.I. 220, Ex 6 at NUIAS0001626; *see also id.*, Ex. 4 at NUIAS0001475 (noting “Intelligent Assist Devices” are “a class of computer-controlled machines that interact with a human operator to assist in moving a payload”) (emphasis omitted)).

⁵ (*See* ’336 Patent at 2:3-8).

⁶ (*See, e.g.*, ’336 Patent at 2:14-26, 3:60-67, 4:1-8, 4:9-15, 4:16-21, 4:22-31, 4:32-34 & 8:26-45).

claims 5 through 7 of the '336 Patent, and claims 1 through 7 of the '508 Patent.^[7] Plaintiff proposes that “module” means “a component within the intelligent assist system.” Defendants argue that the terms are indefinite and propose no alternative construction. I am going to adopt Plaintiff’s construction.

I do not think that Defendants have demonstrated indefiniteness by clear and convincing evidence. Defendants note that the specification provides only non-limiting examples of modules and then, relying on *IQASR LLC v. Wendt Corporation*^[8], argues that the term is unbounded, without any consistent structure or characteristics and has unlimited configurations and is thus indefinite. I think, however, that *IQASR*, which involved the term “magnetic fuzz” and a specification that offered a “word salad of inconsistent indirect definitions and examples,” offers little guidance.^[9] Here, we do not have any similar “word salad” or inconsistencies. We have a specification providing examples of different major structures that can be used in the claimed systems.^[10] Additionally, I will note that we have done a search for the constructions of the word “module” in patent claims and found very few that altered from the plain and ordinary meaning of the term.^[11] Here, I think that that plain and ordinary meaning is consistent with Plaintiff’s proposal and will construe “module” to mean “a component within the intelligent assist system.”

The third term is “motion module” in claims 1, 4, and 18 of the '336 Patent. Plaintiff proposes the construction, “a component that can provide support or motion of a payload.” Defendants argue that the term is indefinite for the same reasons “module” is indefinite and further argue that, to the extent there is any construction, the term should be construed as a means-plus-function term, with the

⁷ In the initial briefing Defendants also argued that “at least one other module” was indefinite because it lacked antecedent basis. (*See* D.I. 219 at 39). Per the parties’ June 9, 2023 letter, however, the parties resolved their dispute with respect to this term. (*See* D.I. 226).

⁸ 825 Fed. App’x 900 (Fed. Cir. 2020).

⁹ *See id.* at 905-06.

¹⁰ (*See, e.g.*, '336 Patent at 6:37-44, 6:60-67, 7:24-25, 15:26-37 & 15:38-53).

¹¹ *See, e.g.*, Claim Construction Order, *Continental Intermodal Group-Trucking LLC v. Sand Revolution LLC, et al.*, No. 7:18-cv-00147-ADA (W.D. Tex. June 24, 2019), ECF No. 67 at 2; Claim Construction Order, *Isix IP LLC v. Int’l Bus. Machs. Corp.*, No. 6:22-cv-201-ADA-DTG (W.D. Tex. Jan. 4, 2023), ECF No. 37.

function being “supporting and moving a payload” and where the corresponding structures are a trolley, lift, hoist, or balancer. Plaintiff counters that the term is not a means-plus-function term, but if the Court construes it as such the corresponding structures are a trolley, lift, overhead rail, gantry crane, jib crane, monorail, or an articulated system.

With respect to Defendants’ repeated indefiniteness arguments, I reject those for the reasons I just noted.

With respect to Defendants’ means-plus-function arguments, I agree with Plaintiff that the term is not subject to § 112(f). First, I note that there is a rebuttable presumption that § 112(f) does not apply in situations where, as here, the word “means” is absent from the claim term at issue.^[12] That presumption may be overcome if Defendants demonstrate that the claim term fails to recite sufficiently definite structure or if they demonstrate that the claim recites function without sufficient structure for performing that function.^[13] Defendants, however, have failed to make that showing.

Defendants argue that “module” is a nonce word that typically does not connote sufficiently definite structure to a POSA and is therefore tantamount to reciting “means,” thus invoking § 112(f).^[14] As I just noted, the relevant inquiry here, however, is whether the “motion module” recited in the claims connotes sufficiently definite structure to a POSA.^[15] To answer that, I look to the claims, the specification and the prosecution history and, if necessary, extrinsic evidence.

Here, I find that the claim term recites sufficiently definite structure to avoid being subject to § 112(f). As noted during the argument today, the parties agreed that the intelligent assist system of the claims is a physical machine that contains specified physical components, one of which is the motion module. Moreover, claim 4 of the ’336 Patent requires a computational node to be “embedded

¹² See *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015).

¹³ See *Diebold Nixdorf, Inc. v. ITC*, 899 F.3d 1291, 1298 (Fed. Cir. 2018).

¹⁴ See *Williamson*, 792 F.3d at 1350; see also *TEK Global, S.R.L. v. Sealant Sys. Int’l, Inc.*, 920 F.3d 777, 785 (Fed. Cir. 2019).

¹⁵ See *TEK*, 920 F.3d at 785; see also *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1007 (Fed. Cir. 2018).

in the motion module,” thus describing a particular physical arrangement of two structures. The specification also provides examples of physical structures for the claimed elements – for example, the specification refers to trolleys and lifts as motion modules.^[16] Although not dispositive, I will also note that the Examiner never rejected any claim with “motion module” on § 112(f) grounds during prosecution.^[17]

Defendants argue that “motion module” has no particular meaning to a POSA, citing their expert’s declaration in support. I have considered the declaration but find that Defendants have failed to rebut the presumption that “motion module” is not a means-plus-function term. The intrinsic evidence supports the conclusion that the “motion module” has sufficiently definite structure to avoid § 112(f). Thus, the term shall be given its plain and ordinary meaning: “a component that can provide support or motion of a payload.”

The fourth term is “programmable logic” in claim 1 of the ’317 Patent. Plaintiff proposes the construction “logic capable of being programmed.” Defendants propose the construction “a programmable logic device (PLD) or a programmable logic controller (PLC).” I am going to adopt Plaintiff’s construction.

The ’317 Patent does not use the terms programmable logic device or programmable logic controller. Instead, Defendants largely rely on extrinsic evidence in the form of their expert’s declaration to support their position. The expert evidence, however, is not compelling to me, in part because the language the inventors chose to use is broader than merely covering PLD’s or PLC’s. The inventors knew how to claim a “programmable logic device” – as opposed to the broader “programmable logic” – in the ’336 Patent but chose not to do so in the ’317 Patent.^[18] Furthermore, it appears that Defendants’ construction may read out an embodiment, *i.e.*, the computational node is a microcontroller.^[19] Therefore, I will adopt Plaintiff’s construction and construe the term to mean “logic capable of being programmed.”

¹⁶ (E.g., ’336 Patent at 7:1-2 & 16:19-21).

¹⁷ (See D.I. 220, Ex. 4 at NUIAS0001463).

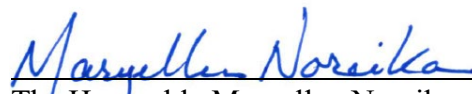
¹⁸ (’336 Patent at claim 8).

¹⁹ (See ’336 Patent at 8:55-60; *see also* D.I. 219 at 69-70).

The fifth term is “host computer system” in claims 1 and 7 of the ’508 Patent. Plaintiff proposes the construction, “computer on which the configuration software resides.” Defendants propose the construction, “a user-supplied computer or PDA.” I am going to adopt Plaintiff’s construction.

Defendants seek to limit the term to computers that are supplied by the user and cites to an embodiment from the specification as support. The Federal Circuit, however, has cautioned against reading limitations into the claims from the specification.^[20] There is nothing in the intrinsic evidence that indicates the inventors intended to limit the claims in this way or that it matters where the host computer comes from. Therefore, I will construe this term to mean “computer on which the configuration software resides.”

(D.I. 229 at 79:8-86:25).


The Honorable Maryellen Noreika
United States District Judge

²⁰ See, e.g., *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002); *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004).