IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

REX COMPUTING SYSTEMS, INC.,	)	
	)	
Plaintiff,	)	
	)	
v.	)	C.A. No. 21-525 (MN)
	)	
CEREBRAS SYSTEMS INC.,	)	
	)	
Defendant.	)	

<u>MEMORANDUM ORDER</u>

At Wilmington, this 21st day of January 2025:

The Court heard continued argument about the constructions of the disputed claim terms of U.S. Patent No. 10,355,975. (D.I. 287). As announced at the hearing on January 09, 2025, IT IS HEREBY ORDERED that the disputed claim terms of the '975 Patent are construed as follows:

1. "optimization module " is a means-plus-function term subject to 35 U.S.C. § 112(f), the claimed function is "determine optimal function assignment configurations for groups of tiles, and assign two or more functions, which communicate at least unilaterally more frequently with one another than with other functions, to groups of adjacent tiles based on an optimal function assignment configuration determination," and the corresponding structures are: the flowcharts of steps for optimization in Figures 7A and 7B as explained in the corresponding text and equivalents thereof. Figures 7A and 7B each individually provide alternative corresponding structures sufficient to implement the optimization module. Both are not required. ('975 Patent, cls. 1 and 13);

2. "when the function executes optimally" means "when the function executes best based on a metric relevant to a given criteria," where the construction requires determination of the best configuration out of those configurations that are considered. ('975 Patent, cls. 1 and 13).

The parties submitted a joint letter (D.I. 276) regarding their disputes over the Court's previous (D.I. 173) constructions. The Court carefully reviewed all submissions in connection with the parties' additional contentions regarding the disputed claim terms, heard oral argument (D.I. 287), and applied the legal standards below in reaching its decision.

1

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 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 [] 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).

II. THE COURT'S RULING

The Court's ruling resolving the disputes over the previously construed terms of the '975

Patent was announcing during the continued *Markman* hearing on January 09, 2025, as follows:

> Presently before me is the parties' continued dispute over the scope of two terms that I previously construed: "optimization module" and "when the function executes optimally."[1]
>
> First, "optimization module" in claims 1 and 13 of the '975 Patent. I previously construed[2] that term to be a means-plus-function term governed by 35 U.S.C. § 112(f) and did that in part because of arguments advocated by Plaintiff attempting to stave off an indefiniteness challenge. The claimed function is "determine optimal function assignment configurations for groups of tiles, and assign two or more functions, which communicate at least unilaterally more frequently with one another than with other functions, to groups of adjacent tiles based on an optimal function assignment configuration determination."[3] The corresponding structures are "the flowcharts of steps for optimization in Figures 7A and 7B as explained in the corresponding text and equivalents thereof."[4]
>
> The current dispute is over whether steps from Figures 7A and 7B are required or just steps from either 7A or 7B are required to implement the claimed "optimization module." Plaintiff argues that my previous construction only requires the steps of Figure 7A. In contrast, Defendant argues that my previous construction encompasses all the steps recited in both Figures 7A and 7B. I agree with Plaintiff that my construction required either the steps of 7A or 7B – all the steps of both are not required.
>
> The specification of the '975 Patent describes Figures 7A and 7B in almost identical terms. Both figures purport to show the same thing

---

[1] (D.I. 276).

[2] (D.I. 173 at 10).

[3] (*Id.* at 1).

[4] (*Id.*).

– "a flowchart of a method for assigning functions of an application to processor tiles so as to optimize execution of the application in accordance with a static priority routing."[5] Not surprisingly, many of the steps in Figures 7A and 7B are redundant – in whole or in part. Moreover, I do not see anything suggesting that 7A must be followed by 7B, which is how Defendant reads the patent. Instead, I agree with Plaintiff[6] that the steps of Figure 7A and Figure 7B each individually provide alternative corresponding structures sufficient to implement the optimization module. I will not rewrite the specification to prioritize one figure over the other, or to require that the figures rely upon or build upon each other.

Therefore, to clarify my prior construction, Figure 7A and 7B each individually provide alternative corresponding structures sufficient to implement the optimization module. Both are not required. I suppose that to the extent additional structure is needed, it is a compiler or microprocessor that is conducting the steps.

Next, the second term is "when the function executes optimally" in claims 1 and 13 of the '975 patent. I previously construed "when the function executes optimally" to mean "when the function executes best based on a metric relevant to a given criteria."[7] Like the prior term, I construed the term while also addressing an indefiniteness argument – one that had not been proven by clear and convincing evidence.[8] The parties now dispute the scope of my prior construction.[9]

Plaintiff argues that my construction requires determination of the best configuration of those configurations that are considered.[10] Defendant argues that it requires determining the best configuration possible for a particular application within a particular system.[11] Phrased differently, Defendant argues that the product must

---

5   '975 Patent, 18:26-29 (Figure 7A); *id.* 19:19-22 (Figure 7B).

6   (D.I. 276 at 2).

7   (D.I. 173 at 2).

8   (*Id.* at 8).

9   (D.I. 276 at 3).

10   (*Id.* at 3-4).

11   (*Id.*).

determine the absolute best configuration out of every possible configuration. On this issue, I agree with Plaintiff.

First, I do not see anything in the specification that describes or refers to going through every possible configuration. Instead, the specification states that "optimizing execution of the application may not achieve mathematically optimal execution, but otherwise [may] improve or substantially optimize the execution."[12] Additionally, the specification states that "[i]n one or more embodiments, the optimization module includes functionality to determine optimal assignment configurations of functions to tiles of the multi-core processor chip."[13] To do so, different configurations are simulated on the multi-core processor chip.[14] Then, "the network traffic patterns of the execution of different configurations may be monitored and ranked according to a ranking criteria."[15] Then, "an optimal configuration of the different configurations may be selected based on the rankings."[16] Therefore, the specification supports that "an optimal configuration" is chosen from "the different configurations" which have already been ranked or considered.[17] As a result, I agree with Plaintiff and the construction

---

[12]   '975 Patent, 15:67-16:2.

[13]   *Id.* at 17:57-60.

[14]   *Id.* at 17:61-18:15 (explaining that "different combinations of configurations may be simulated").

[15]   *Id.* at 18:19-21.

[16]   *Id.* at 18:24-25.

[17]   Plaintiff's expert also explains how this selection is carried out: "[t]he claims recite an 'optimization module' . . . and that module is configured to be capable of performing several functionalities, including determining 'optimal function assignment configurations for groups of tiles,' and assigning functions to tiles based on that determination of an 'optimal function assignment configuration.' The claims further recite how the determination is made, namely, by comparing the execution of functions by tiles in a square configuration and by tiles in a linear configuration. The claims describe the 'optimal function assignment' functionality as determined by the result of this comparison, or in other words, the functions are assigned based on whether the functions execute 'optimally' in tiles in a square or linear configuration." (D.I. 65-1, Ex. 4, Horst. Decl. at 97). Dr. Horst's explanation makes clear how the "optimal configuration" is chosen from existing, ranked functions. Defendant's expert insists that "determining whether a configuration is 'optimal' as that term is used in the patent becomes a purely subjective inquiry . . . The patent does not identify what parameters should be considered or measured

of the claim term "when the function executes optimally" requires determination of the best configuration out of those configurations that are considered or "simulated."

                         _____

                         The Honorable Maryellen Noreika
                         United States District Judge

---

in determining an 'optimal' configuration, or how to balance competing parameters against each other." (D.I. 65-1, Ex. 21, Colwell Decl. at 23). This, however, is inconsistent with the specification's explanation of the process of simulating different configurations on the multi-core processor chip, ranking the execution patterns, and then selecting an optimal configuration,'975 Patent, 17:57-18:25, which does not appear to be a "purely subjective inquiry," but, rather, a specific ranking and selection system.