IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

NETWORK SYSTEM TECHNOLOGIES, LLC,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civil Action No. 1:22-cv-1331-DAE
	)	
QUALCOMM INCORPORATED;	)	
QUALCOMM TECHNOLOGIES, INC.;	)	
ARTERIS, INC.,	)	
	)	
Defendants.	)	

NETWORK SYSTEM TECHNOLOGIES, LLC'S SUPPLEMENTAL CLAIM CONSTRUCTION BRIEF REGARDING CLAIM CONSTRUCITON RULINGS MADE IN RELATED CASE

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I. Introduction

Pursuant to the Court's instruction during the February 21, 2024, Claim Construction Hearing, Plaintiff Network System Technologies, LLC ("NST") respectfully submits this Supplemental Brief regarding the January 3, 2024, Claim Construction Order in the related case, *Network System Technologies, LLC v. Texas Instruments, Inc.*, No. 2:22-CV-00482-RWS, Dkt. 150 (E.D. Tex. Jan. 3, 2024), the "TI Order," attached hereto as Ex. 1.

The TI Order addresses several of the claim terms also proposed for construction in this case, specifically: "**dropping means**" in U.S. Patent No. 7,366,818 ("the '818 Patent"); "**resource manager**" and "**communication manager**" in U.S. Patent No. 7,373,449 ("the '449 Patent"); "**interconnect means**" in U.S. Patent No. 7,594,052 ("the '052 Patent"); and "**optimal amount of data to be buffered**" and "**optimal moment for sending the data**" in U.S. Patent No. 8,086,800 ("the '800 Patent").

Regarding "resource manager" and "interconnect means," NST agrees with the TI Order's constructions and the Order's rationale for reaching such constructions.

Regarding "dropping means" and "communication manager," NST respectfully submits that the TI Order's constructions are incorrect, primarily due to the Order's conclusion that these terms are subject to § 112, ¶ 6. If, however, this Court were to agree with the TI Order that § 112, ¶ 6 applies, NST proposes that modifications to the TI Order's findings regarding the "structure" are necessary and appropriate.

Finally, NST respectfully disagrees with the TI Order's conclusion that the "optimal amount" and "optimal moment" terms are indefinite. These holdings rest on the incorrect finding that the term "optimal" is purely subjective based on a misapprehension of the respective roles of the chip designer and the chip itself.

II. NST Agrees with the TI Order's Constructions of "Resource Manager" and "Interconnect Means"

A. "Resource Manager"

The TI Order ruled that "resource manager" should be given its "plain and ordinary meaning." Ex. 1 at 46. NST agrees with this construction and the TI Order's rationale.

Texas Instruments, Inc. ("TI"), the defendant in the related case that resulted in the TI Order, made the identical prosecution disclaimer argument, and proposed the same construction, as Qualcomm, Inc., Qualcomm Technologies, Inc. and Arteris, Inc. (hereinafter "Defendants"): "resource manager determining whether a target connection with the desired connection properties is available, where the resource manager is not an arbiter that selects the output based on input priorities." *Id.* at 43; *see also* Dkt. 77, Defendants' Joint Opening Brief ("Defs. Br."), at 16.

The TI Order expressly rejected TI's (and Defendants') prosecution disclaimer argument and construction. Ex. 1 at 44 ("The Court finds that the patentees did not clearly and unmistakably argue that 'the resource manager is not an arbiter that selects the output based on input priorities,' as [TI] proposes."). The TI Order found that the patentees amended the claims to add features that distinguish the "Emerson" reference, and argued that "Emerson did not disclose the limitation explicitly added to the claim," but "did not clearly and unmistakably argue that the resource was not an arbiter." *Id.* at 45. Thus, the TI Order concluded there was no prosecution disclaimer and rejected TI's (and Defendants') construction based thereon.

The TI Order also rejected NST's proposed construction, "circuit that manages network resources," which is the same construction NST proposes here. Dkt. 81, NST's Response Brief, ("NST Br.") at 13-14. The TI Order found that "the claim language is unambiguous, is easily understandable by a jury, and should be given its plain and ordinary meaning." *Id.* at 46.

Notwithstanding the TI Order rejecting NST's proposed construction, NST agrees with the construction it ultimately reached for "resource manager": "**plain and ordinary meaning**."

B. "Interconnect Means"

The TI Order construed "interconnect means" to mean "multi-hop interconnection between modules separated by one or more network nodes." Ex. 1 at 51. NST agrees with this construction and the TI Order's rationale.

In so holding, the TI Order reviewed the specification and figures of the '052 Patent and recognized that the patentees used the term "interconnect means" and the term "network" interchangeably in the specification. *Id.* at 47-49. The TI Order construed "network" to mean "multi-hop interconnection between modules separated by one or more network nodes," *id.* at 24, which is the same definition that the Parties here stipulated for "network." *See* Defs. Br. at 6. Thus, based on its recognition that the terms "interconnect means" and "network" are used interchangeably in the '052 Patent, the TI Order gave "interconnect means" the same construction as "network": "**multi-hop interconnection between modules separated by one or more network nodes**." *Id.* at 51 (emphasis added). As noted above, NST agrees with this construction.

Defendants here argue that "interconnect means" is subject to § 112, ¶ 6 and their proposed structure is "bus, switch, point-to-point wire, or network." Defs. Br. at 22. TI proposed that "interconnect means" be given its "plain and ordinary meaning," which the TI Order observed would include "existing on-chip interconnects (e.g., buses, switches, or point-to-point wires)." Ex. 1 at 51. The TI Order held that a construction that included such structures "would be inconsistent with the intrinsic evidence" and rejected TI's construction (and, by extension, Defendants' construction) on that basis. *Id.*

III. NST Respectfully Disagrees with the TI Order's Constructions of "Dropping Means" and "Communication Manager"

A. "Dropping Means"

The TI Order held "dropping means" to be governed by § 112, ¶ 6. Ex. 1 at 31. The § 112, ¶ 6 functions, according to the TI Order, are: Claim 1: "dropping data exchanged by first and second module (M, S); Claim 3: "create an error message if data is dropped"; Claim 5: "send said error message to said first module." *Id.* And for the § 112, ¶ 6 structure, the TI Order held it is the "portion of the circuit configured to implement the scheme disclosed in the '818 Patent at 7:45–56, 8:38–40, 8:64–9:10." *Id.* Notably, by giving the term "dropping means" a construction, the TI Order implicitly rejected TI's alternative construction (and, by extension, the Defendants' construction proposed here) that the term is indefinite. *Id.* at 27, 31.

NST disputes that the term "dropping means" is subject to § 112, ¶ 6 and contends the term should instead be construed as "**circuit configured to drop messages**." NST Br. at 9 (emphasis added). NST contends that the § 112, ¶ 6 presumption is rebutted because the "dropping means" is a sufficiently structural element that is disclosed as a constituent of the (undisputedly structural) "interface means," which, in turn, is a constituent of the (undisputedly structural) integrated circuit (with the parties having stipulated "integrated circuit" to mean "interconnected circuitry on a chip"). *Id.* at 10-11. NST also relies on the '818 Patent's disclosure that "[i]n the device claim enumerating several means**,** several of *these means* can be embodied by one and the same item of *hardware*" and the vast body of Federal Circuit precedent holding that a "circuit" is sufficiently structural to avoid application of § 112, ¶ 6. *Id.* at 11-12, 12 n.8; '818 Patent at 11:41-43 (emphasis added).

The TI Order's construction of the "dropping means" structure, which includes the language "portion of the circuit," not only acknowledges that the '818 Patent discloses a "circuit"

for the "dropping means," but also recognizes that such "circuit" is a structure. Ex. 1 at 31. Notwithstanding this finding, the TI Order concluded that the § 112, ¶ 6 presumption is not rebutted, a holding with which NST respectfully disagrees.

Nonetheless, if the TI Order is correct that § 112, ¶ 6 applies, NST does not dispute the Order's construction of the functions. NST does dispute, however, whether the structure is a "circuit" (NST's position) or whether the structure is a "portion of the circuit configured to implement the scheme disclosed in the '818 Patent at 7:45–56, 8:38–40, 8:64–9:10" (the TI Order's holding). *Compare* NST Br. at 9 *with* Ex. 1 at 31.

Though the TI Order's definition of the § 112, ¶ 6 structure correctly references the structural "circuit" (consistent with NST's construction), it additionally includes a requirement that such circuit "implement the scheme disclosed in the '818 Patent at 7:45–56, 8:38–40, 8:64–9:10," thereby inserting additional *functional* limitations contained in these specification passages (*e.g.*, describing "possible" scenarios where data "may" or "can" be dropped). However, § 112, ¶ 6 "does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim" and a construction—such as the TI Order's—that "incorporate[es] unrecited functional limitations into the claims" is erroneous. *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999).

Therefore, if § 112, ¶ 6 applies, the correct structure is one that does not incorporate additional functional limits, such as NST's proposal: "**circuit**." Or, partially adopting the TI Order's construction, a permissible construction is "**portion of the circuit configured to drop data**." *See* Ex. 1 at 31.

B. "Communication Manager"

The TI Order held "communication manager" to be governed by § 112, ¶ 6. Ex. 1 at 42. The § 112, ¶ 6 function, according to the TI Order, is: "forwarding a request to a resource manager."

Id. And for the § 112, ¶ 6 structure, the TI Order held it is the "portion of the circuit configured to implement the scheme disclosed in the '449 Patent at 10:19–24, 10:41–54." *Id.* As it did with "dropping means," by giving the term "communication manager" a construction, the TI Order implicitly rejected TI's argument (and, by extension, the Defendants' argument here) that the term is indefinite. *Id.* at 38, 42.

As with "dropping means," discussed above, NST disputes that "communication manager" is subject to § 112, ¶ 6. NST Br. at 14. Instead, NST contends the term should be construed as "**circuit that manages communication between modules**." *Id.* (emphasis added). Because "communication manager" does not use the phrase "means" there is a presumption that it is not subject to § 112 ¶ 6. *Id.* at 18. Bolstered by that presumption, and the Defendants' inconsistent treatment of "resource manager," (which they concede is structural), and "communication manager," (which they assert is not structural), NST contends that the "communication manager" is a structural element. *Id.* at 14-16. This conclusion is further supported by the '449 Patent's consistent description of the "communication manager" as a constituent of the (undisputedly structural) integrated circuit (which, again, the Parties here stipulated to mean "interconnected circuitry on a chip"), *id.* at 14-15, as well as the aforementioned body of Federal Circuit precedent holding that a "circuit" is sufficiently structural to avoid application of § 112, ¶ 6. *Id.* at 11-12, 12 n.8.

Identically to "dropping means," addressed above, the TI Order's construction of the "communication manager" structure includes the language "portion of the circuit," thereby likewise acknowledging that the '449 Patent discloses a structural "circuit" for the "communication manager." Ex. 1 at 42. However, notwithstanding the presumption that § 112, ¶

6 does not apply, the TI Order concluded that the statute is applicable. NST respectfully disagrees with that holding.

Nonetheless, if the TI Order is correct that § 112, ¶ 6 applies, NST does not dispute the Order's construction of the function. However, as with "dropping means," NST does dispute whether the structure is a "circuit" (NST's position) or whether the structure is a "portion of the circuit configured to implement the scheme disclosed in the '449 Patent at 10:19–24, 10:41–54" (the TI Order's holding). *Compare* NST Br. at 14 *with* Ex. 1 at 42.

As with "dropping means," though the TI Order's definition of the structure correctly references the structural "circuit" (consistent with NST's construction), by additionally inserting a requirement that such circuit "implement the scheme disclosed in the '449 Patent at 10:19–24, 10:41–54," the construction incorrectly and impermissibly inserts additional *functional* limitations embodied in these specification passages (*e.g.*, describing possible scenarios where the communication manager refuses a connection and sends an error message). Such a construction is erroneous. *Micro Chem.*, 194 F.3d at 1258.

Therefore, as with "dropping means," if § 112, ¶ 6 applies, the correct structure is one that does not incorporate additional functional limitations, such as NST's proposal: "**circuit**." Or, partially adopting the TI Order's construction, a permissible construction is "**portion of the circuit configured to manage communication between modules**." *See* Ex. 1 at 42.

IV. NST Respectfully Disagrees with the TI Order's Holding that "Optimal Amount" and "Optimal Moment" are Indefinite

A. "Optimal Amount"

The TI Order found "optimal amount" to be indefinite, a finding which NST respectfully submits is incorrect. The TI Order's holding of indefiniteness rests upon the finding that the "optimal amount of data to be buffered" is purely subjective. Ex. 1 at 52. This finding, however,

is based on a misapprehension of the role of the chip designer. The TI Order mistakenly assumed that the chip designer, using his or her subjective opinion, would determine the "optimal amount." *Id.* at 54. This is not so. The chip designer determines the physical layout of the network, the communication properties to be applied, and, if multiple communication properties are to be applied, the priority and interaction amongst such properties. But the chip designer **does not** determine the "optimal amount of data to be buffered" (which may potentially render the term subjective and indefinite); instead, the hardware "determination unit" of the "integrated circuit" determines the "optimal amount" based on the physical layout and communication properties. '800 Patent at 6:47-53. This is a machine-made decision with a result that is objectively determinable and, therefore, definite.

Indeed, the "optimal amount" term relates to buffering, or storing, an amount of data that is optimal to send given the physical configuration of the network and the rules, or constraints, placed on the transmission by the communication properties. '800 Patent at 6:47-53. The '800 Patent makes clear that its overarching goal is to improve utilization of the network by "buffer[ing] data until the buffered data is sufficiently large to be transferred optimally…in a packet" because "the larger a packet is …overhead is reduced and the interconnect is utilized more efficiently." '800 Patent at 4:49-57; *see also id.* at 3:35-37, 4:18-28. Multiple passages of the specification confirm that the '800 Patent discloses an invention for improving—indeed, for optimizing—interconnect utilization in a network, where the improvement is achieved by buffering data until conditions for an optimal transfer are satisfied. '800 Patent at 3:35-37, 4:18-28, 4:49-57, 6:15-17,6:22-30, 6:31-36, 7:23-28, 7:44-51. As these passages explain: (1) buffering of data improves and/or optimizes interconnect utilization; (2) the optimal amount of data to be buffered can be

based on communication properties of a communication and (3) the optimal amount of data to be buffered can be specific to a particular interconnect.

The ’800 Patent lists latency, which is a measure of delay, as a connection property. ’800 Patent at 5:27-35. Using this example, if the connection properties impose a latency constraint of a maximum of 10 milliseconds, then the “optimal amount” is the most data that can be transmitted in under 10 milliseconds given the physical characteristics of the network (e.g., data path width, etc.). *See* Dkt. 82-6, Chmelar Decl., ¶ 198. This amount is objective and definite.

Thus, the TI Order’s conclusion that “optimal amount” is indefinite is undermined by the ’800 Patent’s disclosure of when and how optimal transfer conditions are satisfied. *See* ’800 Patent at 4:18-28; 4:49-57; 6:15-17; 6:22-30; 6:31-36; 7:23-28; 7:44-51. Thus, a POSITA would not consider this term to be indefinite and it should be construed as having its “**plain and ordinary meaning**.”

B. “Optimal Moment”

As with “optimal amount,” the TI Order concluded that “optimal moment” is indefinite because it is “purely subjective.” Ex. 1 at 56. Again, NST respectfully submits that this conclusion was incorrect because it rests on a misapprehension of the respective roles of the chip *designer* and the *chip itself*. Just as the “optimal amount” is determined by the determination unit of the chip based on the physical layout of the network and the communication properties, so too is the “optimal moment.” The designer merely determines what the physical layout and communication properties are; the chip determines the optimal amount and optimal moment.

As noted above, the ’800 Patent makes clear that its overarching goal is to improve utilization of the network. The ’800 Patent discloses that, in the example of a guaranteed throughput communication property, the “optimal moment” is when “one of the slots reserved” is available to accommodate the “optimal amount” of data. ’800 Patent at 7:4-14. This moment is

definite and determinable. Accordingly, a POSITA would understand the term "optimal moment" to not be indefinite and should be afforded its "**plain and ordinary meaning**."

V. Conclusion

As set forth above, NST agrees with the TI Order's constructions of "resource manager" and "interconnect means."

NST disagrees with the TI Order's conclusion that "dropping means" and "communication manager" are governed by § 112, ¶ 6. If, however, this Court were to agree with the TI Order that § 112, ¶ 6 applies, NST proposes modifications to the TI Order's findings regarding the means-plus "structure," as set forth above.

Finally, NST respectfully disagrees with the TI Order's conclusion that the "optimal amount" and "optimal moment" terms are indefinite. As explained above, these holdings rest on the incorrect finding that the term "optimal" is purely subjective based on a misapprehension of the respective roles of the chip designer and the chip itself. As explained above, a POSITA would understand that the "optimal amount" and "optimal moment" are determined by the chip (not the chip designer) and, therefore, are not indefinite and should be construed as having their "plain and ordinary meanings."

Date: March 1, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing document was served via electronic mail on March 1, 2024, to all opposing counsel of record.

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