UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

NETWORK SYSTEM TECHNOLOGIES, LLC Plaintiff, v. SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC., SAMSUNG AUSTIN SEMICONDUCTOR, LLC, SAMSUNG SEMICONDUCTOR, INC., LENOVO GROUP LTD., ONEPLUS TECHNOLOGY (SHENZHEN) CO., LTD., Defendants.	CASE NO. 2:22-CV-481-JRG **JURY TRIAL DEMANDED**

SAMSUNG'S RESPONSIVE CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

I. Introduction 1

II. Level of Ordinary Skill In The Art 2

III. Disputed Terms 2

A. "dropping means …" ('818 Patent) 2

B. "interface means …" ('818 Patent) 8

C. "communication manager …" ('449 Patent) 11

D. "mapping means …" ('052 Patent) 13

E. "arranging … the first and second information comprising said issued message as a single address" ('9893 Patent) 16

F. "each data package comprising N data elements" ('2893 Patent) 18

G. "optimal amount of data to be buffered" ('800 Patent) 22

H. "optimal moment for sending the data" ('800 Patent) 26

I. "determination unit" ('800 Patent) 27

IV. Conclusion 30

TABLE OF AUTHORITIES

Page(s)

Cases

Akzo Nobel Coatings, Inc. v. Dow Chem. Co.,
811 F.3d 1334 (Fed. Cir. 2016).....19, 26

Apex Inc. v. Raritan Comput., Inc.,
325 F.3d 1364 (Fed. Cir. 2003).....5

Apple Inc. v. Samsung Electronics Co., Ltd.,
695 F.3d 1370 (Fed. Cir. 2012).....19

Araujo v. E. Mishan & Sons, Inc.,
No. 19CIV5785JPCSN, 2022 WL 2342111 (S.D.N.Y. June 29, 2022).....19

Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.,
521 F.3d 1328 (Fed. Cir. 2008)..... *passim*

Augme Techs., Inc. v. Yahoo! Inc.,
755 F.3d 1326 (Fed. Cir. 2014).....6, 29

Barnes & Noble, Inc. v. LSI Corp.,
No. C-11-2709 EMC, 2014 WL 1365422 (N.D. Cal. Apr. 7, 2014).....19

Bennett Marine, Inc. v. Lenco Marine, Inc.,
549 F. App'x 947 (Fed. Cir. 2013).....7

Bicon, Inc. v. Straumann Co.,
441 F.3d 945 (Fed. Cir. 2006).....20, 26

Biomedino, LLC v. Waters Techs. Corp.,
490 F.3d 946 (Fed. Cir. 2007).....6, 10, 13, 29

Bitmicro LLC v. Kioxia America, Inc., et al.,
No. 6:22-cv-00331, Dkt. 54 (W.D. Tex. Feb. 16, 2023) (Albright, J.).....24

Blackboard, Inc. v. Desire2Learn, Inc.,
574 F.3d 1371 (Fed. Cir. 2009)..... *passim*

Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.,
296 F.3d 1106 (Fed. Cir. 2002).....15

Diebold Nixdorf, Inc. v. Int'l Trade Comm'n,
899 F.3d 1291 (Fed. Cir. 2018).....12, 28

Dyfan, LLC v. Target Corp.,
28 F.4th 1360 (Fed. Cir. 2022) 6, 10, 13

Egenera, Inc. v. Cisco Systems, Inc.,
972 F.3d 1367 (Fed. Cir. 2020).....4, 28

Intellectual Ventures I LLC v. T-Mobile USA, Inc.,
902 F.3d 1372 (Fed. Cir. 2018).....22, 26

Intellectual Ventures II LLC v. Sprint Spectrum, L.P.,
No. 217CV00662JRGRSP, 2019 WL 2959568 (E.D. Tex. Apr. 18, 2019), *report and recommendation adopted*, No. 217CV00661JRGRSP, 2019 WL 1987204 (E.D. Tex. May 6, 2019).....17, 18

Intelligent Automation Design, LLC v. Zimmer Biomet CMF & Thoracic, LLC,
799 F. App'x 847 (Fed. Cir. 2020) 6, 10

Interval Licensing LLC v. AOL, Inc.,
766 F.3d 1364 (Fed. Cir. 2014).....23, 26

KEYnetik, Inc. v. Samsung Elecs. Co.,
837 F. App'x 786 (Fed. Cir. 2020) 20

Kyocera Senco Indus. Tools Inc. v. Int'l. Trade Comm'n,
22 F.4th 1369 (Fed. Cir. 2022) ..... *passim*

Linear Tech. Corp. v. Impala Linear Corp.,
379 F.3d 1311 (Fed. Cir. 2004).....5

Mass. Inst. of Tech. & Elecs. for Imaging, Inc. v. Abacus Software,
462 F.3d 1344 (Fed. Cir. 2005).....5

Maurice Mitchell Innovations, L.P. v. Intel Corp.,
249 Fed. App'x 184 (Fed. Cir. 2007) 4, 7

Maurice Mitchell Innovations, L.P. v. Intel Corp.,
No. 2:04-CV-450, 2006 WL 1751779 (E.D. Tex. June 21, 2006), *aff'd*, 249 F. App'x 184 (Fed. Cir. 2007) 1

Moleculon Rsch. Corp. v. CBS, Inc.,
793 F.2d 1261 (Fed. Cir. 1986) (abrogated on other grounds).....19

MTD Prod. Inc. v. Iancu,
933 F.3d 1336 (Fed. Cir. 2019)..... *passim*

Nat'l Oilwell DHT, L.P. v. Amega W. Servs., LLC,
No. CV 2-14-1020, 2019 WL 1787250 (E.D. Tex. Apr. 24, 2019).....7

Nautilus Inc. v. Biosig Instruments, Inc.,
572 U.S. 898 (2014).....16, 22

Phillips v. AWH Corp.,
415 F.3d 1303 (Fed. Cir. 2005).....18

Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.,
711 F.3d 1348 (Fed. Cir. 2013).....5

Renishaw plc v. Marposs Societa' per Azioni, 158 F.3d 1250 (Fed. Cir. 1998).....18

ResQNet.com, Inc. v. Lansa, Inc.,
346 F.3d 1374 (Fed. Cir. 2003).....19

Skky, Inc. v. MindSeek, s.a.r.l.,
859 F.3d 1014 (Fed. Cir. 2017).....5

TQP Dev., LLC v. Intuit Inc.,
No. 2:12-CV-180-WCB, 2014 WL 2810016 (E.D. Tex. June 20, 2014).....1

Williamson v. Citrix Online, LLC,
792 F.3d 1339 (Fed. Cir. 2015) (en banc)..... *passim*

WSOU Invs. LLC v. Google LLC,
No. 2022-1066, 2023 WL 6210607 (Fed. Cir. Sept. 25, 2023)..... *passim*

XR Commc'ns, LLC v. ARRIS Sols., Inc.,
No. 2022-1125, 2023 WL 3529830 (Fed. Cir. May 18, 2023).....4

I. INTRODUCTION

Plaintiff Network System Technologies, LLC ("NST") asserts six patents[1] that concern network-on-chip technology, and the parties dispute the meaning of claim terms in each of the asserted patents. But most of these disputes are not a matter of first impression. Five of the nine terms at issue here were previously construed by Judge Schroeder in *Network System Technologies, LLC v. Texas Instruments Inc. et al.*, No. 2:22-cv-00482 (E.D. Tex.) ("*NST II*"), and Samsung respectfully submits that those same constructions should be applied here. *See* Ex. A, *NST II*, Dkt. No. 150. Indeed, this Court has held that earlier claim construction decisions pertaining to the same patents are "entitled to reasoned deference under the broad principals of *stare decisis* and the goals articulated by the Supreme Court in *Markman*, even though *stare decisis* may not be applicable *per se*." *Maurice Mitchell Innovations, L.P. v. Intel Corp.*, No. 2:04-CV-450, 2006 WL 1751779, at *4 (E.D. Tex. June 21, 2006), *aff'd*, 249 F. App'x 184 (Fed. Cir. 2007); *see also TQP Dev., LLC v. Intuit Inc.*, No. 2:12-CV-180-WCB, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014) ("[P]revious claim constructions in cases involving the same patent are entitled to substantial weight, and the Court has determined that it will not depart from those constructions absent a strong reason for doing so."). By contrast, NST seeks to relitigate the *NST II* Court's constructions. But, in doing so, NST fails to raise any material arguments not already addressed by Judge Schroeder, and instead proposes the same constructions and arguments that were already considered and rejected by the Court in *NST II*. The Court should reject them once again in this case. As to the other disputed terms, Samsung's proposals adhere to the tenets of claim construction and should be adopted by the Court.

[1] The asserted patents are U.S. Patent Nos. 7,366,818 (the "'818 patent"); 7,373,449 (the "'449 patent"); 7,594,052 (the "'052 patent"); 7,769,893 (the "'9893 patent"); 8,072,893 (the "'2893 patent"); and 8,086,800 (the "'800 patent").

NST's brief also mischaracterizes the alleged inventions claimed in the patents at issue here. Samsung respectfully refers the Court to its submitted technology tutorial for an overview of both network-on-chip technology and the scope of the asserted patents.

II. LEVEL OF ORDINARY SKILL IN THE ART

Samsung proposes that a person of ordinary skill in the art ("POSITA") at the time of the alleged inventions would have had at least a Bachelor's degree in computer science, electrical engineering, computer engineering, or an equivalent technical degree, and two or more years of experience with system-on-chip, interconnect, or networking technologies. Ex. B, Decl. of Vijay Madisetti ("Madisetti Decl.") ¶ 40. Additional education would compensate for less experience, and vice-versa. *Id.* Samsung's proposal is virtually the same as the level of skill adopted by the Court in *NST II*. Ex. A at 18. Ultimately, neither party believes that any differences in the proposed levels of skill would impact the constructions. *See* Madisetti Decl. ¶¶ 41–43; Dkt. No. 100 at 7.

III. DISPUTED TERMS[2]

A. "dropping means …" ('818 Patent)

Defendants' Proposed Construction	Plaintiff's Proposed Construction
Subject to Section 112, ¶ 6 **Function**: 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" **Structure**: portion of the circuit configured to implement the scheme disclosed in the '818 Patent at 7:45-56, 8:38-40, and 8:64-9:10	**<u>Not subject to § 112, ¶ 6:</u>** "dropping means": "circuit configured to drop data." The remaining language should be afforded its plain and ordinary meaning. **<u>If the Court holds § 112, ¶ 6 applies:</u>** **Function**: *Claim 1*: "drop data exchanged by said first and second module"; *Claim 3*: function according to claim 1 and "create an error message if data is dropped"; *Claim 5*:

[2] As reflected in the P.R. 4-3 JCCS, the parties agreed to constructions for several claim terms. *See* Dkt. No. 91. To further narrow the disputes before the Court, Samsung will agree to NST's proposed constructions for "interconnect means" and "said first wrapper/said second wrapper."

Otherwise, indefinite	function according to claim 3 and "send said error message to said first module" **Structure**: "circuit"

Samsung's proposed construction is identical to the one adopted by the Court in *NST II*. Ex. A at 27–31. NST rehashes the same arguments already rejected in *NST II* and fails to provide any basis for why the Court should reach a different conclusion here. Simply put, it should not.

Because this term uses the word "means," it is presumptively subject to § 112, ¶ 6. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015) (en banc). Further, "dropping means" is a purely functional term, and it is undisputed that this term lacks any "definite meaning as the name for structure."[3] *Id*. at 1348. As the Federal Circuit has explained, "a critical question is whether 'the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure,' including either a particular structure or a class of structures." *MTD Prod. Inc. v. Iancu*, 933 F.3d 1336, 1341 (Fed. Cir. 2019). Dr. Madisetti opines that the term "dropping means" does not connote a particular structure or class of structures to a POSITA, and neither NST nor its expert offers any argument or evidence to the contrary. Madisetti Decl. ¶¶ 47–49; *see also Kyocera Senco Indus. Tools Inc. v. Int'l. Trade Comm'n*, 22 F.4th 1369, 1380 (Fed. Cir. 2022) (finding § 112, ¶ 6 applies where "no party claims [a term] has a plain and ordinary meaning to those skilled in the art"). Nor does any of the surrounding claim language impart any particular structure to this term. Madisetti Decl. ¶¶ 47–49.

[3] Contrary to NST's argument, there is no inconsistency in Samsung's position that "dropping means," "interface means," and "mapping means" are subject to § 112, ¶ 6, but "interconnect means" is not. As Dr. Madisetti explains, a POSITA would recognize that "interconnect means" has a "'definite meaning as the name for structure,'" while these other terms do not. *See* Madisetti Decl. ¶¶ 46–49, 57–58, 72, 77, 80.

As it does for all of the means-plus-function terms at issue, NST argues that "dropping means" is not subject to § 112, ¶ 6 merely because it is "comprised in an 'integrated circuit.'" Dkt. No. 100 at 10 n.2. This argument has no merit and was correctly rejected by the Court in *NST II*. As the Court rightly explained there, "the Federal Circuit held that '[m]ere inclusion of a limitation within a structure does not automatically render the limitation itself sufficiently structural.'" Ex. A at 31 (quoting *Egenera, Inc. v. Cisco Systems, Inc.*, 972 F.3d 1367, 1374 (Fed. Cir. 2020)). NST's argument that an unspecified portion of the circuit is sufficient structure fails for the same reason.[4] *See* Dkt. No. 100 at 9–11. Indeed, when faced with a similar argument, the Federal Circuit held that "[t]he mere mention of a complicated integrated circuit, comprised of hundreds if not thousands of circuits, is much too broad to sufficiently indicate the precise 'means for causing' structure to a [POSITA]." *Maurice Mitchell Innovations, L.P. v. Intel Corp.*, 249 Fed. App'x 184, 188 (Fed. Cir. 2007). NST's argument would effectively carve out all apparatus claims from the scope of § 112, ¶ 6, a result that finds no support in the text of the statute and is foreclosed by binding Federal Circuit precedent.

Moreover, the cases that NST relies on in support of its argument are inapposite. Not one of those cases held that a "means" term overcame the presumption that § 112, ¶ 6 applies because it was part of an integrated circuit. Instead, each case cited by NST involved a very different scenario, where the disputed terms expressly included the word "circuit" and the Federal Circuit

[4] NST's argument that Samsung's proposed construction somehow "concedes that a 'circuit' is sufficiently structural" is wrong and reflects a misunderstanding of the relevant analysis. As the Federal Circuit has explained, "the question is not whether [the claim term] is utterly devoid of structure but whether the claim term recites sufficient structure to perform the claimed functions." *Egenera*, 972 F.3d at 1374; *see also XR Commc'ns, LLC v. ARRIS Sols., Inc.*, No. 2022-1125, 2023 WL 3529830, at *2 (Fed. Cir. May 18, 2023). Neither "circuit" nor "portion of the circuit" is sufficient structure to perform the claimed functions (*see* Madisetti Decl. ¶ 54), and Samsung's proposed construction does not make any concession to the contrary. Regardless, the claim term at issue is not "circuit," it is "dropping means."

considered whether the disputed term overcame the presumption that means-plus-function claiming ***does not apply***. *See Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348, 1363–66 (Fed. Cir. 2013) (construing "soft start circuit"); *Mass. Inst. of Tech. & Elecs. for Imaging, Inc. v. Abacus Software*, 462 F.3d 1344, 1355–57 (Fed. Cir. 2005) (construing "aesthetic correction circuitry"); *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1319–21 (Fed. Cir. 2004) (construing "circuit" and "circuitry"); *Apex Inc. v. Raritan Comput., Inc.*, 325 F.3d 1364, 1369, 1373–75 (Fed. Cir. 2003) (construing, *e.g.*, "first interface circuit," "on-screen programming circuit," "programmed logic circuit," "second interface circuit").[5] The court in *NST II* rejected this very argument premised on the same cases. Ex. A at 30–31.

Because "dropping means" is subject to § 112, ¶ 6, the Court must "identify the claimed function" and "determine what structure, if any, disclosed in the specification corresponds to the claimed function." *Williamson*, 792 F.3d at 1351. The parties generally agree regarding the function of the "dropping means," but disagree regarding the corresponding structure. As the Court held in *NST II*, the corresponding structure for these claimed functions 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." Ex. A at 30; Madisetti Decl. ¶¶ 50–52. These portions of the specification disclose how the claimed functions are performed, such as by implementing a "milk policy" or a "wine policy" to drop messages in the case of "buffer overflow," and by specifying that "requests can only be dropped by the active network interface ports ANIP, while responses can only be dropped by the passive network interface ports PNIP." '818 patent at 7:45–56, 8:38–40, 8:64–9:10. A "series of instructions" to be implemented in an integrated circuit may constitute sufficiently definite

[5] NST also cites *Skky, Inc. v. MindSeek, s.a.r.l.*, 859 F.3d 1014 (Fed. Cir. 2017) but, in that case, the court held that the actual claim term at issue—"wireless device means"—"recite[d] structure, not functionality." *Id*. at 1020. No "circuit" was at issue.

structure under § 112, ¶ 6. *Intelligent Automation Design, LLC v. Zimmer Biomet CMF & Thoracic, LLC*, 799 F. App'x 847, 852 (Fed. Cir. 2020); *see also Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1366 (Fed. Cir. 2022) ("[S]tructure can be recited … through … a description of the claim limitation's operation and 'how the function is achieved in the context of the invention.'"). NST argues without support that these portions of the specification sweep "additional functional limitations" into the claims (Dkt. No. 100 at 11), and the Court correctly rejected this argument in *NST II*, finding that they "disclose[] embodiments of the corresponding structure that performs the function[s] recited in the claim[s]." Ex. A at 31.

To the extent the structure of the "dropping means" is not what was identified in *NST II* and proposed by Samsung, then there is no corresponding structure clearly linked to the claimed functions disclosed anywhere in the specification, and this term is indefinite. *See Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1331 (Fed. Cir. 2008) ("[I]n the absence of structure disclosed in the specification to perform [the claimed] functions [of a means-plus-function term], the claim limitation would lack specificity, rendering the claim as a whole invalid for indefiniteness…."); *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 950 (Fed. Cir. 2007). While the specification refers to a "dropping manager," this is nothing more than a black box and no more structural than the claimed "dropping means." *See* '818 patent at 7:48–50, 864–66, 9:10, Fig. 2; Madisetti Decl. ¶ 51. "Simply disclosing a black box that performs the recited function is not [] sufficient . . . to render the means-plus-function term definite." *Augme Techs., Inc. v. Yahoo! Inc.*, 755 F.3d 1326, 1338 (Fed. Cir. 2014); *see also Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1383 (Fed. Cir. 2009). Indeed, NST concedes that "[t]he '818 Patent uses the terms 'dropping means' and 'dropping manager' interchangeably" (Dkt. No. 100

at 9 n.1), which "leads to the conclusion that neither term discloses sufficient structure." *WSOU Invs. LLC v. Google LLC*, No. 2022-1066, 2023 WL 6210607, at *4 (Fed. Cir. Sept. 25, 2023).

NST's proposed structure—"circuit"—is wrong as a matter of law. First, nothing in the '818 patent "clearly links or associates that structure to the function recited in the claim." *Williamson*, 792 F.3d at 1352. NST does not cite any portions of the '818 patent that refers to a "circuit" in the context of the claimed functions and, indeed, there are none. Rather, NST seems to rely on references to an "integrated circuit." But "[t]he mere mention of a complicated integrated circuit" is insufficient. *Maurice Mitchell Innovations*, 249 Fed. App'x at 188. Second, the word "circuit" on its own is not sufficient structure for performing the claimed functions. *Williamson*, 792 F.3d at 1349. As Dr. Madisetti explains, the word "circuit" merely refers to a generic "combination of coupled electrical elements." Madisetti Decl. ¶ 54.

Third, NST's proposed structure is wrong because it "attempt[s] to capture any possible means for achieving" the claimed functions, even though § 112 ¶ 6 "is intended to prevent such pure functional claiming." *Blackboard*, 574 F.3d at 1385; *Nat'l Oilwell DHT, L.P. v. Amega W. Servs., LLC*, No. CV 2-14-1020, 2019 WL 1787250, at *8 (E.D. Tex. Apr. 24, 2019) ("the scope of a means-plus-function limitation 'does not extend to all means for performing a certain function'" (citation omitted)). Indeed, the Federal Circuit has recognized that corresponding structure cannot be "***any*** circuit capable of performing the required function," as NST contends. *Bennett Marine, Inc. v. Lenco Marine, Inc.*, 549 F. App'x 947, 954 (Fed. Cir. 2013) (emphasis in original). If NST's proposed structure were adopted, it would render the bargain struck in § 112, ¶ 6 meaningless by allowing NST to claim functionally without paying the statutorily mandated price for doing so. *See Williamson*, 792 F.3d at 1347 (explaining the "specific constraints" Congress placed on means-plus-function claiming).

For the same reasons, NST's previously undisclosed alternative—a "portion of a circuit configured to drop data" (Dkt. No. 100 at 11)—also fails. "[L]anguage [that] simply describes the function to be performed" rather than the specific structure from the specification (if any) for how to perform that function does not satisfy § 112, ¶ 6. *Aristocrat*, 521 F.3d at 1334; *see also Blackboard*, 574 F.3d at 1371. Moreover, NST's proposed structure fails to address the specific configuration in the specification (a buffer configured to implement milk and/or wine policies in the case of buffer overflow) and also fails to address all of the claimed functions, which include not only "dropping data," but also "creat[ing] an error message" and "send[ing] said error message." *See Williamson*, 792 F.3d at 1351–52 ("the patentee must disclose adequate corresponding structure to perform all of the claimed functions").

B. "interface means …" ('818 Patent)

Defendants' Proposed Construction	Plaintiff's Proposed Construction
Subject to Section 112, ¶ 6 **Function**: Claim 1: "managing the interface between a module (M, S) and a network (N, RN) and controlling dropping of data and transaction completion"; Claim 6: "store received error messages"; Claim 7: "not drop error messages" **Structure**: portion of the circuit configured to implement the scheme disclosed in the '818 Patent at 7:57-8:63 and 9:10-49 and the structure of the claimed dropping means. Otherwise, indefinite.	**<u>Not subject to § 112, ¶ 6:</u>** "interface means": "interface circuit that connects a module to a network" "interface means (ANIP, PNIP) for managing the interface…": NST incorporates its definitions for the terms "interface means" and "dropping means," and the agreed upon definition for the term "network." The remaining language should be afforded its plain and ordinary meaning. **<u>If the Court holds § 112, ¶ 6 applies</u>:** **Function**: *Claim 1*: "manage the interface between a module and the network, and control the dropping of data and therefore the transaction completion"; *Claim 6*: the function according to claim 1 and "store received error messages"; *Claim 7*: the function according to claim 1 and "not drop error messages"

	Structure: "circuit"

Samsung's proposed construction is the same as the one adopted by the Court in *NST II*, with one clarification. Ex. A at 32–38. Specifically, consistent with the express claim language, Samsung's proposed construction clarifies that the corresponding structure includes "the structure of the claimed dropping means."[6] *See* '818 patent at cl. 1; Madisetti Decl. ¶ 59. NST on the other hand fails to provide any basis for why the Court should apply a different construction.

Because "interface means" uses the word "means," it is presumptively subject to § 112, ¶ 6. *See Williamson*, 792 F.3d at 1349. Further, as the Court found in *NST II*, "a POSITA would not have understood an 'interface' to encompass structure necessary to perform the specific functions dropping data and transaction completion," and the claim language "connotes function and does not recite structure." Ex. A at 33; *see also* Madisetti Decl. ¶ 58 (opining that an "interface" does not have sufficient structure to perform the claimed functions); *Williamson*, 792 F.3d at 1351–52. NST does not argue or identify any evidence suggesting otherwise. *See* Dkt. No. 100 at 11–13.

NST's argument that this term is not subject to § 112, ¶ 6 because the claimed "interface means" is "comprised in an 'integrated circuit'" and a "portion of the circuit" fails here for the same reasons explained with respect to the "dropping means" term. *See supra* § III.A; *see also* Ex. A at 37. NST's argument that this term avoids the requirements of § 112, ¶ 6 because it must contain "storage circuitry" also fails. Dkt. No. 100 at 12 n.3. "Storage circuitry" is not "adequate corresponding structure" to perform the functions of "managing the interface," "dropping data,"

[6] NST does not appear to dispute that the "interface means" includes the "dropping means" and Samsung would also be amenable to the Court adopting the construction from the *NST II* case without further clarification.

or "transaction completion" recited in claim 1. *See Williamson*, 792 F.3d at 1351–52. Moreover, the words "storage circuitry," "latches," "flip-flops," "registers," and "memory cells" do not appear anywhere in the '818 patent.

Given that "interface means" is subject to § 112, ¶ 6, both parties offer proposals for the claimed function and corresponding structure. The parties generally agree upon the claimed function, but disagree as to the corresponding structure. As the Court held in *NST II*, the corresponding structure for this function is "portion of the circuit configured to implement the scheme disclosed in the '818 Patent at 7:57–8:63, 9:10–49." Ex. A at 38. NST wrongly argues that these portions of the specification insert "additional functional limitations" into the claims. Dkt. No. 100 at 11. On the contrary, they provide structure through disclosure of "the claim limitation's operation and 'how the function is achieved in the context of the invention.'" *See Dyfan*, 28 F.4th at 1366; *see also Intelligent Automation Design*, 799 F. App'x at 852. Specifically, they disclose the scheme for how the claimed functions are performed, that is by utilizing a sequence of different messages (i.e., CMD, OUTDATA, RETDATA, RETSTAT) to control transaction completion and configuring buffer space to ensure that RETSTAT messages are not dropped. *See* '818 patent at 8:40–45, 9:10–42; Madisetti Decl. ¶ 60. NST implicitly admits as much by acknowledging that these portions refer to "commands" and "messages" "sent by the network interfaces" in performing the claimed functions. Dkt. No. 100 at 13. To the extent the corresponding structure is not what the *NST II* Court identified and Samsung proposed, then there is no corresponding structure disclosed anywhere in the specification for performing the claimed functions, and this term is indefinite. *See Aristocrat Techs.*, 521 F.3d at 1331; *Biomedino*, 490 F.3d at 950.

NST's proposed structures of "circuit" or "portion of the circuit configured to connect modules to the network" fail here for the same reasons explained above with respect to the "dropping means" term. *See supra* § III.A; *see also* Madisetti Decl. ¶ 61. As with its proposal for "dropping means," NST's previously undisclosed "portion of the circuit" alternative fails to address the specific structural configuration in the specification and does not even purport to address all of the claimed functions. *See Aristocrat*, 521 F.3d at 1334; *see also Blackboard*, 574 F.3d at 1371; *Williamson*, 792 F.3d at 1351–52.

C. "communication manager …" ('449 Patent)

Defendants' Proposed Construction	Plaintiff's Proposed Construction
Subject to Section 112, ¶ 6 **Function**: "forwarding a request to a resource manager" **Structure**: portion of the circuit configured to implement the scheme disclosed in the '449 Patent at 10:19-24, 10:41-54 Otherwise, indefinite.	**<u>Not subject to § 112, ¶ 6:</u>** "communication manager": "circuit that manages communication between modules." The remaining language should be afforded its plain and ordinary meaning. **<u>If the Court holds § 112, ¶ 6 applies:</u>** **Function**: "forward a request for a connection to a resource manager" **Structure**: "circuit"

Samsung's proposed construction is identical to the one adopted by the Court in *NST II* and should be adopted here too. Ex. A at 38–42. Though it does not use the word "means," this term "recites 'function without reciting sufficient structure for performing that function.'" *Williamson*, 792 F.3d at 1349 (citation omitted). Dr. Madisetti presents unrebutted testimony that "communication manager" is "not a term of art identifying a particular structure or class of structures" and that "there is no particular class of structures that implements the generic function of managing communications that would be recognized by a POSITA." Madisetti Decl. ¶¶ 65–66; *see also MTD Prod.*, 933 F.3d at 1341; *Kyocera*, 22 F.4th at 1380. Further, in considering a

term that similarly recited "manager," the Federal Circuit found that "'access control manager' is simply an abstraction that describes the function … performed by some undefined component of the system." *Blackboard*, 574 F.3d at 1383. Consistent with this finding, NST concedes that "[t]he '449 Patent uses the terms 'communication manager' and 'communication managing means' interchangeably."[7] Dkt. No. 100 at 14 n.4; '449 patent at 7:35–8:6; *see also* Dkt. No. 100-7 ¶ 107; *WSOU*, 2023 WL 6210607, at *4. Additionally, the surrounding claim language does not impart any particular structure (Madisetti Decl. ¶¶ 67); rather, it only describes it by the function it performs.

NST argues this term is not subject to § 112, ¶ 6 because the claimed "communication manager" is "a constituent of an 'integrated circuit'" and because it may be "arranged in a 'network,' a 'router network,' or a 'network interface means.'" Dkt. No. 100 at 14–15. These arguments were rejected in *NST II* and fail here for the same reasons explained with respect to the "dropping means" term. *See supra* § III.A; Ex. A at 42; *see also WSOU*, 2023 WL 6210607, at *6 (rejecting patentee's reliance on "language [that] merely describes the location of the [claimed means], rather than what it is or how it operates"). Further, while NST asserts that a POSITA would understand "communication manager" has "'sufficiently definite meaning as the name for structure'" (Dkt. No. 100 at 15), neither NST nor its expert cites any "evidence, such as dictionary definitions, suggesting that '[communication manager]' is a term commonly understood by persons of ordinary skill in the art." *See Diebold Nixdorf, Inc. v. Int'l Trade Comm'n*, 899 F.3d 1291, 1300 (Fed. Cir. 2018); *see also MTD Prod.*, 933 F.3d at 1341; *Kyocera*, 22 F.4th at 1380.

[7] NST arguments notwithstanding, there is no inconsistency in Samsung identifying "communication manger" as a means plus function term, and not "resource manager." As the Court found in *NST II*, "resource manager" has a plain and ordinary meaning, while "communication manager" does not. *See* Ex. A at 46; *see also MTD Prod.*, 933 F.3d at 1341.

The parties generally agree that the function performed by the "communication manager" is what was found by the Court in *NST II*: "forwarding a request to a resource manager." *See* Ex. A at 42; Madisetti Decl. ¶¶ 63–64; Dkt. No. 100 at 16. And, as held in *NST II*, the corresponding structure for this function is "portion of the circuit configured to implement the scheme disclosed in the '449 Patent at 10:19-24, 10:41-54." Ex. A at 42; Madisetti Decl. ¶¶ 63–64. As it did in *NST II*, NST mistakenly argues that these portions of the specification insert "additional functional limitations" into the claims. *See* Dkt. No. 100 at 16; Ex. C, *NST II* Hr'g Tr. ("*NST II* Tr.") at 62:2–10. On the contrary, they provide sufficiently definite structure through the only disclosure of "the claim limitation's operation and 'how the function is achieved in the context of the invention.'" *See Dyfan*, 28 F.4th at 1366; Madisetti Decl. ¶ 68. To the extent the corresponding structure is not what was identified in *NST II* and proposed by Samsung, there is no corresponding structure clearly linked to the claimed function disclosed anywhere in the specification, and this term is indefinite. *See Aristocrat Techs.*, 521 F.3d at 1331; *Biomedino*, 490 F.3d at 950.

The only alternatives identified by NST—"circuit" and "portion of the circuit configured to manage communication between modules"—fail here for the same reasons explained above with respect to the "dropping means" term. *See supra* § III.A; *see also* Madisetti Decl. ¶ 69. Further, as with its proposal for "dropping means," NST's previously undisclosed "portion of the circuit" alternative fails to address the specific structural configuration in the specification and is not meaningfully different than NST's primary proposed construction.

D. "mapping means …" ('052 Patent)

Defendants' Proposed Construction	Plaintiff's Proposed Construction
Subject to Section 112, ¶ 6. **Function**: "mapping the requested at least one communication service based on said specific communication properties to a connection based on a set of connection	**<u>Not subject to § 112, ¶ 6:</u>** "mapping means": "circuit configured to map a requested communication service to a connection." NST incorporates the agreed upon definition for the term "connection

properties according to said at least one communication service identification." **Structure**: adapter unit/shell comprising a sequentializing unit and a desequentializing unit as disclosed in the '052 Patent at 5:58-6:3, 6:30-7:14, Figs. 1, 2A and 2B. Otherwise, indefinite.	properties" and the remaining language should be afforded its plain and ordinary meaning. **<u>If the Court holds § 112, ¶ 6 applies:</u>** **Function**: "mapping the requested at least one communication service based on said specific communication properties to a connection based on a set of connection properties according to said at least one communication service identification" **Structure**: "circuit"

Because this term uses the word "means," it is presumptively subject to § 112, ¶ 6. *Williamson*, 792 F.3d at 1349. Further, "mapping means" is a purely functional term, and it is undisputed that the term lacks any "definite meaning as the name for structure." *See id*. at 1348. Dr. Madisetti opines that this term does not connote "a particular structure or class of structures" to a POSITA (Madisetti Decl. ¶ 72), and neither NST nor its expert offer any argument or evidence that "mapping means" "has a plain and ordinary meaning to those skilled in the art" or that it "is used in common parlance or by persons of skill in the pertinent art to designate structure.'" *See Kyocera*, 22 F.4th at 1380; *MTD Prod.*, 933 F.3d at 1341. Nor does any of the surrounding claim language impart any particular structure. Madisetti Decl. ¶ 72.

NST argues—as it does for "dropping means"—that this term is not subject to § 112, ¶ 6 because it is "part of an 'integrated circuit.'" Dkt. No. 100 at 17–18. But NST's argument fails here for the same reasons explained above. *See supra* § III.A. NST's argument that "mapping means" is structural because it is part of the network interface fails for the same reason.[8] *See id*.;

[8] This argument also fails because the independent claims do not require the "mapping means" to be part of the network interface. Only dependent claim 2 recites such a limitation.

see also WSOU, 2023 WL 6210607, at *6 (rejecting patentee's reliance on "language [that] merely describes the location of the [claimed means], rather than what it is or how it operates").

Accordingly, "mapping means" is subject to § 112, ¶ 6, and the Court must identify the claimed function and corresponding structure. *Williamson*, 792 F.3d at 1351. The parties are in agreement regarding the function of the "mapping means," but disagree regarding the corresponding structure. Samsung's proposed structure—adapter unit/shell comprising a sequentializing unit and a desequentializing unit as disclosed in the '052 Patent at 5:58–6:3, 6:30–7:14, Figs. 1, 2A and 2B—is the correct one because "the intrinsic evidence clearly links or associates that structure to the function recited in the claim." *Williamson*, 792 F.3d at 1352. Indeed, NST admits as much in its brief, stating "[t]he intrinsic evidence assigns various structures that can perform the agreed upon function of the claimed 'mapping means,' including an 'adapter unit A' … and 'shell A.'" Dkt. No. 100 at 18; *see also* Dkt. No. 100-7 ¶ 130; '052 patent at 5:58–6:3, 6:30–7:14, Figs. 1, 2A, 2B; Madisetti Decl. ¶¶ 73–74. Likewise, NST's expert admits that "sequentializing and desequentializing is a subset of 'mapping…' that is described in the '052 Patent." Dkt. No. 100-7 ¶ 131; *see also* Dkt. No. 100 at 19 (admitting that the claimed mapping function "may involve sequentializing and desequentializing, by 'a sequentializing unit and a desequentializing unit'"). To be sure, and contrary to NST's assertion, Samsung's proposal does not *limit* the corresponding structure to "a sequentializing unit and a desequentializing unit," but the '052 patent explicitly discloses that *at least* these elements are part of the adapter/shell. '052 patent at 6:46–53. Under binding Federal Circuit law, "corresponding structure must include ***all structure*** that actually performs the recited function." *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1119 (Fed. Cir. 2002) (emphasis added). Thus, Samsung's proposed structure should be adopted.

In contrast, NST's identification of "circuit" as the corresponding structure fails here for the same reasons explained above with respect to the "dropping means" term. *See supra* § III.A; *see also* Madisetti Decl. ¶ 75.

E. "arranging … the first and second information comprising said issued message as a single address" ('9893 Patent)

Defendants' Proposed Construction	Plaintiff's Proposed Construction
Indefinite	"arranging … the first and second information comprised in said issued message as a single address"

NST argues that the term is not indefinite because it contains a clear typographical mistake. But that is not what Samsung argues. Rather, the term is indefinite because, as Dr. Madisetti explains, "a POSITA would not understand what it means to 'arrange' the claimed [] first and second information 'as a single address,' or what type of manipulation or modification of the first and second information (if any) is required or allowed in doing so." Madisetti Decl. ¶ 83. Indeed, the "arranging" step is not described ***at all*** in the '9893 patent's "Description of the Preferred Embodiments," and the intrinsic evidence does not provide the reasonable certainty that is required by the law. *See Nautilus Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014).

The '9893 patent never explains what it means to "arrange" first and second pieces of information as a "single address," nor does it describe the types of operations that would be used in doing so. In the "Description of the Preferred Embodiments" section of the specification, the word "arrange" appears just once and in a different context (*see* '9893 patent 7:2–4 (describing an address mapping table "arranged" in the network)), and the phrase "single address" does not appear at all. And while that section refers to a "transaction address" and a "global address" comprising various pieces of information, it never explains the process by which those pieces of information

are "arranged" to generate a "single address" or what the resulting address looks like. *See* '9893 patent at 5:49–52, 6:27–60.

NST's expert opines that "arranging" encompasses "well-known operations such as modulo, truncation, hash, and so on" (Dkt. No. 100-7 ¶¶ 156–59), but this unbounded opinion only highlights the lack of clarity regarding what it means to arrange two disparate pieces of information to form a single usable address. None of the operations listed by NST's expert are described anywhere in the '9893 patent and further would not be recognized by a POSITA to involve "arranging" the first and second information as a single address. *See* Madisetti Decl. ¶ 85. Indeed, NST's expert explains that the results of these operations must be "un-arranged" to discern the first and second information (*see* Dkt. No. 100-7 ¶ 157), which is contrary to the claim's requirement that the "address translation unit"—the very same unit that performs the "arranging" step—determine the addressed message receiving module and the particular location within that module "***based on said single address***." *See* '9893 patent, cl. 4. During the prosecution of the '9893 patent, the applicants explained that the address translation unit does so "based on the first information of said single address" and "based on the second information of the single address." Ex. D ('9893 FH, 12/16/2008 Resp.) at 9–10. It cannot be the case—and is inconsistent with the patent for NST to argue—that the address translation unit arranges the first and second information as a single address only to un-arrange it in the very next step.

NST's argument regarding this term focuses entirely on an alleged "clerical or typographical mistake,"[9] which NST purports to "correct" by replacing the word "comprising"

[9] NST has been on notice of Samsung's arguments regarding this term since at least the service of Dr. Madisetti's declaration on January 9, 2023, and any arguments that NST purports to raise for the first time in its reply are waived. *See Intellectual Ventures II LLC v. Sprint Spectrum, L.P.*, No. 217CV00662JRGRSP, 2019 WL 2959568, at *3 (E.D. Tex. Apr. 18, 2019) ("It is black-letter

with "comprised in." *See* Dkt. No. 100 at 19–20. But NST's construction does nothing to address the lack of certainty regarding the scope of the "arranging" step, and this term remains indefinite whether or not the Court agrees that there is a typo. *See* Madisetti Decl. ¶ 85.

F. "each data package comprising N data elements" ('2893 Patent)

Defendants' Proposed Construction	Plaintiff's Proposed Construction
"every data package communicated by the network stations has a fixed size of N data elements"	"data package" means "fixed-size arrangement of data," "data elements" means "groups of data," and the remaining language should be afforded their plain and ordinary meaning

The parties dispute whether this term requires that every data package has the same size of "N data elements," as Samsung contends, or whether "the number of data elements can vary between one data package and the next," as NST argues. Dkt. No. 100 at 21. Samsung's proposed construction is the plain and ordinary meaning of the term in the context of the patent and the only meaning that reflects "'what the inventors actually invented and intended to envelop with the claim.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (quoting *Renishaw plc v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)).

The claim language makes clear that every data package communicated in the network has "N data elements"—no more and no less. First, the claims recite "a data communication network … for communicating ***data packages*** between the functional blocks, ***each data package*** comprising N data elements." '2893 patent, cl. 1, 10. By its plain meaning, "each data package" refers to every one of the "data packages" communicated by the network. Madisetti Decl. ¶ 87. Indeed, the Federal Circuit has repeatedly held under similar circumstances that "each" means

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law that arguments raised for the first time in a reply brief are waived 'as a matter of litigation fairness and procedure.'") (citation omitted), *report and recommendation adopted*, No. 217CV00661JRGRSP, 2019 WL 1987204 (E.D. Tex. May 6, 2019).

"every" or "all." For example, in *Apple Inc. v. Samsung Electronics Co., Ltd.*, 695 F.3d 1370 (Fed. Cir. 2012), the Federal Circuit held that a limitation which recited "a plurality of modules ... wherein ... ***each*** heuristic module … employs a different, predetermined heuristic algorithm" required "***every*** module to have a unique heuristic algorithm." *Id*. at 1377–79 (emphasis added). Similarly, in *ResQNet.com, Inc. v. Lansa, Inc.*, 346 F.3d 1374 (Fed. Cir. 2003), the Federal Circuit held that a limitation which recited "said ID being generated as a function of the number, location, and length of ***each field***" required the algorithm that generated the claimed ID "to use ***all fields***." *Id*. at 1379 (emphasis added). The definition of the word "each" likewise confirms that it means "every" as used in the '2893 patent claims. *See, e.g.*, Ex. E (Black's Law Dictionary, 5th Ed. (1979)) ("**Each**. A distributive adjective pronoun, which denotes or refers to ***every one*** of the persons or things mentioned") (emphasis added).

Second, the claims recite "each data package comprising N data elements …, N being an integer of at least two." '2893 patent, cl. 1, 10. As used in the ***body*** of the '2893 patent claims—rather than as a transition from the preamble—the word "comprising" is "interpreted according to the normal rules of claim interpretation" and "means 'having' … not 'having at least.'" *Moleculon Rsch. Corp. v. CBS, Inc.*, 793 F.2d 1261, 1272 n. 8 (Fed. Cir. 1986) (abrogated on other grounds); *see also Araujo v. E. Mishan & Sons, Inc.*, No. 19CIV5785JPCSN, 2022 WL 2342111, at *9 (S.D.N.Y. June 29, 2022) ("the Court construes 'comprises' in the context used in Claim 1 as meaning 'have' (but not 'have at least')."); *Barnes & Noble, Inc. v. LSI Corp.*, No. C-11-2709 EMC, 2014 WL 1365422, at *23 (N.D. Cal. Apr. 7, 2014) (rejecting "an open ended reading of comprising that would only require … 'at least K frequencies'"). As such, all of the data packages communicated in the network must have exactly "N data elements." Indeed, an interpretation that allows for data packages of different sizes, as NST contends, would read the phrase "N data

elements" out of the claims. *See Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1340 (Fed. Cir. 2016) (holding constructions that render words in a claim "entirely superfluous" are improper); *see also Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950–52 (Fed. Cir. 2006). If that were the applicants' intent, the claims would simply have said "each data package comprising at least two data elements." Madisetti Decl. ¶ 88. Further, the claims require "M*N data storage elements" and "introducing a delay of M*N cycles" ('2893 patent, cl. 1, 10), and an interpretation that allows the value of "N" to "vary between one data package and the next," as NST argues (Dkt. No. 100 at 21), would render these limitations nonsensical because there would be no way to know which value of "N" to use to determine the number of data storage elements and cycles. Madisetti Decl. ¶ 88.

The specification also supports Samsung's proposed construction. It states explicitly that "the data packages have a fixed size of N data elements." '2893 patent at 2:17–22. Thus, for example, the specification describes an embodiment in which "[t]he network … is arranged to communicate data packages with size N=3." *Id*. at 5:63–64; Madisetti Decl. ¶ 89. In fact, both Figures 2 and 4, the only figures to show data packages, show they all have the same size N. *Id*. at Figs. 2, 4. Nowhere does the specification state or even suggest that different packages can have different values of N within a single embodiment.

This is for good reason, as allowing such variation would eviscerate the purpose of the alleged invention and cause the very problem that the '2893 patent sought to solve. *See* Madisetti Decl. ¶ 94; *KEYnetik, Inc. v. Samsung Elecs. Co.*, 837 F. App'x 786, 792 (Fed. Cir. 2020) (rejecting construction that "would eviscerate the stated purpose of the claimed invention"). The fixed size of the data packages is a critical feature of the alleged invention, which involves introducing data storage elements into slow communication channels at design time to enable higher clock speeds.

'2893 patent at 1:34–61; Madisetti Decl. ¶ 89. The '2893 patent acknowledges that such techniques were known in the art, but purports to identify a problem when they are applied to networks in which routing information (*e.g.*, a header) is expected to be received "during a predefined clock cycle." *Id*. ¶ 92.[10] In particular, the '2893 patent asserts "it is ***essential*** that the headers of the data packages do not arrive … outside such an evaluation clock cycle" because this would "caus[e] erroneous behaviour of the network." '2893 patent at 1:57–61, 6:50–53 (emphasis added).

The '2893 patent purports to prevent such an occurrence by requiring the number of data storage elements inserted into a slow communication channel to be equal to "M*N," "with N corresponding to the size of a data package" and "M being a positive integer." *Id*. at 1:49–2:14, 2:26–33, 5:49–62; Madisetti Decl. ¶¶ 92–93. If the value of "N" could "vary between one data package and the next" as NST argues (Dkt. No. 100 at 21), it would not be possible to know how many data storage elements to add even though that is the entire point of the '2893 patent's alleged invention. Further, if data packages could have different numbers of data elements, many of those data packages would "arrive outside the predefined clock cycle," resulting in the very problem that the '2893 patent sought to solve.[11] Madisetti Decl. ¶ 94.

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[10] The clock cycle in which routing information is expected is a function of the size of the data packages. The '2893 patent explains that "[b]ecause the data packages have a fixed size of N data elements, the communication of a complete package between two network stations takes N clock cycles." '2893 patent at 2:17–22. Further, because "[t]he routing information … has a fixed position in the data package, e.g. the first data element (i.e. a header), … a network station expects routing information to arrive periodically (i.e. after every N cycles)." *Id*. at 2:22–33, 6:40–48; *see also id*. at 1:54–57; Madisetti Decl. ¶¶ 90–91. Thus, for example, in the embodiment where "[t]he network … is arranged to communicate data packages with size N=3," the network stations look for the header of a new data package at "t+3, t+6 and so on." *Id*.

[11] NST's expert argues that "any data package having n*N data elements, where n>1, that includes routing information in every (1+i*N)th data element, where i>0," would present routing information during the correct clock cycle (Dkt. No. 100-7 ¶¶ 171–72), but NST's proposed

NST's proposed construction of "data elements" is also incorrect and not supported by the intrinsic evidence. A data element does not refer to any "group of data." Madisetti Decl. ¶ 97. Indeed, such an interpretation would collapse any distinction between a "data package" and a "data element." *Id*. Rather, a POSITA would have understood from the context of the claims and the specification that a data element is the amount of data that is transmitted over a channel in a single clock cycle. *See id.*; '2893 patent 6:60–7:2, 7:67–8:18, Figs. 1–4.

G. "optimal amount of data to be buffered" ('800 Patent)

Defendants' Proposed Construction	Plaintiff's Proposed Construction
Indefinite	Plain and ordinary meaning

This term was construed in *NST II* and was held by the Court to be "purely subjective" and indefinite because it "'fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.'" Ex. A at 52–55 (quoting *Nautilus*, 572 U.S. at 901). The Court should reach the same conclusion here.

This term is a quintessential term of degree and a determination of whether an amount of data is "optimal" is purely subjective and subject to personal judgments and experiences. Madisetti Decl. ¶ 100. Indeed, the dictionary definition relied on by NST to support its plain and ordinary meaning construction—which defines "optimal" as "[m]ost favorable or desirable"—only confirms the subjectiveness of this term. *See* Dkt. No. 100 at 26. What is "most favorable or desirable" in terms of the amount of data to be buffered depends on design choices, circumstances,

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construction includes no such limitations on the size of the data packages or the placement of the routing information. Further, while NST's expert's accompanying figure—which does not appear anywhere in the '2893 patent—purports to show a "first data package" with three data elements and a "second data package" with six data elements, the presence of two headers in the "second data package" confirms that it is just two three-element data packages with a box drawn around them.

and preferences. *See Intellectual Ventures I LLC v. T-Mobile USA, Inc.*, 902 F.3d 1372, 1381 (Fed. Cir. 2018) ("[A] term of degree that is 'purely subjective' and depends 'on the unpredictable vagaries of any one person's opinion' is indefinite.").

Terms of degree like the one at issue here are only definite when the intrinsic evidence "provide[s] objective boundaries for those of skill in the art," and there are no such objective boundaries in the '800 patent. *See Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014); Madisetti Decl. ¶¶ 100–103. Neither the claim nor the specification provides any guidance as to how a POSITA can determine whether an amount of data to be buffered is "optimal." The claim merely recites "determine a [first/second] optimal amount of data to be buffered," without specifying what information should be considered in making such a determination or providing any metrics by which a POSITA could determine that an amount of data is, in fact, optimal. *See* '800 patent, cl. 12. The specification, which purports to describe an "optimal" amount as, *e.g.*, an amount "sufficiently large to be transferred optimally over an interconnect means in a packet" and "sufficient data for an optimal packet size," provides no more clarity. '800 patent at 4:50–56; *see also id*. at 7:16-19. These characterizations of "sufficiently" and "optimally" are completely circular, and merely "substitut[e] one unrelated subjective term for another." Ex. A at 53–54. Indeed, as Dr. Madisetti explains, the specification never describes "how a POSITA can or should determine what amount of data is 'sufficiently large'" or "what constitutes 'sufficient data.'" Madisetti Decl. ¶ 101. Disclosures regarding ***when*** an optimal amount may be determined are equally unhelpful in determining ***what*** constitutes an optimal amount. *Id*. ¶ 102 (citing '800 patent at 6:53–62).

In its brief, NST reprises arguments that were rejected by the Court in *NST II* and should be rejected here too.[12] For instance, NST argues that "a 'first optimal amount of data to be buffered' equates to the amount of data that is optimal under certain conditions." Dkt. No. 100 at 26. But as the Court explained in *NST II*, "[t]his circular argument illustrates the problem, because contending that 'optimal amount of data' is 'the amount of data that is optimal' provides absolutely no objective boundaries for those of skill in the art." Ex. A at 54. NST's argument that the intent of the claimed invention is to "improve[] and/or optimize[] interconnect utilization" provides no further clarity regarding what constitutes an "optimal" amount. *See* Dkt. No. 100 at 25–26. NST further argues that "the 'optimal amount of data' is … based on certain conditions such as [at least ten different] communication properties and/or interconnect (i.e., network) characteristics."[13] Dkt. No. 100 at 26; *see also NST II* Tr. at 41:25-42:8 (arguing that the patent identifies ten connection properties that are "not an exclusive list"). But as Dr. Madisetti explains, "the specification … does not describe how these properties inform a POSITA as to the optimal amount of data, nor does it explain how a POSITA should weigh these properties, some of which may have contradictory or conflicting impacts on the 'optimal' result." Madisetti Decl. ¶ 103; *see also* Dkt. No. 100-7 ¶ 179 (opining that optimization "depends on properties and characteristics of the system, and the solution varies as the properties and characteristics vary"). The Court in *NST II*

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[12] NST's reliance on *Bitmicro LLC v. Kioxia America, Inc., et al.*, No. 6:22-cv-00331, Dkt. 54 (W.D. Tex. Feb. 16, 2023) (Albright, J.)—which it also relied on in *NST II*—is misplaced. There, the claim addressed a device profile that was optimal for random or sequential data types, and the Court found that the "specification provides guidance on which device profile to use for the random or sequential data types." *Id*. at 44–45. There is no such guidance in the '800 patent.

[13] NST's simplistic hypothetical—which does not appear anywhere in the specification—of a chip determining an "optimal" amount of data based on "a latency constraint" incorrectly assumes that "the most data that can be transmitted" is necessarily the "optimal" amount of data, ignores the at least nine other communication properties listed in the patent, and fails to account for the complete absence of any direction as to how to optimize the amount of data to be buffered.

reached the same conclusion, finding that "the intrinsic evidence does not provide any indication what aspect or combination of these 'connection properties' may facilitate the determination of an 'optimal amount of data.'" Ex. A at 54.

NST wrongly criticizes the Court's decision in *NST II*, asserting that the Court "mistakenly assumed that the chip designer, using his or her subjective opinion, would determine the 'optimal amount.'" Dkt. No. 100 at 26–27. In doing so, NST ignores its own admission, made during the NST II *Markman* hearing, that highlights the purely subjective nature of this term:

> Your Honor, that is a design decision that would be made as part of designing the chip. The specification gives examples of parameters that would be put on what is the optimal amount of data. ***It would be up to the intent of the chip and the designer of the chip*** to decide which of those criteria are, first, applicable; and, second, which are most important; and, third, how they interact with each other, whether a latency guarantee would -- would take precedence or a priority guarantee. That's up to the design of the chip.

NST II Tr. at 53:9–23. While NST attempts to distance itself from that admission by arguing that the "determination unit"[14] determines the optimal amount "based on the physical layout and communication properties," NST yet again admits that "[t]he chip designer determines the physical layout of the network, the communication properties to be applied, and … the priority and interaction amongst such properties." Dkt. No. 100 at 26–27. Thus, the "determination unit" merely implements the subjective determinations of the chip designer as to "which of the criteria are more important, and how they interact with each other." Ex. A at 54–55. As Dr. Madisetti explains, "[d]ifferent approaches to weighing these 'connection properties' would lead to materially different results, i.e., different optimal values that are dependent upon an individual POSITA's subjective choices." Madisetti Decl. ¶ 103. That is the essence of a subjective term of degree, and the term should be found indefinite.

[14] The "determination unit" term is indefinite for the reasons explained below. *See infra* § III.I.

H. "optimal moment for sending the data" ('800 Patent)

Defendants' Proposed Construction	Plaintiff's Proposed Construction
Indefinite	Plain and ordinary meaning

In *NST II*, the Court held that "optimal moment for sending data" is "purely subjective" and indefinite, and the Court should do the same here. *See* Ex. A at 56. As with "optimal amount of data," this term is a quintessential term of degree and a determination as to when is the "optimal" moment to send data is purely subjective and subject to personal judgments and experiences. *See* Madisetti Decl. ¶¶ 106–108; *Intellectual Ventures I*, 902 F.3d at 1381. Further, the intrinsic evidence fails to "provide objective boundaries for those of skill in the art" to determine what constitutes such an "optimal moment." *See Interval Licensing*, 766 F.3d at 1371; Madisetti Decl. ¶¶ 108–111. Indeed, the Court in *NST II* found that, "[c]ompared to the term 'optimal amount,' … the specification provides even less information," as the phrase "optimal moment" does not even appear in the specification. Ex. A at 56.

NST argues that the specification's reference to a broader phrase not in the claims—transmission moment—"sufficiently disclose[s] the 'optimal moment.'" Dkt. No. 100 at 28. But the Court in *NST II* rejected this argument, finding that "determining a '***moment*** for sending data' [i.e., transmission moment] is not the same as determining 'an ***optimal moment*** for sending the data." Ex. A at 56 (emphasis in original); *see also* Madisetti Decl. ¶ 110. Indeed, as that Court recognized, NST's argument "would read the term 'optimal' completely out of the claim." *Id*; *see also Akzo Nobel Coatings*, 811 F.3d at 1340; *Bicon*, 441 F.3d at 950–52.

NST's argument fails for additional reasons. The claim expressly requires that the "optimal moment" be determined according to a list of ten "communication proprieties" ('800 patent at cl. 12), but as NST itself concedes, the portion of the specification that it relies on addresses only one of these properties: "throughput." Dkt. No. 100 at 28; *see also NST II* Tr. at 56:8–14 (arguing that

claim 12 makes clear the optimal moment for sending data is "according to the communication properties, the 10 things that we've been talking about"). Thus, there is nothing in the intrinsic evidence that indicates to a POSITA how the remaining communication properties relate to the "transmission moment," let alone to the "optimal moment." Indeed, as Dr. Madisetti explains, the intrinsic evidence fails to "describe how these properties inform a POSITA as to the optimal moment for sending the data, nor does it explain how a POSITA should weigh these properties, some of which may have contradictory or conflicting impacts on the 'optimal' result." Madisetti Decl. ¶ 109. NST's argument that the *NST II* Court's decision regarding this term "rests on a misapprehension" fails for the same reasons explained with respect to "optimal amount." *See supra* § III.G.

I. "determination unit" ('800 Patent)

Defendants' Proposed Construction	Plaintiff's Proposed Construction
Subject to Section 112, ¶ 6 **Function**: "determine a first/second optimal amount of data to be buffered by the first/second memory" and for at least one of the first determination unit and the second determination unit "determine an optimal moment for sending data" **Structure**: Indefinite	**<u>Not subject to § 112, ¶ 6:</u>** "circuit that makes determinations based on stored or received information" **<u>If the Court holds § 112, ¶ 6 applies:</u>** **Function**: "determine an optimal amount of data to be buffered" and "determine an optimal moment for sending the data" **Structure**: "circuit"

Though it does not use the word "means," this purely functional term is subject to § 112, ¶ 6 because it "fails to 'recite sufficiently definite structure'" and "recites 'function without reciting sufficient structure for performing that function.'" *Williamson*, 792 F.3d at 1348 (citation omitted). Indeed, the Federal Circuit has recognized that "the term 'unit,' in a vacuum, is defined only by the function it performs, much like terms such as 'element' or 'means.'" *See WSOU Invs. LLC v. Google LLC*, No. 2022-1066, 2023 WL 6210607, at *4 (Fed. Cir. Sept. 25, 2023) (finding

"alerting unit" subject to § 112, ¶ 6); *see also Diebold*, 899 F.3d at 1298 (finding "cheque standby unit" subject to § 112, ¶ 6). Further, Dr. Madisetti opines that this term does not connote "a particular structure or class of structures" to a POSITA (Madisetti Decl. ¶ 113), and neither NST nor its expert offer any argument or evidence that "determination unit" "has a plain and ordinary meaning to those skilled in the art" or that it "is used in common parlance or by persons of skill in the pertinent art to designate structure.'" *See Kyocera*, 22 F.4th at 1380; *MTD Prod.*, 933 F.3d at 1341. Nor does any of the surrounding claim language impart any particular structure. Madisetti Decl. ¶¶ 112–114. Additionally, NST's own expert concedes that "[t]he specification of the '800 Patent uses the term 'determination unit' and 'determination means' interchangeably." Dkt. No. 100-7 ¶ 197; *WSOU*, 2023 WL 6210607, at *4.

NST argues—as it does for "dropping means"—that this term is not subject to § 112, ¶ 6 because a POSITA would recognize that it is "a circuit within the integrated circuit.'" Dkt. No. 100 at 23–25. But NST's argument fails here for the same reasons explained above. *See supra* § III.A. NST's argument that "determination unit" is structural because it is part of a network interface or "wrapper means" fails for the same reason. *See id.*; *see also WSOU*, 2023 WL 6210607, at *6. And NST's argument that "the 'determination unit' itself may be the network interface" (Dkt. No. 100 at 24) is belied by the language of the claim, which recites "the [first/second] interconnect module further ***including*** a [first/second] determination unit." '800 patent, cl. 12. Regardless, neither NST nor its expert argues or presents any evidence that a "network interface" encompasses sufficient structure to perform the claimed functions. *See Egenera*, 972 F.3d at 1374. NST's argument that this term is structural because it must contain "storage circuitry" fares no better as such circuitry is not "adequate corresponding structure" to perform ***any*** of the claimed functions, let alone "***all*** of the claimed functions" as required by the

law. *See* Dkt. No. 100 at 23; *Williamson*, 792 F.3d at 1351–52. Nothing in the claim requires that the "determination unit" store anything. Accordingly, "determination unit" is subject to § 112, ¶ 6.

There is no substantive dispute regarding the functions performed by the "determination unit." Dkt. No. 100 at 24. Both parties agree that the determination unit determines "an optimal amount of data to be buffered" and "an optimal moment for sending data." Samsung's proposed construction merely recognizes that the claim requires a first and second determination unit that respectively determine "a first optimal amount" and "a second optimal amount." '800 patent, cl. 12; *see also* Madisetti Decl. ¶ 112.

However, the specification fails to disclose any corresponding structure for performing these functions, rendering the term and the claim indefinite. *See* Madisetti Decl. ¶¶ 115–16; *Aristocrat Techs.*, 521 F.3d at 1331; *Biomedino*, 490 F.3d at 950. The specification merely references "first and second determination units BLDU1, BLDU2" and "first and second determination means BLDU1, BLDU2," which employ the same functional language as the claim and are depicted as a black box. *See* '800 patent at 6:47-7:13, Fig. 2. "Simply disclosing a black box that performs the recited function is not [] sufficient . . . to render the means-plus-function term definite." *Augme Techs.*, 755 F.3d at 1338; *see also Blackboard*, 574 F.3d at 1383. Further as discussed in the sections above, the specification provides no disclosure regarding how the claimed "determination unit" performs the claimed functions of determining an "optimal amount of data" and an "optimal moment for sending the data." *See supra* §§ III.G, III.H.

NST's identification of "circuit" as the corresponding structure fails here for the same reasons explained above with respect to the "dropping means" term. *See supra* § III.A; *see also* Madisetti Decl. ¶ 118.

IV. CONCLUSION

For the foregoing reasons, Samsung respectfully requests that the Court adopt its proposed constructions of the disputed claim terms.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was served on all counsel of record who have consented to electronic service via the Court's CM/ECF system per Local Rule CV-5(a)(3) on March 12, 2024. Any other counsel of record will be served by facsimile transmission or by first class mail.

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