

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NOKIA OF AMERICA CORPORATION *et al.*,

Petitioners

v.

IARNACH TECHNOLOGIES LIMITED,

Patent Owner

Case: IPR2024-00900

U.S. Patent No. 8,934,359

PETITIONER'S REPLY TO PATENT OWNERS'

PRELIMINARY RESPONSE

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
US Patent and Trademark Office
PO Box 1450
Alexandria, Virginia 22313-1450

TABLE OF CONTENTS

TABLE OF AUTHORITIES	ii
LIST OF EXHIBITS.....	iii
I. INTRODUCTION	1
II. ARGUMENT.....	1
III. CONCLUSION	7

TABLE OF AUTHORITIES

	Page(s)
CASES	
<i>Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc.</i> , 340 F.3d 1298 (Fed. Cir. 2003)	7
<i>Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.</i> , 381 F.3d 1111 (Fed. Cir. 2004)	3
<i>Salazar v. Procter & Gamble Co.</i> , 414 F.3d 1342 (Fed. Cir. 2005)	3, 4

LIST OF EXHIBITS

Exhibit	Short Name	Description
Ex. 1001	'359 Patent	U.S. Patent No. 8,934,359
Ex. 1002	'359 FH	File History of U.S. Patent No. 8,934,359
Ex. 1003	Sergienko Dec.	Declaration of Dr. Alexander V. Sergienko
Ex. 1004	Sergienko CV	<i>Curriculum Vitae</i> of Dr. Alexander V. Sergienko
Ex. 1005	G.984.3	ITU-T Recommendation G.984.3, Gigabit-capable Passive Optical Networks (G-PON): Transmission convergence layer specification (Mar. 2008)
Ex. 1006	Lee	U.S. Patent App. Pub. No. 2005/0149822
Ex. 1007	Liu	U.S. Patent No. 6,005,694
Ex. 1008	Ramaswami	Rajiv Ramaswami & Kumar Sivarajan, <i>Optical Networks, A Practical Perspective</i> (2d ed. 2002)
Ex. 1009	Kramer	Glen Kramer & Gerry Pesavento, <i>Ethernet Passive Optical Network (EPON): Building a Next-Generation Optical Access Network</i> , IEEE Communications Magazine (February 2002)
Ex. 1010	Inf. Cont. Cover Pleading	Iarnach's Disclosure of Asserted Claims and Preliminary Infringement Contentions in <i>Iarnach Technologies Ltd. v. AT&T Inc., et al.</i> , 2:23-cv-231-JRG (E.D. Tex.)
Ex. 1011	'359 Patent Inf. Cont.	Iarnach's Infringement Contentions for the '359 Patent in <i>Iarnach Technologies Ltd. v. AT&T Inc., et al.</i> , 2:23-cv-231-JRG (E.D. Tex.)

Exhibit	Short Name	Description
Ex. 1012	Wijngaarden '381	U.S Patent App. Pub. No. 2010/0316381
Ex. 1013	Krimmel	U.S Patent App. Pub. No. 2006/0222362
Ex. 1014	Khermosh	U.S Patent App. Pub. No. 2008/0260378
Ex. 1015	Kanno	U.S Patent App. Pub. No. 2010/0021158
Ex. 1016	Wijngaarden '380	U.S Patent App. Pub. No. 2010/0316380
Ex. 1017	Hood	U.S. Patent No. 8,548,328
Ex. 1018	Effenberger II	Frank J. Effenberger, <i>et al.</i> , “Next-Generation PON—Part II: Candidate Systems for Next-Generation PON,” IEEE Comms. Mag., Vol. 47, Issue 11 (Nov. 3, 3009)
Ex. 1019	Effenberger III	Frank J. Effenberger, <i>et al.</i> , “Next-Generation PON—Part III: Candidate Systems for Next-Generation PON,” IEEE Comms. Mag., Vol. 47, Issue 11 (Nov. 3, 3009)
Ex. 1020	Chung	Hae Isni Chung & Young-Jin Kwon, Implementation of a High Speed GEM Frame Synchronization Circuit in the G-PON TC Sublayer Payload,” J. Korean Inst. of Comms. & Info. Sci., Vol. 34, Issue 5B (May 31, 2009)
Ex. 1021	Mohammadani	Khalid Mohammandani, <i>et al.</i> , “Highest Cost First-Based QoS Mapping Scheme for Fiber Wireless Architecture,” Photonics, Volume 7, Issue 4 (Nov. 22, 2020)

Exhibit	Short Name	Description
Ex. 1022	AT&T Case— DCO	Doc. No. 50, Docket Control Order, <i>Iarnach Technologies Ltd. v. AT&T Corp. et al.</i> , No. 2:23-cv-00231 (E.D. Tex.)
Ex. 1023	AT&T Case— Intervenor	Doc. No. 31, Order Granting Nokia’s Motion to Intervene, <i>Iarnach Technologies Ltd. v. AT&T Corp. et al.</i> , No. 2:23-cv-00231 (E.D. Tex.)
Ex. 1024	Caseload	U.S. District Courts – Judicial Caseload Profile (Dec. 2023)
Ex. 1025	Verizon Case— DCO	Doc. No. 45, Agreed Docket Control Order, <i>Iarnach Technologies Ltd. v. Verizon Communications, Inc. et al.</i> , No. 2:23-cv-00631 (E.D. Tex)
Ex. 1026	EPON v. GPON	<i>What is the Difference Between EPON and GPON?</i> , HITRON, https://us.hitrontech.com/learn/what-is-the-difference-between-epon-and-gpon/ (last accessed Apr. 21, 2024)
Ex. 1027	G.984.2	ITU-T Recommendation G.984.2, Gigabit-capable Passive Optical Networks (GPON): Physical Media Dependent (PMD) layer specification (March 2003)
Ex. 1028	Hall-Ellis Dec.	Declaration of Dr. Sylvia D. Hall-Ellis
Ex. 1029	Hall-Ellis CV	<i>Curriculum Vitae</i> of Dr. Sylvia D. Hall-Ellis
Ex. 1030	Attachment 1A	Hall-Ellis Declaration Attachment 1A
Ex. 1031	Attachment 1B	Hall-Ellis Declaration Attachment 1B
Ex. 1032	Attachment 1C	Hall-Ellis Declaration Attachment 1C
Ex. 1033	Attachment 1D	Hall-Ellis Declaration Attachment 1D

Exhibit	Short Name	Description
Ex. 1034	G.9807.1	ITU-T Recommendation G.9807.1, 10-Gigabit-capable symmetric passive optical network (XGS-PON) (June 2016)
Ex. 1035	AT&T Complaint	Doc. No. 1, Complaint, <i>Iarnach Technologies Ltd. v. AT&T Corp. et al.</i> , No. 2:23-cv-00231 (E.D. Tex.)
Ex. 1036	Verizon Complaint	Doc. No. 1, Complaint, <i>Iarnach Technologies Ltd. v. Verizon Communications, Inc. et al.</i> , No. 2:23-cv-00631 (E.D. Tex)

I. INTRODUCTION

Pursuant to the Board’s authorization email dated October 2, 2024, Petitioners Nokia and AT&T submit this Reply to Patent Owner’s (“PO’s”) Preliminary Response (Paper 10, “POPR”). In its POPR, PO asserts alleged material distinctions between “parameters” and “parameter sets.” POPR, 1-7, 11-15. But Patent Owner’s arguments are inconsistent with ’359 patent’s specification and claims.

II. ARGUMENT

The POPR’s assertion that Petitioners improperly “use[d] the terms ‘parameter’ and ‘parameter set’ interchangeably,” is based in PO’s errant position that the claim language “parameter set[s]” must be accompanied by an integer that serves as an index or identifier. This position is contrary to both the claim language and the specification. Rather, parameter sets can be simply a combination of parameters contained within the upstream overhead messages. *E.g., id.*, 4:8-10. As the ’359 Patent describes a “set” may simply be multiple parameters, “[e]ach upstream burst overhead parameter set includes the following parameters: state of forward error correction, delimiter, preamble and guard band.” *Id.*, 7:44-46.

For reference, the relevant portions of Challenged Claim 1 are reproduced below:

1. A method for managing upstream burst overhead parameters,
comprising:

...

the optical line terminal determining and identifying N kinds of upstream burst overhead parameter sets according to different levels of link quality, wherein N is an integer and is larger than zero; and

the optical line terminal sending a parameter value or an identification of one default upstream burst overhead parameter set to the optical network unit; and the optical network unit receiving the parameter value or the identification of the upstream burst overhead parameter set in a waiting state and using the upstream burst overhead parameter set; or,

the optical line terminal sending parameter values or identifications of more than one upstream burst overhead parameter set to the optical network unit; and the optical network unit receiving the parameter values or the identifications of the upstream burst overhead parameter sets in a waiting state and using one of the received upstream burst overhead parameter sets.

Where “parameter sets” appears alone is in connection with determining and identifying “N kinds of upstream burst overhead parameter sets” according to different levels of link quality. Ex. 1001, Claim 1. That language appears as highlighted in yellow in Claim 1, which is the only independent claim at issue.

The Petition identified precisely where the “parameter sets” are found in the G.984.3 and Khermosh references, and how the G.984.3 Upstream_Overhead message) identified sets of specific burst overhead parameters, including (1) relating to guard bits, as well as preamble and delimited length and pattern, Ex. 1005, 109-110, and (2) state of FEC (on or off), Ex. 1005, 93. Similarly, in Khermosh, the upstream burst overhead parameter sets include FEC on (set 1) and FEC off (set 2). The OLT determines and identifies which set to use. See Ex. 1014, Figs. 2 & 5, [0012], [0021], [0024], [0027].

First, significant to this dispute, “N” is an integer and need only be greater than zero; thus, the OLT may determine and identify just one burst overhead parameter set. It need not identify two or more. Thus, PO’s suggestion that more than one set is required to be indicated is not reflected by the claims themselves. POPR, 11 (“During prosecution, the examiner identified ‘setting up multiple **sets** of parameters’”) (emphasis from PO). *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1124 (Fed. Cir. 2004) (“[I]t is the applicant, not the examiner, who must give up or disclaim subject matter that would otherwise fall within the scope of the claims.”); *Salazar v. Procter & Gamble Co.*, 414 F.3d 1342, 1347 (Fed. Cir. 2005) (holding a finding disavowal of claim scope is improper where the Patentee does not adopt a examiner’s notice of

allowance). To the extent that only one set exists (i.e., the integer N is one), the combination of G.984.3 and Kermosh shows why this limitation is obvious.

Second, in an attempt to confuse the clear requirement of the claims and disclosure of the prior art, the PO conflates the requirement of “parameter sets” with *an indication* of a given parameter set, which follows in the subsequent claim limitations, **highlighted above in pink**. PO makes its position known repeatedly:

- “Each of these parameters set *identifiers* can then be associated with an entire ‘set’ of parameters.” POPR at 3 (emphasis added).
- “[T]he ’359 Patent teaches the use of parameter sets associated with multiple parameters, such that *indication* of a parameter set . . . can be used to identify the parameters and parameter values appropriate to that parameter set . . .” POPR at 11 (emphasis added).
- “[I]t is apparent from Petitioners’ highlighting of that reference that they are relying on the disclosure of determining individual parameter values—not a value *indicating* a set of parameters.” POPR at 12 (emphasis added).

But as PO admits, *an indication* of a parameter set “can be used”—***not*** “must be used” —to identify the parameters and parameter values appropriate to that parameter set” *Id.*; *see also id.*, 3 (OLT “can” determine; each parameter set identified “can” be associated with an entire set of parameters). That permissive

language is telling, showing PO is simultaneously seeking to avoid disavowal that would render its patent worthless from an infringement perspective, while at the same time hoping the Board rules in its favor on that point with respect to validity.

In particular, the **subsequent claim limitation** is not limited just to parameter sets, as opposed to parameter values. For example, the OLT may send “a parameter **value** or an identification of one default upstream burst overhead parameter set” to the optical network unit (or “ONU”). Ex. 1001, 22:1-3; *see also id.* at 22:8-10 (OLT sending parameter **values or** identification of more than one parameter set). Thus, it is of no moment that an identification of a “parameter set” is found in every Challenged Claim; what instead matters is where those limitations present an option between sending a parameter value **or** an indication/identification of a parameter set. *Id.*, Claim 1.

The same is true throughout the dependent Challenged Claims. *See, e.g.*, Ex. 1001, 22:17-19 & 22:35-39 (Claim 2: ONU “receiving the parameter value(s)” or identification(s) of the parameter set(s), OLT “notifying the parameter value(s)” or the identification(s) of the parameter set(s)), 22:63-67 (Claim 3: notifying parameter values or sets), 23:20-23 (Claim 4: notifying parameter values or sets).

The specification similarly uses “or” language to refer to parameter values “or” parameter sets. When describing the “present invention,” for example, the ’359 Patent states that the “OLT sends **a parameter value or** an identification

of one default upstream burst overhead parameter set to the ONU, and the ONU receives **the parameter value or** the identification of the upstream burst overhead parameter set.” Ex. 1001, 7:47-52; *see also id.*, 7:52-57 (“the OLT sends **parameter values or** identifications of more than one upstream burst overhead parameter set to the ONUS, and after the ONU receives the **parameter values or** the identification of more than one upstream burst overhead parameter set to the ONU.”); *id.*, 9:31-32. (“The Upstream-overhead message may carry the parameters or the identification of that set 1.”); *id.*, 10:35-36 (“OLT sends the parameter set to be used by the ONU and the corresponding index value.”); *see also id.*, Table 2 (listing the “number of guard bands,” the “number of preamble bits,” the “Delimiter”).

Figure 2, for example, shows how burst overhead parameters are determined by the OLT or ONU, and how the ONU starts to use those parameters after a switching time. Ex. 1001, Fig. 2, 6:64-67; *see also id.*, 8:14-17 (OLT “notifies the parameter value in the upstream burst overhead parameter set or the identification of the upstream burst overhead parameter set to the ONU”).

Iarnach’s asks this Board to adopt a restrictive construction of the claims that also reads out embodiments. In Step 1002 of the first embodiment, for example, the OLT broadcasts an Upstream_overhead message, which may carry the parameters **or** the identification of that set 1. *Id.*, 9:27-32. Octets 4-8 of that

message, for example, each concern specific parameters. *Id.*, Table 2. “[A] claim construction that excludes a preferred embodiment . . . is rarely, if ever correct and would require highly persuasive evidentiary support.” *See Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc.*, 340 F.3d 1298, 1308 (Fed. Cir. 2003). PO, however, identifies no such support, and thus Petitioners submit that they have satisfied the standard required for institution.

Further, as previously explained, PO’s position appears to be that “parameter set” should be read narrowly to mean the “index value” of the parameter set. *See, e.g.*, Ex. 1001, 10:34-37, Table 2 (“ss is the index value of the parameter set included in the message”). To the extent the Board understands the claims to include only identification of an index value, even when the integer N is equal to one, it should make that finding express so that PO is unable to later contend that construction does not apply to its claims.

III. CONCLUSION

Petitioners respectfully request that the Board grant institution.

Date: October 9, 2024

By: / Christopher TL Douglas /
Reg. No. 56,950

CERTIFICATE OF SERVICE

The undersigned certifies that Petitioner served a copy of the foregoing PETITIONER’S REPLY TO PATENT OWNERS’ PRELIMINARY RESPONSE by filing this document through the PTAB’s E2E Filing System as well as sending a copy via electronic service (as agreed by counsel for Patent Owners) on the following:

Lead Counsel	Back-Up Counsel
Michael F. Heim (Reg. No. 32,702) HEIM PAYNE & CHORUSH, LLP 609 Main Street, Suite 3200 Houston, TX 77002 Tel: (713) 221–2000 Fax: (713) 221–2021 mheim@hpcllp.com	Blaine A. Larson (Reg. No. 69,132) blarson@hpcllp.com R. Allan Bullwinkel (Reg. No. 77,630) abullwinkel@hpcllp.com Christopher L. Limbacher (Reg. No. 76,551) climbacher@hpcllp.com HEIM PAYNE & CHORUSH, LLP 609 Main Street, Suite 3200 Houston, TX 77002 Tel: (713) 221–2000 Fax: (713) 221–2021 Michael McBride (pro hac vice to be filed) ALAVI & ANAIPAKOS PLLC 609 Main Street, Suite 3200 Houston, Texas 77002 Tel: (713) 751–2362 Fax: (713) 751–2341 mmcbride@aatriallaw.com IPR2024-00900@aatriallaw.com

Date: October 9, 2024

By: / Christopher TL Douglas /

Christopher TL Douglas

Reg. No. 56,950

ALSTON & BIRD LLP

Vantage South End

1120 S. Tryon Street, Suite 300

Charlotte, NC 28203

Phone: 704.444.1119

Fax: 704.444.1799

Email: christopher.douglas@alston.com