

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner

v.

JENAM TECH, LLC,
Patent Owner

Patent No. 10,951,742

**PETITION FOR POST GRANT REVIEW
OF U.S. PATENT NO. 10,951,742**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	MANDATORY NOTICES UNDER 37 C.F.R. § 42.8.....	1
A.	Real Parties-in-Interest.....	1
B.	Related Matters.....	1
1.	Related Lawsuit.....	1
2.	Related Applications	2
3.	Related IPRs.....	4
C.	Counsel and Service Information.....	5
III.	PAYMENT OF FEES UNDER 37 C.F.R. § 42.15(a)	5
IV.	TIME FOR FILING UNDER 37 C.F.R. § 42.202	5
V.	GROUND FOR STANDING UNDER 37 C.F.R. § 42.204(a).....	5
VI.	PRECISE RELIEF REQUESTED AND GROUNDS RAISED.....	6
A.	Claim for Which Review Is Requested.....	6
B.	Statutory Grounds of Challenge.....	6
VII.	LEVEL OF ORDINARY SKILL IN THE ART.....	7
VIII.	OVERVIEW OF THE '742 PATENT	7
IX.	THE '742 PATENT IS ELIGIBLE FOR PGR.....	13
A.	The Pre-AIA Applications Do Not Support the “Non-TCP” Features Recited in Claim 1	16
1.	The Pre-AIA '454 Application Does Not Support the “Non-TCP” Features	19
2.	The Pre-AIA '402 Application Does Not Support the “Non-TCP” Features	29

3.	Materials Incorporated by Reference in the Two Pre-AIA Applications Do Not Support the “Non-TCP” Features.....	30
4.	The Pre-AIA Applications and Materials Incorporated by Reference Collectively Do Not Support the “Non-TCP” Features	32
B.	AIA Applicability.....	34
X.	CLAIM CONSTRUCTION	34
XI.	DETAILED EXPLANATION OF GROUNDS.....	36
A.	Ground 1: The Challenged Claims Lack Written Description Support	36
1.	The ’742 Patent and Its Priority Applications Do Not Provide Written Description Support For The “Non-TCP” Features (Claims 1, 65, 73, and 74).....	37
2.	The ’742 Patent and Its Priority Applications Do Not Provide Written Description Support For a “First Connection [That] Does Not Utilize Transmission Control Protocol (TCP)” (Claims 75-77).....	55
3.	The ’742 Patent and Its Priority Applications Do Not Provide Written Description Support For Detecting a Time Period <i>During At Least A Portion of the [non-TCP]/[TCP-variant] Connection Setup</i> (All Challenged Claims	57
4.	The ’742 Patent and Its Priority Applications Do Not Provide Written Description Support For The “TCP-Variant” Features (Claims 78, 83, 86, 159, 167, 168, and 171)	68
B.	Ground 2: Claims 78, 83, 86, 159, 167, 168, and 171 Are Indefinite	72
1.	The Claim Language, Specification, and File History Do Not Sufficiently Describe the “TCP-Variant” Features of Claim 78	74

2.	The Intrinsic Record Does Not Inform a POSITA About the Scope of the Claimed “TCP-Variant” Features of Claim 78 With Reasonable Certainty	77
3.	Dependent Claims 83, 86, 159, 167, 168, and 171 Are Not Supported	91
XII.	THE RELATED LITIGATION PROVIDES NO BASIS FOR DISCRETIONARY DENIAL	92
XIII.	CONCLUSION.....	97

LIST OF EXHIBITS

EX1001	U.S. Patent No. 10,951,742
EX1002	Declaration of Bill Lin, Ph.D.
EX1003	Curriculum Vitae of Bill Lin, Ph.D.
EX1004	File History of U.S. Patent Application No. 17/079,397 (U.S. Patent No. 10,951,742)
EX1005	RESERVED
EX1006	L. Eggert, TCP Abort Timeout Option, draft-eggert-tcp-abort-timeout-option-00, Network Working Group, Internet-Draft (April 14, 2004) (“ <i>Eggert</i> ”)
EX1007	U.S. Patent No. 6,981,048 to Abdolbaghian
EX1008	DARPA RFC 793 TRANSMISSION CONTROL PROTOCOL
EX1009	IETF RFC 1122 “Requirements for Internet Hosts -- Communication Layers”
EX1010	U.S. Patent No. 9,923,995
EX1011	IETF RFC 1001 “Protocol Standard for a NetBIOS Service On A TCP/UDP Transport: Concepts and Methods”
EX1012	U.S. Patent No. 6,212,175 to Harsch
EX1013	U.S. Patent No. 6,665,727 to Hayden
EX1014	U.S. Patent No. 7,636,805 to Rosenberg
EX1015	IETF RFC 5440 “Path Computation Element (PCE) Communication Protocol (PCEP)”
EX1016	The Xpress Transfer Protocol (XTP): A tutorial (short version), Sanders <i>et al.</i> (January, 1990)

EX1017	<i>Jenam Tech, LLC's Infringement Contentions</i> regarding U.S. Patent No. 10,951,742 (July 2, 2021)
EX1018	RESERVED
EX1019	RESERVED
EX1020	U.S. Pre-Grant Publication No. 2004/0093376 to De Boor <i>et al.</i>
EX1021	U.S. Patent 7,535,913 to Minami <i>et al.</i>
EX1022	U.S. Pre-Grant Publication No. 2005/0204013 to Raghunath <i>et al.</i>
EX1023	U.S. Pre-Grant Publication No. 2007/0005804 to Rideout
EX1024	U.S. Pre-Grant Publication No. 2004/0098748 to Bo <i>et al.</i>
EX1025	IETF RFC 2616 "Hypertext Transfer Protocol -- HTTP/1.1"
EX1026	U.S. Patent No. 8,259,716 to Diab
EX1027	Bova et al., RELIABLE UDP PROTOCOL <draft-ietf-sigtran-reliable-udp-00.txt> 25 February 1999
EX1028	U.S. Patent 6,674,713 to Berg et al.
EX1029	Deposition Transcript of Patent Owner's Declarant, Dr. Michael Smith, in IPR2020-00845 (April 30, 2021)
EX1030	<i>Jenam Tech, LLC v. Google LLC</i> , Case No. 6:21-cv-00271, Text Order Granting Motion to Stay (Oct 21, 2021)
EX1031	Jenam Tech's Narrowed List of Asserted Claims in <i>Jenam Tech, LLC v. Google LLC</i> , Case No. 6:21-cv-00271 (July 27, 2021)
EX1032	RESERVED
EX1033	RESERVED
EX1034	RESERVED
EX1035	RESERVED
EX1036	U.S. Patent No. 10,075,564

EX1037	U.S. Patent No. 10,742,774
EX1038	File History of U.S. Patent Application No. 12/714,454 (U.S. Patent No. 8,219,606)
EX1039	File History of U.S. Patent Application No. 13/477,402
EX1040	Computer-generated Redline Between U.S. Patent Application No. 12/714,454 and U.S. Patent Application No. 13/477,402
EX1041	File History of U.S. Patent Application No. 12/714,063
EX1042	Computer-generated Redline Between U.S. Patent Application No. 12/714,454 and U.S. Patent Application No. 12/714,063
EX1043	File History of U.S. Patent Application No. 14/667,642
EX1044	File History of U.S. Patent Application No. 15/694,802 (U.S. Patent No. 9,923,995)
EX1045	File History of U.S. Patent Application No. 15/915,047 (U.S. Patent No. 10,075,564)
EX1046	File History of U.S. Patent Application No. 16/040,522 (U.S. Patent No. 10,375,215)
EX1047	File History of U.S. Patent Application No. 16/368,811 (U.S. Patent No. 10,742,774)
EX1048	File History of U.S. Patent Application No. 16/914,267
EX1049	Computer-generated Redline Between U.S. Patent Application No. 13/477,402 and U.S. Patent Application No. 14/667,642
EX1050	Computer-generated Redline Between U.S. Patent Application No. 12/714,454 and U.S. Patent Application No. 15/694,802 (U.S. Patent No. 9,923,995)
EX1051	Computer-generated Redline Between U.S. Patent Application No. 15/694,802 (U.S. Patent No. 9,923,995) and U.S. Patent Application No. 15/915,047 (U.S. Patent No. 10,075,564)
EX1052	Computer-generated Redline Between U.S. Patent Application No. 15/694,802 (U.S. Patent No. 9,923,995) and U.S. Patent Application No. 16/040,522 (U.S. Patent No. 10,375,215)
EX1053	Computer-generated Redline Between U.S. Patent Application No. 15/694,802 (U.S. Patent No. 9,923,995) and U.S. Patent Application No. 16/368,811 (U.S. Patent No. 10,742,774)

EX1054	Computer-generated Redline Between U.S. Patent Application No. 15/694,802 (U.S. Patent No. 9,923,995) and U.S. Patent Application No. 16/914,267
EX1055	Computer-generated Redline Between U.S. Patent Application No. 15/694,802 (U.S. Patent No. 9,923,995) and U.S. Patent Application No. 17/079,397 (U.S. Patent No. 10,951,742)
EX1056	IETF RFC 3168 “The Addition of Explicit Congestion Notification (ECN) to IP”
EX1057	IETF RFC 6093 “On the Implementation of the TCP Urgent Mechanism”
EX1058	IETF RFC 6528 “Defending against Sequence Number Attacks”
EX1059	Excerpt of IETF webpage hosting RFC 793, retrieved May 2, 2021
EX1060	RFC 768 USER DATAGRAM PROTOCOL
EX1061	DARPA RFC 792 INTERNET CONTROL MESSAGE PROTOCOL
EX1062	File History of U.S. Provisional Patent Application No. 62/137,173
EX1063	File History of U.S. Patent Application No. 14/294,059
EX1064	File History of U.S. Patent Application No. 12/857,851
EX1065	File History of U.S. Patent Application No. 13/941,502
EX1066	File History of U.S. Patent Application No. 12/789,550
EX1067	File History of U.S. Patent Application No. 12/857,847
EX1068	File History of U.S. Patent Application No. 12/857,857
EX1069	File History of U.S. Patent Application No. 12/857,836
EX1070	File History of U.S. Patent Application No. 12/788,364 (U.S. Patent No. 8,346,853)
EX1071	File History of U.S. Patent Application No. 12/788,373
EX1072	File History of U.S. Patent Application No. 12/789,538
EX1073	File History of U.S. Patent Application No. 12/788,381

EX1074	File History of U.S. Patent Application No. 12/789,568
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I. INTRODUCTION

Google LLC (“Petitioner”) requests post grant review (“PGR”) of claims 1, 65, 73, 74, 75, 76, 77, 78, 83, 86, 159, 167, 168, and 171 (“the challenged claims”) of U.S. Patent No. 10,951,742 (“the ’742 patent”) (EX1001) assigned to Jenam Tech, LLC (“Patent Owner” or “PO”). For the reasons below, the challenged claims should be found unpatentable and canceled.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8

A. Real Parties-in-Interest

Pursuant to 37 C.F.R. § 42.8(b)(1), Petitioner identifies the following as the real parties-in-interest: Google LLC.¹

B. Related Matters

1. Related Lawsuit

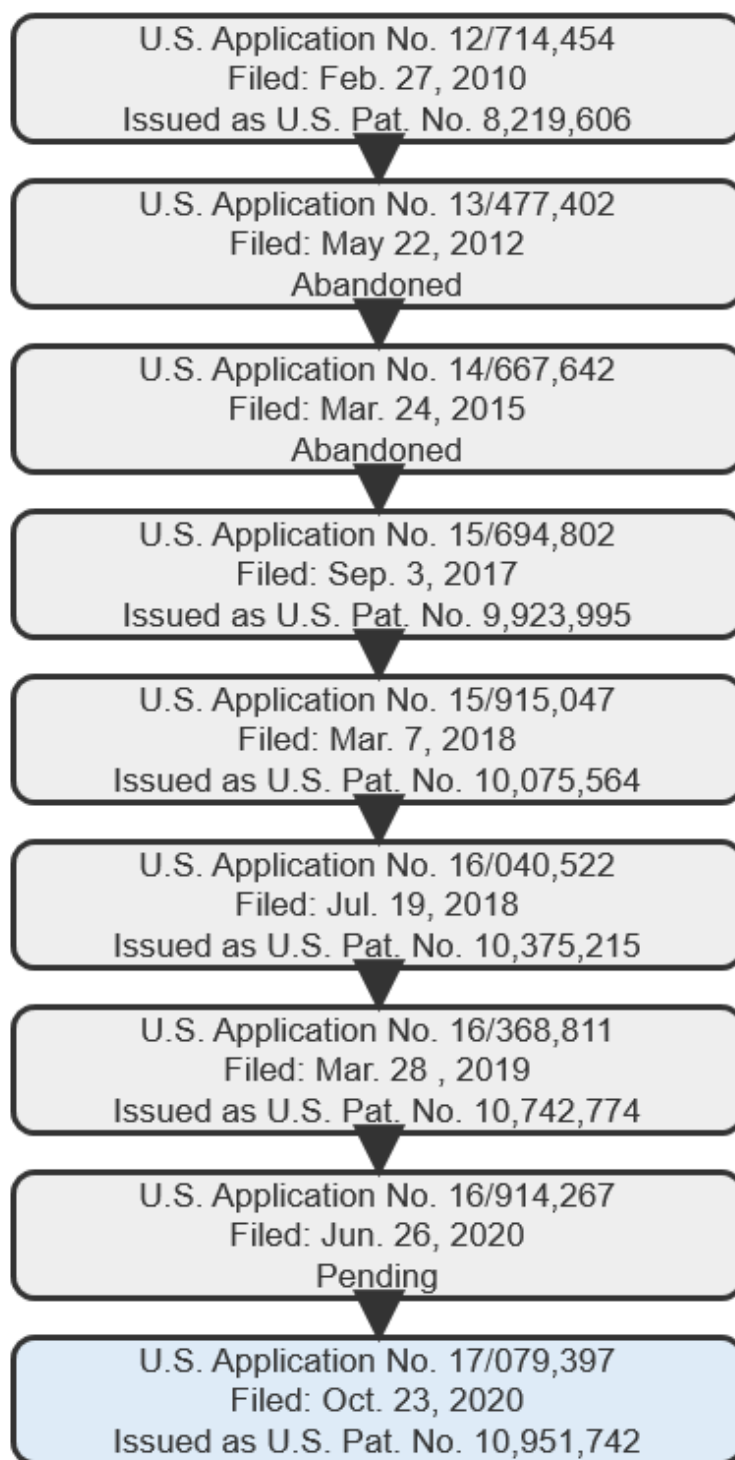
The ’742 patent is asserted in the following civil action, which was recently transferred from the Western District of Texas to the Northern District of California: *Jenam Tech, LLC v. Google, LLC*, Case No. 3:21-cv-09318-LB (N.D. Cal.). As discussed below in Section XII, this recently transferred case is expected to be

¹ Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.

consolidated with Case No. 3:21-cv-07994-JST (N.D. Cal.), which involves related patents. No case schedule has been issued in either case.

2. Related Applications

The '742 patent relates to several patents and/or patent applications, as shown in the purported priority chain below:



**Subject to this
PGR Petition**



3. Related IPRs

Related U.S. Patent No. 9,923,995 (“the ’995 patent”) was the subject of the following IPRs:

- *Google LLC et al. v. Jenam Tech, LLC*, IPR2020-00845 (“Google -845 IPR”) (Final Written Decision issued with all challenged claims canceled; Final Written Decision on appeal); and
- *Unified Patents, LLC. v. Jenam Tech, LLC*, IPR2020-00742 (“Unified -742 IPR”) (Terminated).

Petitioner has also filed the following IPR or PGR petitions challenging patents related to the ’995 and ’742 patents, and which are also at issue in *Jenam Tech, LLC v. Google, LLC*, Case No. 3:21-cv-07994-JST (N.D. Cal.):

- IPR2021-00627 (U.S. Patent No. 10,375,215, “the ’215 patent”) (instituted);
- IPR2021-00628 (U.S. Patent No. 10,075,564, “the ’564 patent”) (instituted);
- IPR2021-00629 (the ’564 patent) (instituted);
- IPR2021-00630 (U.S. Patent No. 10,075,565, “the ’565 patent”) (instituted);
- IPR2021-00867 (U.S. Patent No. 10,306,026, “the ’026 patent”) (instituted);
- IPR2021-00868 (the ’026 patent) (instituted);
- IPR2021-00869 (U.S. Patent No. 10,069,945, “the ’945 patent”) (instituted);
- IPR2021-00870 (the ’945 patent) (instituted); and

- PGR2021-00082 (U.S. Patent No. 10,742,774) (sole challenged claim disclaimed by PO and institution denied in view of disclaimer).

C. Counsel and Service Information

Lead counsel: Naveen Modi (Reg. No. 46,224). Backup counsel: (1) Joseph E. Palys (Reg. No. 46,508), (2) Quadeer Ahmed (Reg. No. 60,835), (3) Jason Heidemann (Reg. No. 77,880).

Service information is Paul Hastings LLP, 2050 M Street NW, Washington, DC 20036, Tel.: 202.551.1700, Fax: 202.551.1705, email: PH-Google-Jenam-PGR@paulhastings.com. Petitioner consents to electronic service.

III. PAYMENT OF FEES UNDER 37 C.F.R. § 42.15(a)

The PTO is authorized to charge any fees due during this proceeding to Deposit Account No. 50-2613.

IV. TIME FOR FILING UNDER 37 C.F.R. § 42.202

The '742 patent issued on March 16, 2021. This Petition is being timely filed no later than the date that is nine months after the date of the grant of the '742 patent.

V. GROUNDS FOR STANDING UNDER 37 C.F.R. § 42.204(a)

Petitioner certifies that the '742 patent is available for PGR and Petitioner is not barred or estopped from requesting PGR on the grounds identified herein.

As discussed below in Section IX, the '742 patent is eligible for PGR because it has at least one claim that is not entitled to a pre-AIA filing date.

VI. PRECISE RELIEF REQUESTED AND GROUNDS RAISED

A. Claim for Which Review Is Requested

Petitioner respectfully requests review of claims 1, 65, 73, 74, 75, 76, 77, 78, 83, 86, 159, 167, 168, and 171 (“challenged claims”) of the ’742 patent, and cancellation of these claims as unpatentable.

B. Statutory Grounds of Challenge

The challenged claims should be canceled as unpatentable on the following grounds:

Ground 1: Claims 1, 65, 73, 74, 75, 76, 77, 78, 83, 86, 159, 167, 168, and 171 are unpatentable under AIA 35 U.S.C. § 112(a) as failing to satisfy the written description requirement; and

Ground 2: Claims 78, 83, 86, 159, 167, 168, and 171 are unpatentable under AIA 35 U.S.C. § 112(b) as failing to particularly point out and distinctly claim the subject matter which the named inventor regards as the invention.

The ’742 patent issued from an application filed October 23, 2020, which claims priority through a number of applications back to an application filed February 27, 2010. (EX1001, 1:8-50; EX1002 ¶73.) As explained below in section IX, the challenged claims of the ’742 patent are subject to the first-to-file provisions of the AIA.

VII. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art at the time of the alleged invention of the '742 patent ("POSITA") would have had an undergraduate degree in electrical engineering, computer engineering, computer science or a related field along with at least two years of work experience in the field of networking. (EX1002 ¶¶16-18.)² More education can supplement practical experience and vice versa. (*Id.*)

VIII. OVERVIEW OF THE '742 PATENT

The '742 patent is directed to networking and the sharing of information for detecting an idle TCP connection. (EX1001, 2:48-50, 9:29-38.) Figure 7 illustrates such a process.

² Petitioner submits the declaration of Dr. Bill Lin (EX1002), an expert in the field of the '742 patent. (EX1002 ¶¶3-15; EX1003.)

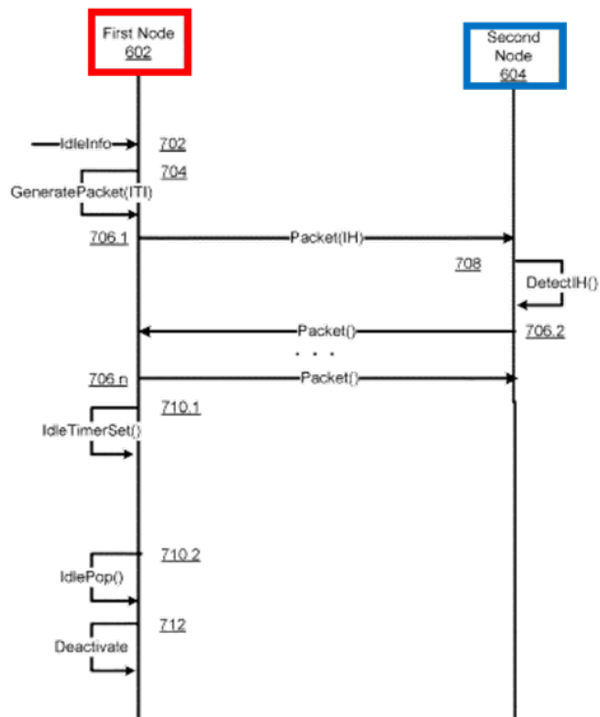


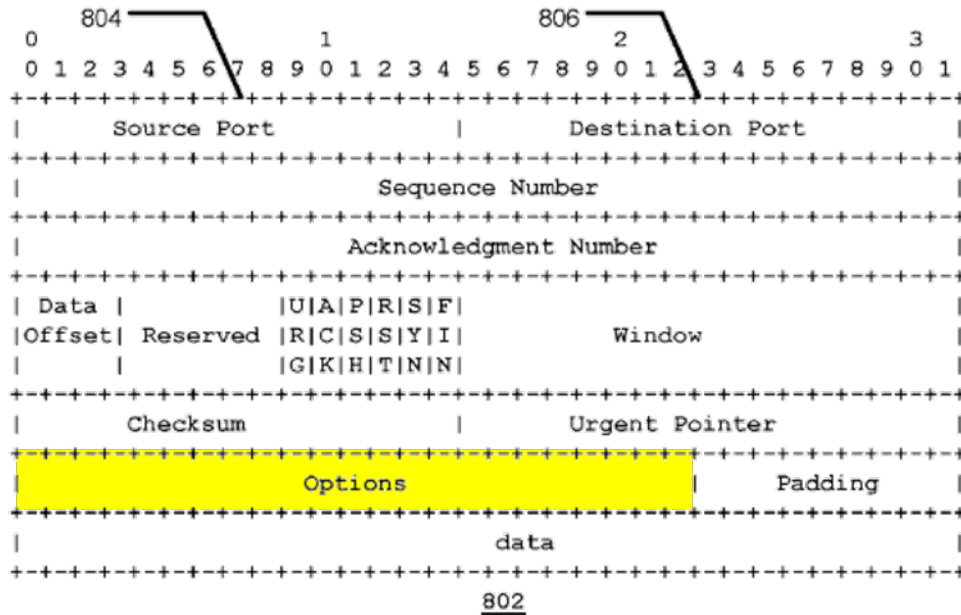
Fig. 7

(*Id.*, FIG. 7 (annotated); EX1002 ¶64.)

First, the **first node 602** receives a message 702 identifying idle information representing a duration for an idle time period (“ITP”). (EX1001, 12:55-63.) The idle information “may include and/or identify a duration of time for detecting an idle time period.” (*Id.*, 13:37-41.) The “duration may be specified according to various measures of time[,] including seconds.” (*Id.*; EX1002 ¶65.)

Next, the **first node** “generat[es] a TCP packet including an ITP header based on received idle information.” (EX1001, 17:4-7.) The **TCP options field** of a TCP

packet may store this ITP header. (*Id.*, 16:46-54.) Figure 8 below, “adapted from RFC 793,” illustrates this configuration.³ (*Id.*, FIG. 8, 7:28-30, 16:46-54.)



(*Id.*, FIG. 8 (cropped and annotated); EX1002 ¶66; *see also* EX1008, FIG. 3.)

The **TCP options field** contains a KIND sub-field that identifies the type of option presented, a length sub-field that specifies the length of the option field, and an **ITP Data sub-field** containing data. (EX1001, FIG. 8.)

³ RFC 793 is titled “Transmission Control Protocol, DARPA Internet Program Internet Protocol Specification.” (EX1008, 1; EX1001, 2:5-11; *see also* EX1019.) RFC 793 dates back to 1981 (EX1008, 1) and defined TCP at that time (*id.*). (*See also infra* Section IX.A.3; EX1002 ¶66 n.2.)

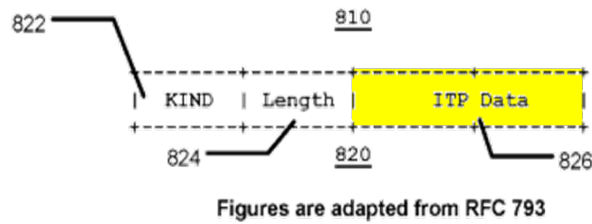


Fig. 8

(*Id.*, FIG. 8 (cropped and annotated); EX1002 ¶67.)

The ITP header (“IH”) is exchanged between nodes “during setup of [a] TCP connection” by way of a “three-way handshake,” which is a procedure “for establishing a TCP connection.” (EX1001, 15:49-63.) For example, as shown in Figure 7, the **first node** transmits a message 706.1, i.e., a TCP packet including an IH that contains ITP information, to **second node 604**. (*Id.*, 17:29-31.) Message 708 exemplifies the **second node**’s detection of the IH in the received TCP packet, i.e., the **second node 604** detects the ITP information identifying a duration for the ITP that is stored in the IH—this detected ITP information is used later to detect an idle period in the connection. (*Id.*, 22:50-63, 21:13-46; EX1002 ¶68.)

The ’742 patent explains that “a TCP keep-alive option, a TCP user timeout, a retransmission timeout, an acknowledgment timeout, and/or another timeout associated with a TCP connection may be modified based on the first idle information.” (EX1001, 14:48-51; EX1002 ¶69.)

The challenged claims, on the other hand, include limitations directed to a “first *non-TCP* connection” (EX1001, claim 1), a similar “first connection [that] *does not utilize Transmission Control Protocol (TCP)*” (*id.*, claim 75), and a “first *TCP-variant* connection” (*id.*, claim 78).⁴ The challenged claims also recite detecting a time period during at least a portion of the first non-TCP/TCP-variant connection “*including at least a portion of the first [] connection set up*” (where the detection of the time period causes the connection to at least partially close). (*Id.*, claims 1, 75, 78; EX1002 ¶70.)

However, as discussed above and further discussed below, the ’742 patent only describes its features in terms of a TCP connection and detecting time periods once a TCP connection is established. (*See infra* Sections IX, XI; *see also generally* EX1001, 2:54-6:60 (summary section discussing aspects relating to a “TCP” packet and “TCP” connection), 7:34-25:3 (Detailed Description section discussing aspects in terms of a “TCP” packet and “TCP” connection)⁵; EX1002 ¶71.) The ’742 patent

⁴ Emphasis added unless otherwise noted.

⁵ As discussed further below, the specification does mention a “variant of the current TCP,” but does so in terms of the location and structure of an ITP header that “may

does not describe a “*non-TCP* connection”/“*non-TCP* packet,” or a “connection [that] *does not utilize [TCP]*” in the context of the claimed invention set forth in independent claims 1 and 75, let alone describe the detection of a time period *during the time such a connection is being setup*, in the ways set forth in independent claims 1 and 75. (See *infra* Section XI.A; EX1002 ¶72.) Thus, the ’742 patent lacks written description support for these features. Moreover, with respect to claim 78, the ’742 patent fails to explain what a “*TCP-variant*” connection or packet is with sufficient particularity, rendering the claims reciting this feature indefinite.⁶ (See *infra* Section XI.B; EX1002 ¶782.)

be included in a TCP packet.” (EX1001, 16:58-61; *see infra* Section XI.B; EX1002 ¶71 n.5.)

⁶ The prior art grounds in the previously filed IPRs that demonstrate unpatentability of PO’s “TCP-variant” claims do not contradict or detract from the indefiniteness positions against claim 78 here. Indefiniteness is not available for IPRs (*see, e.g.*, 35 U.S.C. § 311(b); *Samsung Elecs. Am. v. Prisia Eng’g Corp.*, 948 F.3d 1342, 1345 (Fed. Cir. 2020)) and the prior art grounds in the IPRs demonstrate unpatentability consistent with the Board’s plain read of “TCP-variant” which must *at least* encompass protocols that “var[y] from TCP,” which the prior art discloses. (See

For these reasons, as discussed below, all the challenged claims lack written description support and/or are indefinite. (*See infra* Section XI; EX1002 ¶¶72; *see also id.* ¶¶19-63(discussing technology background), citing, e.g., EXS. 1007-1009, 1011-1015, 1020-1028.)

IX. THE '742 PATENT IS ELIGIBLE FOR PGR

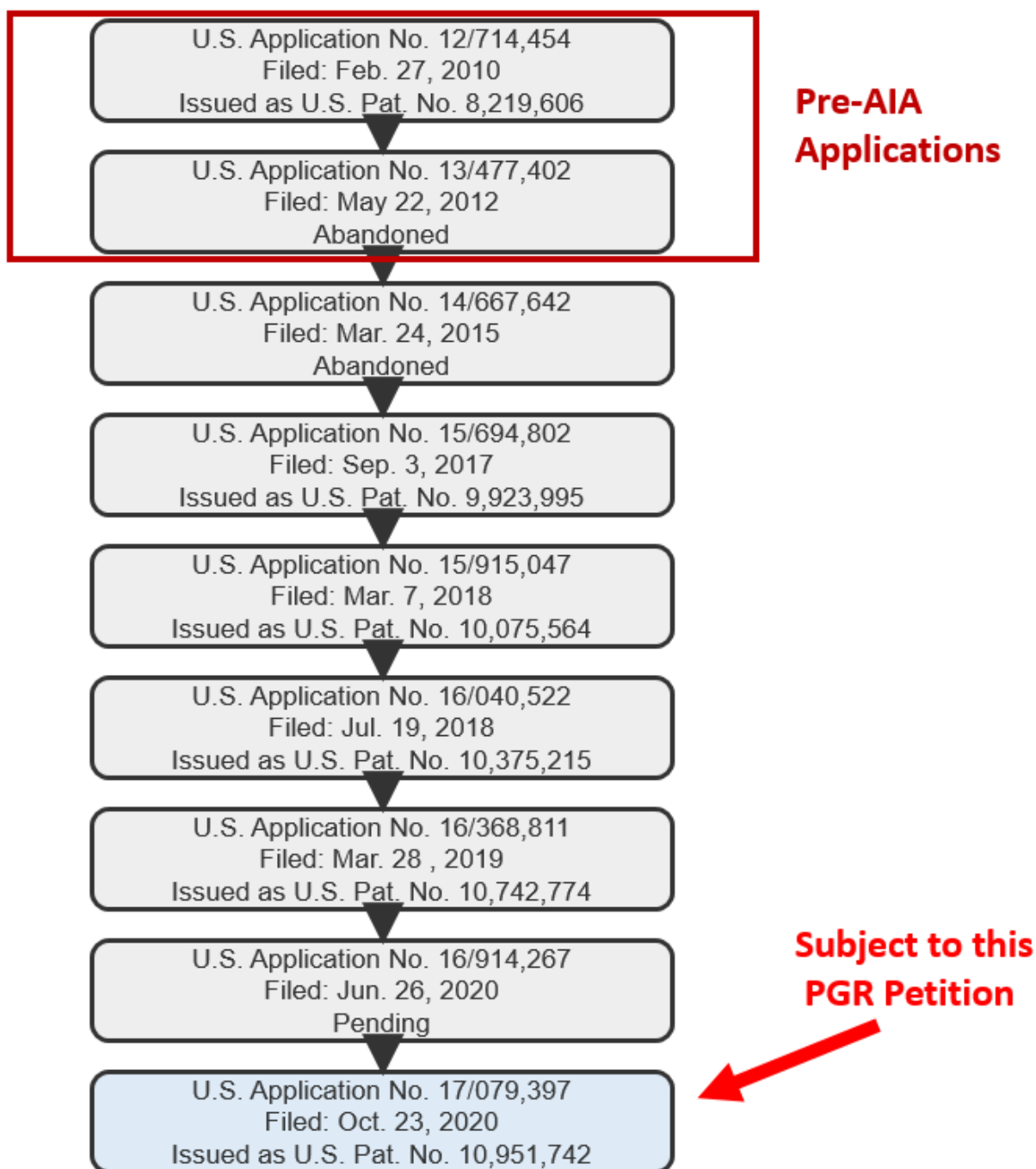
The PGR provisions of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”) apply to patents subject to the first inventor to file provisions of the AIA, i.e., patents having at least one claim with an effective filing date on or after March 16, 2013. *Grunenthal GmbH v. Antecip Bioventures II LLC*, PGR2018-00001, Paper 17 at 9-10 (May 1, 2018). A claim in a U.S. patent application is entitled to the benefit of the filing date of an earlier filed U.S. or PCT application if the subject matter of the claim is disclosed in the earlier filed application in accordance with the written description requirement. *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008) (subject matter

supra Section X.) Indeed, in finding that Petitioner showed the TCP-variant claims of the related '995 patent to be unpatentable, the Board agreed that the prior art “Eggert [EX1006] teaches TCP-variant connections and packets because it discloses a feature to add to TCP—the abort timeout option [ATO].” Google -845 IPR, Paper 33 (Final Written Decision) at 13 (August 27, 2021) (citing EX1006, 3).

disclosed for the first time in a continuation application does not receive benefit of the parent's filing date).

To comply with the written description requirement, the specification or earlier-filed application “must describe the invention sufficiently to convey to a person of skill in the art that the patentee had possession of the claimed invention at the time of the application, i.e., that the patentee invented what is claimed.” *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed Cir. 2005); *see also Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). “The test requires an objective inquiry into the four corners of the specification from the perspective” of a POSITA. *Ariad Pharms., Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). Whether the added subject matter is an obvious variant of the disclosed subject matter is irrelevant. *Lockwood*, 107 F.3d at 1572.

The '742 patent relates to several patents and/or patent applications, as shown in the purported priority chain below:



(See also *supra* Section II.B.2.)

As the above chart shows, the '742 patent relates to two applications filed before March 16, 2013, namely U.S. Patent Application No. 12/714,454 (“the ’454

application”) (EX1038) and U.S. Patent Application No. 13/477,402 (“the ’402 application”) (EX1039).

The ’742 patent is eligible for PGR because it has at least one claim that is not entitled to the filing date of either the ’454 application or the ’402 application (“the pre-AIA applications”). *See Inguran, LLC d/b/a/ Sexing Technologies v. Premium Genetics (UK) Ltd.*, PGR2015-00017, Paper 8 (Institution Decision) at 9-11 (December 22, 2015). Specifically, as explained below, at least claim 1 of the ’742 patent includes subject matter that is not disclosed in the pre-AIA applications. Therefore, claim 1 is not entitled to the filing date of either of the pre-AIA applications and thus is not entitled to a pre-March 16, 2013 filing date. *PowerOasis, Inc.*, 522 F.3d at 1306; *In re Gosteli*, 872 F.2d at 1010-11. (EX1002 ¶¶75-104.) Accordingly, the ’742 patent is eligible for PGR.

A. The Pre-AIA Applications Do Not Support the “Non-TCP” Features Recited in Claim 1

Independent claim 1 of the ’742 patent recites features concerning a “non-TCP connection” and a “non-TCP packet.” Specifically, claim 1 recites, in relevant part:

- An apparatus, comprising:
- a non-transitory memory storing instructions; and

- one or more processors in communication with the non-transitory memory, wherein the one or more processors execute the instructions to:
- identify, at a first node, first information on which at least a first duration for detecting a first type of time period is based;
- allocate a first resource for a first *non-Transmission Control Protocol (non-TCP) connection*;
- generate a first *non-TCP packet* including a first parameter field identifying first metadata for use in determining a second duration for detecting the first type of time period;
- set up the first *non-TCP connection*, by sending, from the first node to a second node, the first *non-TCP packet* to provide the first metadata to the second node, for use by the second node in determining the second duration for detecting the first type of time period;
- in response to detecting, based on the first duration and by the first node during at least a portion of the first *non-TCP connection* including at least a portion of the first non-TCP connection set up, a first time period of the first type of time period, at least partially close the first *non-TCP connection*, by releasing, by the first node, the first resource allocated for the first *non-TCP connection*;

- in response to detecting, based on the second duration and by the first node after the first duration is changed to the second duration, a second time period of the first type of time period, at least partially close the first ***non-TCP connection***, by releasing, by the first node, the first resource allocated for the first ***non-TCP connection***; and
- in response to detecting, based on a third duration, a third time period, at least partially close the first ***non-TCP connection***, by releasing, by the first node, the first resource allocated for the first ***non-TCP connection***, where the third duration is determined based on a first algorithm that is different from a second algorithm on which a determination of the second duration is based.

(EX1001, 25:5-47; EX1002 ¶¶75-76.)

As demonstrated in turn below, the two pre-AIA applications do not describe a “non-TCP connection” or “non-TCP packet” in any respect, let alone in the context of the non-TCP instructions executed by the one or more processors as set forth above, and the material incorporated by reference in the two pre-AIA applications also does not cure this deficiency. (See generally EX1038 (’454 application), 99-106 (abstract and claims) 111-118 (figures), 120-165 (specification); EX1039 (’402 application), 85 (abstract), 90-103 (claims and figures), 106-151 (specification); EX1002 ¶77.)

1. The Pre-AIA '454 Application Does Not Support the “Non-TCP” Features

Patent Owner contends that a “non-TCP” connection/packet, as set forth in claim 1, encompasses protocols that do not utilize TCP at all. (*See, e.g.*, EX1017, 9-16 (Patent Owner’s infringement contentions mapping the claimed “non-TCP” connection/packet to a UDP-based protocol connection/packet.) UDP is the User Datagram Protocol specified in, e.g., RFC 768. (EX1060, 1.) UDP does not utilize a TCP connection or TCP packets at all. (EX1002 ¶78; *see also generally* EX1060.)

However, the disclosure of the '454 application (including the claims) only describes embodiments based on TCP and does not describe any embodiment involving the “non-TCP” features (e.g., a connection that does not utilize TCP or a packet that is not a TCP packet) as required by claim 1 of the '742 patent. (EX1002 ¶79.)

In particular, the '454 application uses the term “TCP” nearly 400 times, including, for instance, in the specification (310 times), claims (72 times), abstract (3 times), and figures (14 times). (*See generally* EX1038 ('454 application), 99-106, 111-118, 120-165.) Not once does the '454 application refer to a “non-TCP” connection or packet, much less describe the non-TCP instructions set forth in the claim like setting up a connection between nodes that is *not TCP* (e.g., a connection not utilizing the TCP protocol) using packets that are *not TCP* packets (e.g., packets

not specified by the TCP protocol) and detecting time periods like the “[first]/[second]/[third] time period[s]” to partially close a connection that is *not TCP*, as set forth in claim 1. (*Id.*; EX1002 ¶80.)

For example, both the Abstract and “Summary” of the as-filed ’454 application describes the disclosed invention as relating to a “*TCP connection*” and “*TCP packet*” (as opposed to a *non-TCP* connection or packet required by claim 1):

Methods and systems are described for sharing information for detecting an idle *TCP connection*. In one aspect, a method includes receiving, by a second node from a first node, a first *transmission control protocol (TCP) packet* in a *TCP connection*. The method further includes ... identifying metadata for a first idle time period, detectable by the first node, during which no *TCP packet* including data in a first TCP data stream sent in the *TCP connection* by the second node is received by the first node. The method still further includes modifying ... a timeout attribute associated with the *TCP connection*.

(EX1038, 122 (¶[0008]), 99 (Abstract) (describing same); *see also id.*, 122-124 (¶¶[0009]-[0011] (describing additional aspects in the summary section in context of a “TCP packet” and “TCP connection”)); EX1002 ¶81.)

The detailed description in the '454 application likewise focuses on a “**TCP connection**.” (*Id.*, 125-126 (¶¶[0013]-[0020]).) For example, with reference to figures 2-4b, the '454 application explains:

FIG. 2 is a flow diagram illustrating a first method for sharing information for detecting an idle **TCP connection** according to an exemplary aspect of the subject matter described herein. FIG. 3 is a flow diagram illustrating a second method for sharing information for detecting an idle **TCP connection** according to an exemplary aspect of the subject matter described herein. FIG. 4a is a block diagram illustrating a system for sharing information for detecting an idle **TCP connection** according to the first method in FIG. 2. FIG. 4b is a block diagram illustrating a system for sharing information for detecting an idle **TCP connection** according to the second method in FIG. 3.

(*Id.*, 131-132 (¶[0035]); *see also, e.g., id.* (133-137 (¶¶[0042]-[0051] (describing in connection with figure 5, “TCP packets” and “TCP connection” and “TCP layer” features), 141 (¶[0064] (discussing a “TCP connection” as one that “may be identified by its endpoints” and “may include an endpoint of the TCP connection”), 143 (¶[0069] (discussing a “TCP keep-alive option, a TCP user timeout” and “another timeout associated with a TCP connection”); EX1002 ¶¶82-83.)

The lack of support for the “non-TCP” terms in the context used in claim 1 is exemplified by the claim requiring setup of a “non-TCP connection” using a “non-

TCP packet” while the ’454 application’s disclosure is limited to describing setup of a TCP connection using TCP packets. (EX1002 ¶84.) In particular, claim 1 recites: “*set up the first non-TCP connection*, by sending, from the first node to a second node, the *first non-TCP packet* to provide the first metadata to the second node, for use by the second node in determining the second duration for detecting the first type of time period.” (EX1001, 25:19-24.) However, the ’454 application only discloses setting up a *TCP connection* (i) using the three-way handshake described in RFC 793 or (ii) in other unspecified ways:

In an aspect, an ITP header may be included in a packet exchanged during setup of a TCP connection. *RFC 793 describes a "three-way handshake" for establishing a TCP connection. Other message exchanges may be used in setting up a TCP connection as those skilled in the art will understand. Such other exchanges are not currently supported by the TCP as described in RFC 793.* The specified "three-way handshake" and other patterns of message exchange for setting up a TCP connection include packets that are considered to be in the TCP connection for purposes of this disclosure.

(*Id.*, 147 (¶[0076]); EX1002 ¶84.)

Nowhere does the ’454 application describe setting up a connection that is *not* a TCP connection (e.g., a UDP-based protocol which does not utilize TCP at all), let

alone setting up such a connection using a packet that is not a TCP packet (e.g., a UDP-based packet). (*See generally* EX1038; EX1002 ¶85.)

A POSITA would not have understood that the disclosures in the '454 application limited to TCP embodiments would have been interchangeable with non-TCP embodiments. (EX1002 ¶86.) For example, a POSITA would have understood that a protocol that does not utilize TCP (like the UDP-based protocol noted in Patent Owner's infringement contentions) would operate in a different environment with its own set of rules regarding at least (i) the setup of a connection between two nodes in a network, (ii) how the devices would communicate with each other, (iii) the packet structure used for communication, and (iv) detection of timeouts that would cause the connection to close. (EX1002 ¶86; EX1060, 1, EX1027, 1, EX1061, 1.) However, the '454 application does not provide any explanation regarding how its disclosed techniques for sharing idle time information in a TCP options field of a TCP packet during setup of a TCP connection would have extended to an altogether different environment with its own rules regarding connection setup, connection operation, packet structure, and timeout detection. (EX1002 ¶86.)

For example, nowhere does the '454 application describe (or inform a POSITA) how its disclosures limited to TCP embodiments may be extended to the claim 1 features like allocating a resource to a non-TCP connection, generating a non-TCP packet, and setting up a non-TCP connection by sending such a non-TCP

packet. (EX1002 ¶87.) Thus, the '454 application does not provide written description support for the “non-TCP” terms and the non-TCP instructions set forth in claim 1. (*Id.* ¶88.)

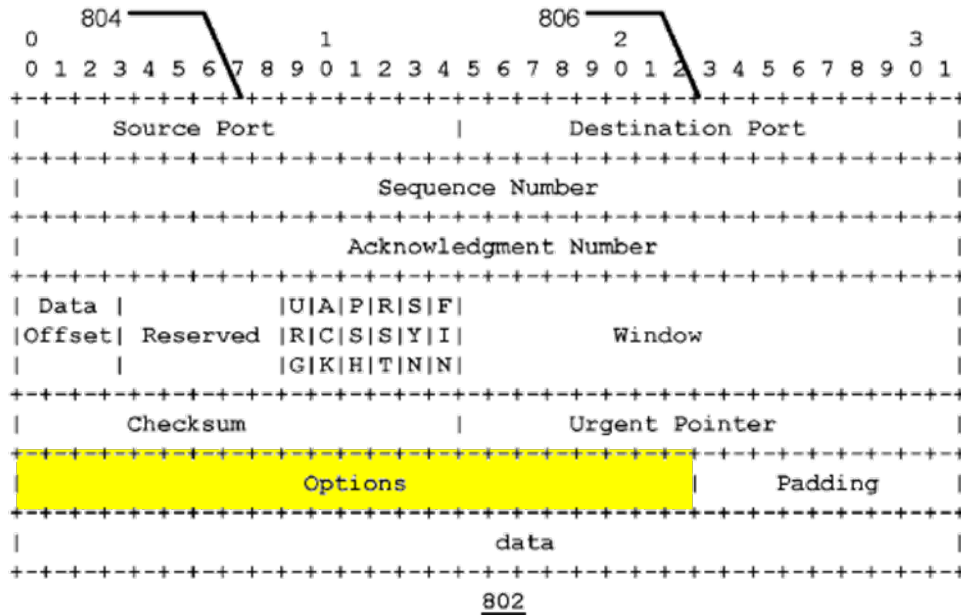
While the '454 application discusses that “[a]n equivalent or analog of an ITP header may be included in a footer of a protocol packet in *an extension and/or variant of the current TCP*” (EX1038, 147 (¶[0080])), such extensions or variants are mentioned solely within the context of a TCP packet:

Those skilled in the art will recognize given this disclosure that an *ITP header* may have other suitable formats and *may be included in a TCP packet in structures and locations other than those specified for TCP options in RFC 793*. An equivalent or analog of an ITP header may be included in a footer of a *protocol packet in an extension and/or variant of the current TCP*.

(*Id.*, 147 (¶[0080])); EX1002 ¶89.)

Indeed, to the extent any embodiment is disclosed in relation to these features, it relates to using a TCP options field in a *conventional TCP packet structure provided by RFC 793* to share idle time information between nodes. (EX1038, 147

(¶¶[0076]-[0079]).⁷ Figure 8 below, “adapted from RFC 793,” illustrates this configuration. (*Id.*, FIG. 8, ¶¶[0078]-[0079].)



(*Id.*, FIG. 8 (cropped and annotated); EX1002 ¶90; *see also* EX1008, FIG. 3.)

This disclosed extension or variant of “the current TCP” in the ’454 application does not describe any *non-TCP* functionality, especially when viewed in the context of surrounding language in the specification that, as explained above, is entirely focused on TCP-based features without any discussion of “non-TCP” features. (EX1002 ¶91.)

Likewise, the ’742 patent confirms that the “variant of the current TCP” disclosed in paragraph [0080] of the ’454 application above also cannot encompass

⁷ *See* n.3.

the claimed “non-TCP” connection or packet features because it includes claims that separately recite “TCP-variant” and “non-TCP.” (*E.g., Compare* EX1001, 40:54-41:26 (TCP-variant based claim 78) *with* 25:5-47 (non-TCP based claim 1); EX1002 ¶92.) The ’742 patent’s separate use of these different claim terms demonstrates the distinction the patent makes between a “variant” of TCP and “non-TCP.” Indeed, Patent Owner similarly differentiated between the “TCP-variant” and “non-TCP” terms in other patents from the ’742 patent family. (*See, e.g.,* EX1010 (’995 patent), 23:4-21 (TCP-variant-based claim 1), 24:33-51 (TCP-variant-based claim 15), 26:7-14 (non-TCP-based claim 27), 26:43-28:16 (non-TCP-based claims 29-30); EX1036 (’564 patent), 23:5-21 (TCP-variant-based claim 1), 24:29-47 (TCP-variant-based claim 16), 25:27-53 (non-TCP-based claim 24), 26:6-29 (non-TCP-based claim 28).)

Even if the “non-TCP” terms are somehow interpreted to encompass “extension[s] and/or variant[s] of the current TCP” (EX1038, 147 (¶[0080])), which is an interpretation unsupported by the ’454 application, the full scope of the “non-TCP” terms is not fully supported as the ’454 application does not provide adequate written description support for protocols that do not use TCP at all (*e.g.,* a UDP-

based connection/packet). (EX1002 ¶93; EX1017, 9-16.)⁸ In particular, to satisfy the written description requirement, the patent disclosure must show that the inventor was in possession of the claimed invention including the entire scope of these “non-TCP” terms. *PowerOasis, Inc.*, 522 F.3d at 1306-1311 (finding no written description support in priority application for a “customer interface” encompassing an interface that can be located on a vending machine or remotely

⁸ Indeed, under Patent Owner’s interpretation, “non-TCP” would encompass various other protocols (e.g., protocols based on XTP or IPX/SPX along with UDP-based protocols), none of which are described in the ’742 patent family disclosures, much less in the context of the features set forth in the ’742 patent claims. (EX1002 ¶93 n.7; *see also id.*, ¶54; EX1016, 1, 7-8.) In a proceeding involving the related ’995 patent (that issued from the ’802 application), Patent Owner’s declarant also confirmed that “non-TCP” encompasses protocols “other than TCP” or protocols that are “not TCP.” (EX1029, 81:6-25 (“ . . . [I]n general, a person of ordinary skill in the art reading the specification would see that a non-TCP packet or a non-TCP connection was *something other than TCP*. It might be, for example, be a TCP-variant protocol *but it would be something that's not TCP*.”), 87:2-88:2 (“ . . . if it isn’t TCP, it’s non-TCP”).)

from a vending machine such as on a customer's laptop, where the priority application only disclosed an interface located on the vending machine); *LizardTech*, 424 F.3d at 1343-45 (finding no written description support in patent disclosure for creating a seamless discrete wavelet transform (DWT) generally where patent specification "provide[d] only one method for creating a seamless DWT"). That is not the case here.

The '742 patent's disclosure, including its pre-AIA applications, does not describe any embodiment that shows a connection between nodes that does not use TCP altogether and which uses packets that are not specified by TCP along with the other claim features (e.g., connection setup, time period detection causing partial closure of the connection) associated with such a "non-TCP" connection. (EX1002 ¶93.) For example, there is no description of setting up a connection that does not utilize TCP (e.g., a UDP-based connection) using packets not specified by TCP (e.g., UDP-based packets) to allocate resources for such a UDP-based connection, set up the UDP-based connection, and detect time periods in the UDP-based connection. (*Id.*) Instead, as noted above, the '454 application's disclosure is limited to TCP-based embodiments including setting up the connection using TCP's three-way handshake (as specified in RFC 793) and employing TCP-based packets to share idle time information for a TCP-based connection. (*See generally* EX1038; EX1002

¶93.) And as discussed above, the TCP-based teachings of the '454 application cannot be extended to non-TCP protocols. (EX1002 ¶93.)

Thus, for the reasons above, the '454 application does not provide any support for the “non-TCP connection” and “non-TCP packet” features recited in claim 1 of the '742 patent. (EX1002 ¶94.)

2. The Pre-AIA '402 Application Does Not Support the “Non-TCP” Features

The '402 application is a continuation of the '454 application (EX1001, 1:30-39; EX1039 ('402 application), 87, 106 (¶[0001])). Therefore, substantively, the '402 application includes the same disclosure as the '454 application. (EX1040 (computer-generated redline showing the similarities in BLACK and differences between the '454 and '402 applications (BLUE for what is only present in the '402 application and RED for what is only present in the '454 application))).) *See, e.g., Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1579-80 (Fed. Cir. 1996), *cert. denied*, 520 U.S. 1230 (1997). Just like the '454 application, the '402 application's specification, figures, abstract, and as-filed claims do not describe any “non-TCP connection” or “non-TCP packet” features, much less describe the claimed non-TCP instructions like setting up a connection between nodes that is *not TCP* (e.g., a connection not utilizing the TCP protocol) using packets that are *not TCP* packets (e.g., packets not specified by the TCP

protocol) and detecting time periods like the “[first]/[second]/[third] time period[s]” to partially close a connection that is *not TCP*, as set forth in claim 1. (*See generally* EX1039 (’402 application); EX1002 ¶¶95-96.)

Thus, for the same reasons explained above for the ’454 application, the ’402 application does not provide any support for the “non-TCP connection” and “non-TCP packet” features recited in claim 1 of the ’742 patent. (EX1002 ¶¶97.)

3. Materials Incorporated by Reference in the Two Pre-AIA Applications Do Not Support the “Non-TCP” Features

The two pre-AIA applications purport to incorporate U.S. Application No. 12/714,063 (“the ’063 application”) (EX1041) and RFC 793 (EX1008). (EX1038 (’454 application), 120 (¶¶[0001]-[0002]), 90 (IDS citing RFC 793); EX1039 (’402 application), 106 (¶¶[0002]-[0003]); EX1002 ¶¶98-101.) However, as with the pre-AIA applications, neither the ’063 application nor RFC 793 discloses or mentions the claimed “non-TCP connection” or “non-TCP packet” features, and the non-TCP instructions recited in claim 1 of the ’742 patent.

The ’063 application shares a similar specification to the ’454 application and only describes “TCP connections” and “TCP packets” (including extensions and variants in a similar fashion as the ’454 application). (*See generally* EX1041, 137-201; *see also* EX1042 (computer-generated redline showing the similarities in BLACK and differences between the as-filed specifications in the ’063 and ’454

applications (BLUE for what is only present in the '063 application and RED for what is only present in the '454 application).) (EX1002 ¶99.)

RFC 793 dates back to 1981 (EX1008, 1) and defined TCP at that time (*id.*).⁹

Indeed, RFC 793 provides:

This document describes the DoD *Standard Transmission Control Protocol (TCP)*. There have been nine earlier editions of the ARPA TCP specification on which this standard is based, and the present text draws heavily from them.

(EX1008, 4.) RFC 793 likewise does not describe the “non-TCP connection” and “non-TCP packet” features like that recited in claim 1. (EX1002 ¶100.)

Thus, even if the material disclosed in RFC 793 and/or the '063 application is incorporated into the pre-AIA application disclosures, none of the material incorporated by reference supports the claimed “non-TCP connection” and “non-TCP packet” features along with the related non-TCP instructions like that recited in claim 1 of the '742 patent. (EX1002 ¶101.)

⁹ See n.3.

4. The Pre-AIA Applications and Materials Incorporated by Reference Collectively Do Not Support the “Non-TCP” Features

In view of the foregoing, neither of the two pre-AIA applications convey to a POSITA that the named inventor had possession of the “non-TCP connection” and/or “non-TCP packet” features recited in claim 1 at the relevant time. As explained, neither pre-AIA application (or its purported incorporated material) describes a “non-TCP connection” and/or a “non-TCP packet” in any respect, let alone in the context of the instructions executed by the one or more processors as set forth in claim 1. (EX1001, 25:10-47; EX1002 ¶¶102-104.)

The above understanding is consistent with the prosecution history of the ’742 patent family, as the terms “non-TCP connection” and/or a “non-TCP packet” appear in the family of applications for the ’742 patent for the first time in U.S. Patent Application No. 15/694,802 (“the ’802 application”) (EX1044) filed September 3, 2017. The ’802 application is a continuation-in-part application of U.S. Patent Application No. 14/667,642 (“the ’642 application”) (EX1043), which is a continuation-in-part application of the ’402 application.¹⁰ The ’802 application

¹⁰ The ’642 application is directed to different subject matter and does not refer to a “non-TCP” connection or packet. (*See infra* Section XI.A.1.b.1; EX1002 ¶103 n.9.)

introduced the non-TCP connection and non-TCP packet terms only in its summary section of the specification and in the claims.¹¹ (EX1044, 17-18 (¶¶[0012]-[0013], 70-77; *see also id.*, 100 (substitute specification contains no new matter), 105-106 (¶¶[0012]-[0013]); EX1002 ¶103.) As discussed below in Section XI.A, none of the priority applications of the '742 patent, including the '802 application, provide

¹¹ Some of the claims reciting “non-TCP connection” in the '802 application are found in the '995 patent, which issued from the '802 application, and those claims were challenged in the now-terminated Unified -742 IPR. (*See supra* Section II.B.3.) In the Unified -742 IPR, the Board noted that “[a]lthough the '995 patent claims priority to applications filed before March 16, 2013, Patent Owner has not shown that the written description of the earlier applications supports the challenged claims.” Unified -742 IPR, Paper 11 (Institution Decision) at 4 n.1 (October 8, 2020). Patent Owner responded that “without waiving any right to claim an earlier priority date, and contest the applicable patent laws governing the '995 patent, Patent Owner hereby addresses the Petition and Board’s Institution Decision under post-AIA patent law.” Unified -742 IPR, Paper 13 (Patent Owner Response) at 2 n.2 (January 1, 2021).

adequate written description support for the “non-TCP” terms in claim 1. (*See infra* Section XI.A.)

For the reasons above, claim 1 of the ’742 patent includes subject matter that is not disclosed in the pre-AIA applications. Therefore, claim 1 is not entitled to the filing date of either of the pre-AIA applications and thus is not entitled to a pre-March 16, 2013 filing date. (EX1002 ¶104.)

B. AIA Applicability

The ’742 patent is eligible for PGR. As discussed above, at least claim 1 of the ’742 patent includes subject matter not disclosed by an application filed before March 16, 2013. Therefore, every claim of the ’742 patent is subject to the first-to-file provisions of 35 U.S.C. § 102(a). *See Inguran, LLC d/b/a/ Sexing Technologies*, PGR2015-00017, Paper 8 (Institution Decision) at 9-11.

X. CLAIM CONSTRUCTION

In a post grant review, claims are construed in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.200(b). In particular, claim terms are generally given their “ordinary and customary meaning,” that is, “the meaning that the term would have to a POSITA in question at the time of the invention, i.e., as the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). In the case that “the

specification . . . reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess . . . the inventor’s lexicography governs.” *Id.* at 1316 (internal citation omitted).

The Board only construes claims when necessary to resolve the underlying controversy. *Toyota Motor Corp. v. Cellport Sys., Inc.*, IPR2015-00633, Paper 11 at 16 (August 14, 2015). Petitioner submits that, for purposes of this proceeding, no term requires construction.¹² (EX1002 ¶74.)

¹² Petitioner reserves all rights to raise claim construction and other arguments in district court as relevant to those proceedings. A comparison of the claims to any accused products in litigation may raise controversies that are not presented here given the similarities between the references and the patent.

XI. DETAILED EXPLANATION OF GROUNDS

A. Ground 1: The Challenged Claims Lack Written Description Support

A patent specification must “contain a written description of the invention.” 35 U.S.C. § 112(a); *Ariad*, 598 F.3d at 1344 (citing pre-AIA 35 U.S.C. § 112 ¶1). The written description requirement serves “to ensure that the patent applicant was in full possession of the claimed subject matter on the application filing date.” *Turbocare Div. of Demag Delaval Turbomachinery Corp. v. General Elec. Co.*, 264 F.3d 1111, 1118 (Fed. Cir. 2001). “When the applicant adds a claim or otherwise amends his specification after the original filing date, . . . the new claims or other added material must find support in the original specification.” *Id.*

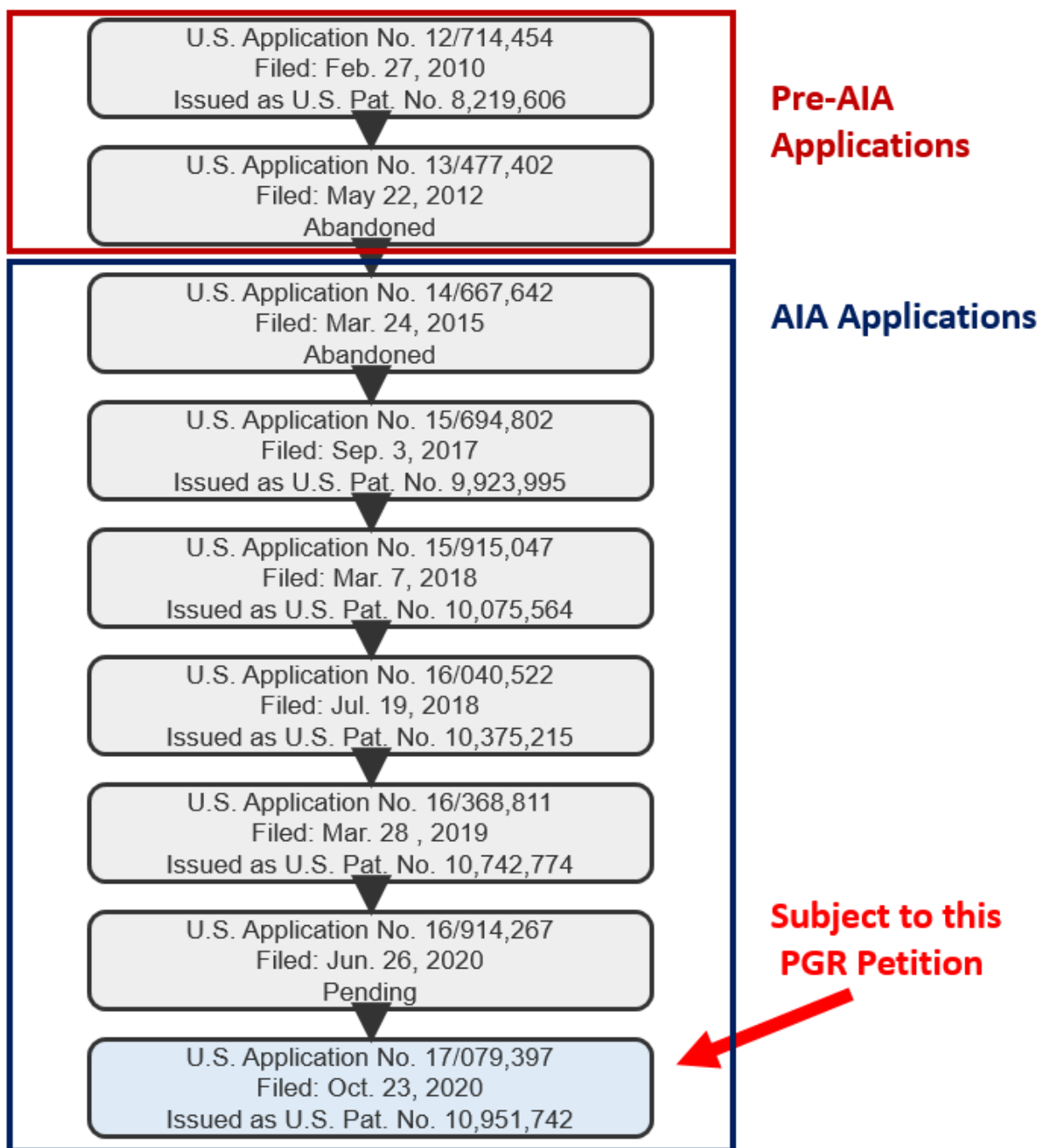
As discussed above, to comply with the written description requirement of § 112, the claimed invention must be sufficiently described in the specification to convey to a POSITA that the named inventor(s) had possession of the claimed invention at the time the application was filed. (*See supra* Section IX.) Whether the added subject matter is an obvious variant of the disclosed subject matter is irrelevant. (*Id.*)

As discussed below, the challenged claims include features not disclosed in the specification such that a POSITA would not have understood that the named inventor had possession of the claimed invention at the time U.S. Patent

Application No. 17/079,397 (“’397 application”), which issued as the ’742 patent, was filed on October 23, 2020. (EX1002 ¶¶105; *see also id.* ¶¶106-165.)

1. The ’742 Patent and Its Priority Applications Do Not Provide Written Description Support For The “Non-TCP” Features (Claims 1, 65, 73, and 74)

Independent claim 1 of the ’742 patent recites features concerning a “*non-TCP* connection” and a “*non-TCP* packet” in the context of instructions executed by the one or more processors including, e.g., allocating a resource for a *non-TCP* connection, generating a *non-TCP* packet, setting up the *non-TCP* connection by sending the *non-TCP* packet, and in response to detecting a first time period, partially closing the *non-TCP* connection. (*See supra* Section IX.A; EX1001, 25:13-47.) A POSITA would not have understood that the named inventor had possession of the claimed invention including such “*non-TCP*” features at the time the ’397 application was filed because the as-filed specification of the ’397 application and the specifications of the ’742 patent’s priority applications (shown below) do not support these features. (EX1002 ¶¶106-107.)



(See also *supra* Section II.B.2.)

a) The Pre-AIA Applications Do Not Support the “Non-TCP” Features

As discussed above in Section IX, the two pre-AIA applications (including the material incorporated therein) do not convey to a POSITA that the named inventor had possession of the “non-TCP connection” and/or “non-TCP packet” features recited in claim 1 at the relevant time. (*See supra* Section IX; EX1002 ¶¶108; *see also id.* ¶¶109-138.)

b) The AIA Applications Including the ’397 Application Do Not Support the “Non-TCP” Features

The ’742 patent matured from seven applications filed after March 16, 2013, as shown in the chart above in Section XI.A.1: U.S. Application Nos. 14/667,642 (“’642 application”), 15/694,802 (“’802 application”), 15/915,047 (“’047 application”), 16/040,522 (“’522 application”), 16/368,811 (“’811 application”), 16/914,267 (“’267 application”), and the ’397 application which issued as the ’742 patent (collectively referred to as the “AIA applications”). None of these AIA applications conveys to a POSITA that the named inventor had possession of the “non-TCP connection” and/or “non-TCP packet” features in the context of the instructions recited in claim 1 at the relevant time. (EX1002 ¶¶109-110.)

(1) The ’642 Application Does Not Support the “Non-TCP” Features

The ’642 application is a continuation-in-part of the ’402 application (EX1001, 1:35-44) and has little, if anything, in common with the subject matter of

the '742 patent family concerning sharing of information for detecting an idle TCP connection (*see supra* Section VIII). For example, the specification of the '642 application was significantly amended such that it was directed to “selecting a resource based on a processing cost,” and the disclosures regarding the sharing of information for detecting an idle TCP connection were removed. (EX1043, 108 (title), 110-111 (¶¶[0005]-[0006]); EX1049 (computer-generated redline showing the similarities between the '402 and '642 applications in BLACK and differences (BLUE for what is only present in the '642 application and RED for what is only present in the '402 application)), 1 (title), 3 (¶¶[0005]-[0006])).) The specification of the '642 application does not describe the detection of any idle time periods during network communications in the TCP or non-TCP context. (*See generally* EXS 1043, 1049.) While the '642 application claims priority to (or is related) to a number of U.S. patent applications (EX1043, 108-110 (¶¶[0001]-[0004]), 162-164 (¶[0128])), none of these applications (EXS1038-1039, 1041, 1062-1074) describe any “non-TCP” features as set forth in claim 1. Thus, the '642 application does not convey to a POSITA that the named inventor had possession of the “non-TCP connection” and/or “non-TCP packet” features in the context of the instructions recited in claim 1 at the relevant time. (EX1002 ¶¶111-114.)

**(2) The '802 Application Does Not Support the
“Non-TCP” Features**

The '802 application is a continuation-in-part of the '642 application (EX1001, 1:29-39). As noted above, the terms “non-TCP connection” and/or a “non-TCP packet” appear for the first time in the '802 application in the family of applications for the '742 patent. (*See supra* Section IX.A.4.) The '802 application introduced the non-TCP connection and non-TCP packet terms only (i) in its summary section of the specification and (ii) in the claims.¹³ (EX1044, 17-18 (¶¶[0012]-[0013]), 70-77; *see also id.*, 100 (substitute specification contains no new matter), 105-106 (¶¶[0012]-[0013]); EX1002 ¶¶115-116.) Indeed, other than the changes to the summary of the '802 application, the specifications of the '802 application and the pre-AIA '454 application are substantially similar. (*See generally* EX1050 (computer-generated redline showing the similarities between the '454 and '802 applications in BLACK and differences (BLUE for what is only present in the '802 application and RED for what is only present in the '454 application)); *see also id.*, 2-5 (¶¶[0009]-[0017])).¹⁴ (EX1002 ¶116.)

¹³ *See supra* n.11.

¹⁴ The only change to the detailed description portion of the '802 application specification is the addition of a brief explanation of the well-known TCP three-way

Notably, the introduction of the “non-TCP” terms in the summary section and claims of the as-filed ’802 application simply replaces the term “TCP” with “non-TCP” but otherwise generally discloses and claims systems and methods similar to those disclosed in the TCP-based pre-AIA applications. (*Compare, e.g.*, EX1044, 17-18 (¶¶[0012]-[0013]) (the new “non-TCP” embodiments in summary section) *with* EX1038, 122-123 (¶¶[0008]-[0009]) (the TCP embodiments disclosed in the pre-AIA ’454 application); *compare* EX1044, 70-77 (the “non-TCP” claims) *with* EX1038, 100-106 (the TCP-based claims in the ’454 application).) In other words, other than inserting the term “non-TCP” in the summary and claims of the ’802 application, the ’802 application includes *no explanation* regarding what is meant by “non-TCP” and how the disclosed techniques for sharing of information for detecting an idle TCP connection could be applied to “non-TCP” connections using “non-TCP” packets. (EX1002 ¶117.)

Therefore, a POSITA would not have understood based on the disclosure of the ’802 application that the named inventor of the ’742 patent would have had possession of the subject matter set forth in claim 1 because the detailed description

handshake already described in RFC 793 decades earlier. (EX1050, 15 (¶¶[0082]-[0087]); EX1008 (RFC 793), 31-32; EX1002 ¶116 n.11.)

of the specification of the '802 application (which is substantially similar to the pre-AIA applications) is exclusively focused on TCP-based connections and packets, as explained above in Section IX.A. (EX1002 ¶118); *Ariad*, 598 F.3d at 1349-50 (“[A]n adequate written description of a claimed genus requires more than a generic statement of an invention’s boundaries.”) (citation omitted); *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 323 F.3d 956, 968 (Fed. Cir. 2002) (holding that generic claim language appearing in *ipsis verbis* in the original specification did not satisfy the written description requirement because it failed to support the scope of the genus claimed).

In particular, the as-filed specification of the '802 application does not disclose any embodiment where time periods are detected in “non-TCP” connections (e.g., a connection not utilizing the TCP protocol) based on an exchange of “non-TCP” packets (e.g., packets not specified by the TCP protocol). (EX1002 ¶119); *see Fiers v. Revel*, 984 F.2d 1164, 1170 (Fed. Cir. 1993) (rejecting the argument that “only similar language in the specification or original claims is necessary to satisfy the written description requirement”); *LizardTech*, 424 F.3d at 1346 (explaining that a specification cannot always support expansive claim language and satisfy the requirements of 35 U.S.C. § 112 “merely by clearly describing one embodiment of

the thing claimed.”).¹⁵

For example, claim 1 requires at least one “non-TCP connection” that involves “allocat[ing] a first resource,” “generating a first non-TCP packet,” and “partially clos[ing] the first non-TCP connection” in response to three different time periods. (EX1001, 24:27-41 (cl. 1).) However, the detailed description of the ’802 application discusses a method based on a TCP connection only—indeed, the term “TCP connection” appears 109 times in the detailed description. (*E.g.*, EX1044, [0057] (“Detailed information on the operation of TCP is included in RFC 793”), [0082] (“In an aspect, an ITP header may be included in a packet exchanged during setup of TCP connection. RFC 793 describes a “three-way handshake” for establishing a *TCP connection*.”), [0088] (“Other message exchanges may be used in setting up a *TCP connection* as those skilled in the art will understand. Such other exchanges are not currently supported by the TCP as described in RFC 793. ... An

¹⁵ As noted above in Section IX.A.1, whether the “non-TCP” terms encompass TCP extensions or variants is irrelevant because the ’742 patent disclosure must provide written description support for the full scope of these terms, which includes protocols that do not utilize TCP at all.

equivalent or analog of an ITP header may be included in a footer of a protocol packet in an extension and/or variant of the current TCP.”.) (EX1002 ¶120.)

The only mention of the word “non-TCP” in the specification is in the summary section, which spans two paragraphs. (EX1044, 16-18 (¶¶[0011]-[0012]).) The summary section, however, explicitly states that any disclosure in this section is a “simplified summary of the disclosure in order to provide a basic understanding to the reader” and that “it *does not* identify key/critical elements of the invention or delineate the scope of the invention.” (EX1044, 16 (¶[0009]).) It further states that “[i]ts *sole purpose* is to present some concepts disclosed herein in a simplified form as a prelude to the more detailed description that is presented later.” (*Id.*) Accordingly, the mere fact that two paragraphs in the summary section of the specification for the ’802 application refer to a “non-TCP connection” does not show that the named inventor had possession of the “non-TCP connection” elements of the claimed invention—e.g., “allocat[ing] a first resource,” “generating a first non-TCP packet,” and “partially clos[ing] the first non-TCP connection” in response to three different time periods—at the time of the ’802 application as 35 U.S.C. § 112(1) requires. (EX1002 ¶121.)

In particular, as noted above, a POSITA would have understood that a “non-TCP” protocol (like the UDP-based protocol noted in Patent Owner’s infringement contentions) would operate in a different environment with its own set of rules

regarding at least (i) the setup of a connection between two nodes in a network, (ii) how the devices would communicate with each other, (iii) the packet structure used for communication, and (iv) detection of timeouts that would cause the connection to close. (EX1002 ¶122; *see supra* Section IX.A.1; EX1060, 1, EX1027, 1, EX1061, 1.) Thus, the generic description of “non-TCP” in the summary section, which the disclosure admits “*does not* identify key/critical elements of the invention or delineate the scope of the invention” (EX1044, [0009]), without any further explanation of how the invention would operate even in a single exemplary “non-TCP” protocol, is insufficient to provide written description support. (EX1002 ¶122); *see LizardTech*, 424 F.3d at 1345-47 (rejecting argument that original disclosure including language identical to subsequently issued claim supported the issued claim because the scope of the issued claim was not supported by the original disclosure); *Ariad*, 598 F.3d at 1349-50 (“[A]n adequate written description of a claimed genus requires more than a generic statement of an invention’s boundaries.”) (citation omitted); *Enzo Biochem, Inc.*, 323 F.3d at 968 (holding that generic claim language appearing in *ipsis verbis* in the original specification did not satisfy the written description requirement because it failed to support the scope of the genus claimed).

As these disclosures would be insufficient to disclose even verbatim claim language, they cannot support the claims in the ‘742 patent. *See also Driessen v.*

Sony Music Ent't, 640 Fed. App'x 892, 896 (Fed. Cir. 2016) (“The mere presence of these words in isolation does not suffice to show that the ‘patentee had possession of’ . . . the claimed invention at the time of the application”) (citing *LizardTech*, 424 F.3d at 1345); *Lockwood*, 107 F.3d at 1572 (“While the meaning of terms, phrases, or diagrams in a disclosure is to be explained or interpreted from the vantage point of one skilled in the art, ***all the limitations must appear in the specification.***”); *see also id.* (“The question is not whether a claimed invention is an obvious variant of that which is disclosed in the specification.”). As discussed above and further discussed below, far from describing the “non-TCP” features set forth in claim 1 in any detail, none of the disclosures of the ’742 patent family even include language mirroring the language of claim 1 (which, in any case, would be insufficient for written description support). (EX1002 ¶122.)

Additionally, a POSITA would not have understood based on the disclosure of the ’802 application that the setup and configuration of a TCP connection as recited in the detailed description was interchangeable with the setup and configuration of a ***non***-TCP connection for the same reasons discussed above with respect to the pre-AIA applications. (EX1002 ¶123; *see supra* Section IX.A.1; *see also* EX1044, 17-18 (¶¶[0012]-[0013]), 70-77; *see also* Section IX.A.1 (discussing similar limited disclosure in the pre-AIA applications regarding connection setup in TCP context).) In particular, as discussed above in Section IX.A.1, a POSITA would

have understood that a protocol that does not utilize TCP (like the UDP-based protocol noted in Patent Owner's infringement contentions) would operate in a different environment with its own set of rules regarding at least (i) the setup of a connection between two nodes in a network, (ii) how the devices would communicate with each other, (iii) the packet structure used for communication, and (iv) detection of timeouts that would cause the connection to close. (EX1002 ¶123; EX1060, 1, EX1027, 1, EX1061, 1.) However, other than generally mentioning the term "non-TCP" in the summary section and the claims, the '802 application does not provide any explanation regarding how its disclosed techniques for sharing idle time information in a TCP options field of a TCP packet during setup of a TCP connection would have extended to an altogether different environment with its own rules regarding connection setup, connection operation, packet structure, and timeout detection. (EX1002 ¶123.) Hence, a POSITA would not have understood that the disclosure in the detailed section of the '802 application provides adequate description or support for demonstrating that the inventor was in possession of establishing a non-TCP connection. (*Id.*)

The originally-filed claims of the '802 application reciting "non-TCP" features do not provide written description support for claim 1 of the '742 patent for similar reasons. (EX1002 ¶124.) In particular, they recite "non-TCP" features in the context of nodes connected via a "non-TCP" connection and exchanging

information in “non-TCP” packets. (EX1044, 70-77.) However, the claims specification fail to provide any detail regarding any connections that do not use TCP. (EX1002 ¶124); *LizardTech*, 424 F.3d at 1345-47 (rejecting argument that an originally filed, and subsequently issued, claim reciting creation of a seamless discrete wavelet transform (DWT) supported itself, noting that “[w]hile it is true that an originally filed claim can provide the requisite written description to satisfy section 112, . . ., nothing in [the original claim] or specification constitutes an adequate and enabling description of all seamless DWTs” because the patent specification “provide[d] only one method for creating a seamless DWT”). And as discussed above, other than generally mentioning the term “non-TCP” in the summary section, the ’802 application does not provide any explanation regarding how its disclosed techniques for sharing idle time information in a TCP options field of a TCP packet during setup of a TCP connection would have extended to an altogether different environment with its own rules regarding connection setup, connection operation, packet structure, and timeout detection. (EX1002 ¶124.)

Moreover, the summary section and the originally-filed claims of the ’802 application do not disclose the combined features set forth in claim 1 of the ’742 patent. (*Id.* ¶125.) The summary section of the ’802 application mentioning “non-TCP” is substantially similar to the originally-filed claims mentioning “non-TCP”. (*Compare, e.g.*, EX1044, 17-18 ¶[0012] *with id.*, 70-71 (claim 25); *id.*, 18 ¶[0013]

with *id.*, 72-73 (claim 28).) The relevant portion of the summary section is reproduced below:

Yet another apparatus is provided comprising: a non-transitory memory storing a network application; and one or more processors in communication with the non-transitory memory, wherein the one or more processors execute the network application such that the network application is configured to operate in accordance with a non-transmission control protocol (TCP) protocol that operates above an Internet Protocol (IP) layer and below a hypertext transfer protocol (HTTP) application layer, the apparatus, when operating in accordance with the non-TCP protocol, configured to: receive, by a second node from a first node, a non-TCP packet during a setup of a non-TCP connection; identify metadata, that specifies a number of seconds or minutes, in an idle time period parameter field in the non-TCP packet, for an idle time period that is detectable by the first node, where, as a result of a detection of the idle time period, the non-TCP connection is subject to deactivation; and determine, based on the metadata, a timeout attribute associated with the non-TCP connection . . .

Still yet another apparatus is provided comprising: a non-transitory memory storing a network application; and one or more processors in communication with the non-transitory memory, wherein the one or more processors

execute the network application such that the network application is configured to operate in accordance with a non-transmission control protocol (TCP) protocol that operates above an Internet Protocol (IP) layer and below a hypertext transfer protocol (HTTP) application layer, the apparatus, when operating in accordance with the non-TCP protocol, configured to: receive idle information for use in detecting an idle time period that results in a non-TCP connection being subject to deactivation; generate, based on the idle information, a non-TCP packet including an idle time period parameter field identifying metadata that is specified in a number of seconds or minutes; and send, from a first node to a second node and for establishing the non-TCP connection, the non-TCP packet to provide the metadata to the second node, for use by the second node in determining a timeout attribute associated with the non-TCP connection

(EX1044, 17-18 (¶¶[0012]-[0013]).)

The summary section of the '802 application, as shown above, does not disclose the above-noted features of claim 1 like “allocat[ing] a first resource for a first [non-TCP] connection” and “in response to detecting, based on the first duration and by the first node during at least a portion of the first non-TCP connection including at least a portion of the first non-TCP connection set up, a first time period of the first type of time period, at least partially clos[ing] the first non-TCP

connection, by releasing, by the first node, the first resource allocated for the first non-TCP connection.” (EX1002 ¶126.) The originally-filed claims of the ’802 application, which are substantially similar to the above summary section, do not disclose the claim 1 features for the same reasons. (*Id.*; *see also id.*, 70-77 (originally-filed claims reciting “non-TCP”))

Here, nothing in the four corners of the specification in the ’802 application demonstrates that the named inventor was in possession of the non-TCP-based method of setting up a non-TCP connection along with the other claim features associated with the “non-TCP” terms as recited in claim 1. (EX1002 ¶127.) Therefore, a POSITA would not have understood that the named inventor had possession of the subject matter set forth in claim 1. (*Id.*)

(3) The ’047, ’522, ’811, ’267, and ’397 Applications Do Not Support the “Non-TCP” Features

The ’047, ’522, ’811, ’267, and ’397 applications are a series of continuation applications from the ’802 application (EX1001, cover, 1:8-34). The specifications of these applications are substantially similar to the specification of the ’802 application other than the summary section and the claims. (*See generally* EXS1051-1055 (showing comparisons between specifications of each of these applications and the ’802 application specification); *see also* EX1045, 80-130, EX1046, 165-217, EX1047, 226-277, EX1048, 26-79, EX1004, 481-534.) And like

the '802 application, other than generally disclosing non-TCP features in the summary section and claiming such features, these applications do not provide any detailed description regarding the “non-TCP” features. (EX1045, 84-86 (¶¶[0012]-[0013]), 137-144 (original-filed claims), EX1046, 168-173 (¶¶[0010]-[0013]), 221-226 (original-filed claims), EX1047, 229-234 (¶¶[0010]-[0013]), 220-225 (original-filed claims), EX1048, 30-34 (¶¶[0010]-[0013]), 83-88 (original-filed claims), EX1004, 485-489 (¶¶[0010]-[0013]), 538-543 (original-filed claims).)¹⁶ (EX1002 ¶¶128-132.)

Moreover, like the '802 application, the summary section and the originally-filed claims of the '047, '522, '811, '267, and '397 applications do not disclose the above-noted features of claim 1 like “allocat[ing] a first resource for a first [non-TCP] connection” and “in response to detecting, based on the first duration and by the first node during at least a portion of the first non-TCP connection including at least a portion of the first non-TCP connection set up, a first time period of the first type of time period, at least partially clos[ing] the first non-TCP connection, by

¹⁶ The summary section of some of the related applications mentions terms such as “separate from TCP” or “different from TCP,” and do not mention the term “non-TCP.” (EX1002 ¶129 n.12.)

releasing, by the first node, the first resource allocated for the first non-TCP connection.” (EX1002 ¶133; EX1045, 84-86 (¶¶[0012]-[0013]), 137-144 (original-filed claims), EX1046, 168-173 (¶¶[0010]-[0013]), 221-226 (original-filed claims), EX1047, 229-234 (¶¶[0010]-[0013]), 220-225 (original-filed claims), EX1048, 30-34 (¶¶[0010]-[0013]), 83-88 (original-filed claims), EX1004, 485-489 (¶¶[0010]-[0013]), 538-543 (original-filed claims).) There is simply no disclosure in these applications of any allocation of resources for a non-TCP connection or partial closure of a non-TCP connection by releasing such a resource based on detection of a time period during at least a portion of the first non-TCP connection including at least a portion of the first non-TCP connection set up, as required by claim 1. (EX1002 ¶134.)

Notably, the first time the features set forth in claim 1 appeared in the ’742 patent family was during prosecution of the ’397 application (which issued as the ’742 patent) by way of an amendment filed January 5, 2021, after the October 23, 2020 filing date of the ’397 application. (EX1004, 208-263.) Thus, the originally-filed disclosures of the ’742 patent family, including the ’742 patent itself, do not disclose the specific features set forth in claim 1. (EX1002 ¶135.)

Therefore, a POSITA would not have understood based on the disclosure of the ’047, ’522, ’811, ’267, and ’397 applications that the named inventor of the ’742

patent would have had possession of the subject matter set forth in claim 1. (EX1002 ¶136; *see supra* Section XI.A.1.b.3.)

Accordingly, a POSITA would not have understood that the named inventor had possession of the claimed invention including the “non-TCP” features at the time the ’397 application was filed because the as-filed specification of the ’397 application and the specifications of the ’742 patent’s priority applications do not support these features. (EX1002 ¶137.)

c) Dependent Claims 65, 73, and 74 Are Not Supported

Claims 65, 73, and 74 depend from independent claim 1. Thus, these claims incorporate the above-discussed features of claim 1, which are not supported by the as-filed disclosure of the ’742 patent and its priority applications. (EX1002 ¶138; *see supra* Section XI.A.1.a–b.) Therefore, claims 65, 73, and 74 do not comply with the requirements of 35 U.S.C. § 112(a) for at least the reasons discussed above with respect to independent claim 1. Moreover, the ’742 patent and its priority applications do not support the above-noted features of claim 1 in the context of the features set forth in the dependent claims. (EX1002 ¶138.)

2. The ’742 Patent and Its Priority Applications Do Not Provide Written Description Support For a “First Connection [That] Does Not Utilize Transmission Control Protocol (TCP)” (Claims 75-77)

Similar to claim 1, claim 75 recites that a “first connection *does not utilize Transmission Control Protocol (TCP)*” and instructions like setting up a

connection between nodes that does not utilize TCP and detecting time periods to partially close a connection that does not utilize TCP. (EX1001, 38:59-39:30; EX1002 ¶¶139-141.) As discussed above with respect to claim 1, the '742 patent and its priority applications do not describe any embodiments involving a connection that does not utilize TCP (i.e., non-TCP) and instructions like setting up a connection between nodes that does not utilize TCP and detecting time periods to partially close a connection that does not utilize TCP in sufficient detail such that a POSITA would have understood that the named inventor had possession of the claimed invention. (*See supra* Section XI.A.1.a–b.)¹⁷ Accordingly, for at least the same reasons discussed above with respect to claim 1, claim 75 and its dependent claims 76-77 do not comply with the requirements of 35 U.S.C. § 112(a).

¹⁷ Patent Owner makes no distinction between how it maps the “non-TCP” terms of claim 1 and the features related to a “connection [that] does not utilize Transmission Control Protocol (TCP)” set forth in claim 75. (*See, e.g.*, EX1017, 9-16 (addressing “non-TCP” terms of claim 1), 172-179 (addressing claim 75 features relating to a connection that “does not utilize [TCP]”).)

3. The '742 Patent and Its Priority Applications Do Not Provide Written Description Support For Detecting a Time Period *During At Least A Portion of the [non-TCP]/[TCP-variant] Connection Setup* (All Challenged Claims

Independent claim 1 of the '742 patent recites:

in response to detecting, based on the first duration and by the first node during at least a portion of the first non-TCP connection ***including at least a portion of the first non-TCP connection set up***, a first time period of the first type of time period, at least partially close the first non-TCP connection, by releasing, by the first node, the first resource allocated for the first non-TCP connection.

(EX1001, 25:25-32.)

Independent claim 75 of the '742 patent similarly recites, in the context of a “first connection [that] does not utilize Transmission Control Protocol (TCP)”

(EX1001, 38:65-67):

in response to detecting, based on the first duration and by the first node during at least a portion of the first connection ***including at least a portion of the first connection set up***, a first time period of the first type of time period, at least partially close the first connection, by releasing, by the first node, the first resource for the first connection.

(EX1001, 39:10-16.)

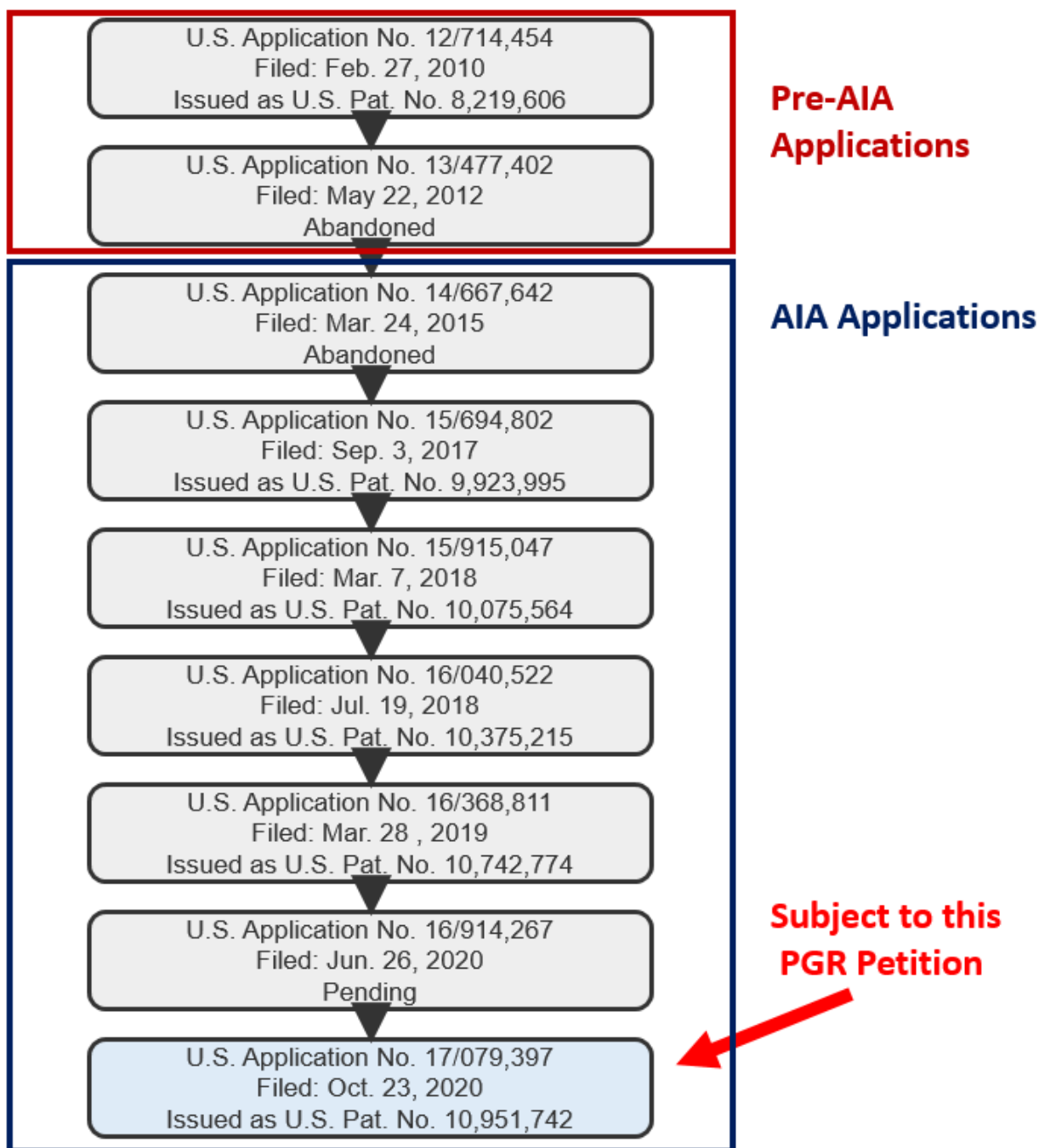
Independent claim 78 of the '742 patent similarly recites, in the context of a “TCP-variant connection”:

based on detecting, by the first node and during at least a portion of the first TCP-variant connection ***including at least a portion of the first TCP-variant connection set up***, a first duration-based first time period of the first type of time period, at least partially closing the first TCP-variant connection, by releasing the first resource allocated for the first TCP-variant connection;

(EX1001, 41:4-11.)

That is, independent claims 1, 75, and 78 recite features relating to (i) detecting a time period during a portion of the connection set up and (ii) at least partially closing the connection based on the detection (generally referred to herein as the “*time period detection during connection setup*” features). The *time period detection during connection setup* feature encompasses scenarios where the time period (e.g., a timeout) is detected and the connection is partially closed during the connection setup time. (EX1002 ¶¶142-146.) This is consistent with Patent Owner’s infringement contentions, which map the *time period detection during connection setup* feature to the accused product applying timeout parameters for an “idle timeout” from a previous connection to a new connection even before the new connection is established. (EX1017, 16-19 (“Remembered transport parameters [from a previous connection] apply to the new connection until the handshake completes.”).)

A POSITA would not have understood that the named inventor of the '742 patent had possession of the claimed invention, including the *time period detection during connection setup* features set forth in claims 1, 75, and 78 at the time the '397 application was filed because the as-filed specification of the '397 application and the specifications of the '742 patent's priority applications (shown below) do not support these features. (EX1002 ¶147.)



(See also *supra* Section II.B.2.)

a) The '397 Applications Does Not Support the Time Period Detection During Connection Setup Features of Claims 1, 75, and 78

The *time period detection during connection setup* features set forth in the challenged claims were introduced in the '397 application for the first time in a preliminary amendment filed December 2, 2020 (i.e., after the application was filed on October 23, 2020). (EX1004, 427-444 (showing preliminary amendments to the claims, title, abstract, and specification).)¹⁸ The preliminary amendments generally track the language of the issued claims. (See, e.g., *id.*, 428 (new claim 21 reciting “in response to detecting, based on the first duration and by the first node during at least a portion of the first non-TCP connection including at least a portion of the first non-TCP connection set up” like challenged claim 1), 438-439 (new claim 47 reciting similar features in “TCP-variant” context like challenged claim 78), 439-440 (new claim 48 reciting similar features for a connection “that is not a [TCP]” like challenged claim 75), 444 (similar amendments to summary section of specification).) (EX1002 ¶148.)

¹⁸ The December 2nd preliminary amendment was not entered by the Examiner, and Applicant subsequently filed new claims including additional new features in an amendment filed January 5, 2021. (EX1004, 208-263; EX1002 ¶148 n.13; *see also supra* Section XI.A.1.b.3.)

While Patent Owner stated that “[n]o new matter has been added” by way of the preliminary amendment (EX1004, 427), the ’397 application does not provide written description support for the *time period detection during connection setup* features set forth in the challenged claims. (EX1002 ¶149.)

The ’397 application discloses detection of time periods *after* a TCP connection is set up (established) for purposes of detecting idle time periods and closing such idle TCP connections.¹⁹ (*Id.*) For example, like the priority applications, the ’397 application discloses by way of its background that “there exists a need for methods, systems, and computer program products for sharing information for detecting *an idle TCP connection.*” (EX1004 (’397 application), 484 (¶[0008]); *see also* EX1048 (’267 application), 27 (¶[0008]); EX1047 (’811 application), 229 (¶[0008]); EX1046 (’522 application), 168 (¶[0008]); EX1045 (’047 application), 83 (¶[0008]); EX1044 (’802 application), 154 (¶[0008]); EX1039 (’402 application), EX1038 (’454 application), 122 (¶[0008]); *see also*

¹⁹ As discussed above in Section XI.A.1, the ’742 patent does not disclose any embodiments related to a non-TCP connection or packet.

supra Section IX.A.)²⁰ A POSITA would have understood that a “TCP connection” is only established *after two nodes exchange initial messages to **set up** the TCP connection*. (EX1002 ¶149; EX1004, 513-514 (¶¶[0082]-[0088] (describing that the idle time period (ITP) header is “exchanged *during setup of [a] TCP connection*” and “RFC 793 describes a ‘three-way handshake’ *for establishing a TCP connection*”)), 505 ((¶[0058] (describing that the ITP header includes idle information specifying a value used to detect an idle TCP connection))).)

The ’397 application discloses examples of timeouts in a TCP connection that may be modified based on the idle information shared during the connection setup. (EX1004, 510 (¶[0075]) (“In an aspect, a TCP keep-alive option, a TCP user timeout, a retransmission timeout, an acknowledgment timeout, and/or another timeout associated with a TCP connection may be modified based on the first idle information.”), 530 (¶[0119])). And while the ’397 application discloses that “[t]he specified ‘three-way handshake’ and other patterns of message exchange for setting up a TCP connection include packets that are considered to be in the TCP connection for purposes of this disclosure,” the ’397 application does not describe when its

²⁰ As noted earlier, the priority ’642 application is directed to different subject matter. (See *supra* Section XI.A.1.b.1.)

disclosed timeouts are detected and does not provide written description support for any detection of such timeouts and partial closure of the connection during the connection setup, as claimed. (EX1002 ¶150.)

As discussed below, a POSITA would have understood that these timeouts described by the '397 application disclosure, such as the TCP keep-alive option, TCP user timeout, and retransmission timeout, are initiated based on data being sent or received, and RFC 793 makes clear that data cannot be exchanged between nodes until after connection establishment (i.e., *after* the connection is set up). (EX1002 ¶151.) Thus, detection of any of these timeouts would occur only after the connection is established since data exchange would occur only after the connection is established. (*Id.*) A POSITA, therefore, would not have understood that the '397 application discloses the claimed invention, including the *time period detection during connection setup* features set forth in claims 1, 75, and 78 at the time the '397 application was filed. (*Id.*)

In particular, the '742 patent family, including the '397 application, relies on RFC 793 for TCP implementation details. (*See, e.g.*, EX1004, 483 (¶[0004]), 505 (¶[0057] (“Detailed information on the operation of TCP is included in RFC 793”)), 513 (¶[0082]), 514, (¶[0090]).) RFC 793 discloses that “[w]hen two processes wish to communicate, their TCP’s *must first establish a connection.*” (EX1008, 9; *see also id.*, 31-32 (describing that “[f]or a connection to be established or initialized,

the two TCPs must first synchronize on each other's initial sequence numbers" and the "three-way handshake" which is also described in the '397 application); EX1001, 513 (¶¶[0082]-[0087]).) RFC 793 discloses that data is sent or received between nodes after the TCP connection is established. (EX1008, 44 ("Once the connection is established data is communicated by the exchange of segments").) Moreover, RFC 793 discloses that a retransmission timeout is initiated based on data being sent or received. (*Id.*, 14 ("***When the TCP transmits a segment containing data, it puts a copy on a retransmission queue and starts a timer***"; when the acknowledgment for that data is received, the segment is deleted from the queue. If the acknowledgment is not received before the timer runs out, the segment is retransmitted."), 45 (describing "An Example Retransmission Timeout Procedure" involving "[m]easur[ing] the elapsed time between ***sending a data octet with a particular sequence number and receiving an acknowledgment that covers that sequence number***").) (EX1002 ¶¶152-153.)

In other words, RFC 793, upon which the '397 application relies for TCP implementation details, does not disclose detecting any time period (let alone a time period associated with closing the TCP connection) during the time the TCP connection is being set up (e.g., during the time the messages in the three-way handshake are being exchanged). (EX1002 ¶154.) As such, a POSITA would have understood that when the '397 application discloses modifying timeout attributes of

a TCP connection, such as the TCP keep-alive option, user timeout, or retransmission timeouts, any detection of time periods associated with such timeout attributes would have been initiated *after* establishment of the connection and not during the connection setup, as claimed. (*Id.* ¶155)

Additionally, independent claims 1, 75, and 78 recite the *time period detection during connection setup* features in the context of a non-TCP connection (claim 1), a first connection that does not utilize TCP (claim 75), and a TCP-variant connection (claim 78). (EX1001, 25:25-32, 39:10-16, 41:4-11.) Thus, the '397 application needs to disclose the *time period detection during connection setup* features for the different connection types in the independent claims. (EX1002 ¶156.) But as noted above, the '397 application is limited to TCP-based embodiments and does not disclose any non-TCP (e.g., a protocol that does not utilize TCP) or TCP-variant embodiments which include the *time period detection during connection setup* features.

Therefore, the as-filed '397 application does not provide written description support for the *time period detection during connection setup* features. (EX1002 ¶157.)

b) The Priority Applications Do Not Support the Time Period Detection During Connection Setup Features of Claims 1, 75, and 78

As discussed above, the disclosures of the priority applications (other than the '642 application), including the pre-AIA and AIA applications, are substantially similar to each other. (*See supra* Sections XI.A.1.b.2-3.) Thus, these priority applications, namely the '454, '402, '802, '047, '522, '811, and '267 applications, do not provide any additional explanation regarding the *time period detection during connection setup* features set forth in the challenged claims. (EX1002 ¶158.) And as discussed above, the '642 application was significantly amended such that it is directed to different subject matter—the '642 application also does not provide any additional explanation regarding the *time period detection during connection setup* features set forth in the challenged claims. (*See supra* Section XI.A.1.b.1; EX1002 ¶158.)

Accordingly, a POSITA would not have understood that the named inventor had possession of the claimed invention, including the *time period detection during connection setup* features at the time the '397 application was filed because the as-filed specification of the '397 application and the specifications of the '742 patent's priority applications do not support these features as set forth in independent claims 1, 75, and 78. (EX1002 ¶159.) Thus, claims 1, 75, and 78 lack written description support.

c) Dependent Claims 65, 73, 74, 76, 77, 83, 86, 159, 167, 168, and 171 Are Not Supported

Claims 65, 73, 74, 76, 77, 83, 86, 159, 167, 168, and 171 depend from independent claims 1, 75, or 78. Thus, because these claims incorporate the above-discussed features of claims 1, 75, or 78, they are not supported by the as-filed disclosure of the '742 patent and its priority applications. (EX1002 ¶160; *see supra* Section XI.A.3.a–b.) Therefore, claims 65, 73, 74, 76, 77, 83, 86, 159, 167, 168, and 171 do not comply with the requirements of 35 U.S.C. § 112(a) for at least the reasons discussed above with respect to independent claims 1, 75, and 78. (EX1002 ¶160.)

4. The '742 Patent and Its Priority Applications Do Not Provide Written Description Support For The “TCP-Variant” Features (Claims 78, 83, 86, 159, 167, 168, and 171)

Independent claim 78 of the '742 patent, reproduced below in relevant part, recites features concerning a “*TCP-variant* connection” and a “*TCP-variant* packet”:

A method, comprising:

at at least a portion of a first node:

...

allocating a first resource for a first *Transmission Control Protocol-variant (TCP-variant) connection*;

generating a first *TCP-variant packet* . . .;

setting up the first *TCP-variant connection*, by sending . . . the first *TCP-variant packet* . . .;

based on detecting, by the first node and during at least a portion of the first *TCP-variant connection* including at least a portion of the first *TCP-variant connection* set up, a first duration-based first time period . . .;

based on detecting . . . a second duration-based second time period . . ., at least partially closing the first *TCP-variant connection* . . .; and

based on detecting . . . a third duration-based third time period, at least partially closing the first *TCP-variant* connection, by releasing the first resource allocated for the first *TCP-variant* connection . . .

(EX1001, 40:54-41:26.)

As discussed below in Section XI.B, the “TCP-variant” terms render claim 78 indefinite because the claim language, specification, and file history do not provide any guidance as to the bounds of the claimed “TCP-variant connection” and “TCP-variant packet” terms with reasonable certainty. (*See infra* Section XI.B; EX1002 ¶¶161-162.)

However, to the extent Patent Owner alleges or the Board determines that the scope of the “TCP-variant” terms encompasses connections and packets that do not utilize TCP at all, then the ’742 patent and its priority applications do not provide written description support for the “TCP-variant” terms. (EX1002 ¶163.) For example, in its infringement contentions, PO maps a “TCP-variant” connection/packet to the same UDP-based protocol connection/packet that it mapped to for the “non-TCP” terms. (*See, e.g.*, EX1017, 252-259 (mapping TCP-variant terms to the UDP-based protocol); *id.*, 9-16 (mapping non-TCP terms to the UDP-based protocol); *see also supra* Section XI.A.1.a (discussing Patent Owner’s mapping of the UDP-based protocol to the non-TCP terms); *see also* EX1029, 75:1-76:17 (PO’s declarant stating: “[A] TCP-variant connection of a TCP-variant protocol or a connection using a TCP-variant protocol might use a different underlying protocol. It might be UDP based instead of IP based.”).) Petitioner disagrees with such an interpretation of the “TCP-variant” terms and submits that the terms are indefinite. (*See infra* Section XI.B; EX1002 ¶163.)

However, under Patent Owner’s interpretation of the “TCP-variant” terms encompassing protocols that do not utilize TCP, claim 78 lacks written description support for all the reasons given above with respect to claim 1. (*See supra* Section XI.A.1.) In particular, as discussed above, the ’742 patent and its priority applications do not provide written description support for the “non-TCP” terms in the context recited in claim 1 such as allocating a resource for a non-TCP connection, generating a non-TCP packet, setting up a non-TCP connection, and detecting time periods in the non-TCP connection. (*Id.*) Claim 78 recites similar features in the “TCP-variant” context such as allocating a resource for a TCP-variant connection, generating a TCP-variant packet, setting up the TCP-variant connection, and detecting time periods in the TCP-variant connection. (EX1001, 40:54-41:26.) Thus, to the extent Patent Owner contends the “TCP-variant” terms encompass “non-TCP” protocols, claim 78 lacks written description support for all the reasons given above with respect to claim 1. (*See supra* Section XI.A.1; EX1002 ¶¶163-165.)

Accordingly, for at least the same reasons discussed above with respect to claim 1, claim 78 and its dependent claims 83, 86, 159, 167, 168, and 171 do not comply with the requirements of 35 U.S.C. § 112(a).

B. Ground 2: Claims 78, 83, 86, 159, 167, 168, and 171 Are Indefinite

“[A] patent’s claims, viewed in light of the specification and prosecution history, [must] inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus, Inc. v. Biosig Instr., Inc.*, 572 U.S. 898, 901 (2014).²¹ The requirement is aimed at providing the public with clear notice about what is being claimed. *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014) (quoting *Nautilus*, 572 U.S. at 909).

²¹ See also Memorandum, *Approach to Indefiniteness Under 35 U.S.C. § 112 in AIA Post-Grant Proceedings* (Jan. 6, 2021), available at

<https://www.uspto.gov/sites/default/files/documents/IndefinitenessMemo.pdf>

(Board applies the *Nautilus* standard when determining indefiniteness in AIA post-grant proceedings). Even if the Board were to apply the pre-*Nautilus* standard (the *In re Packard* standard), where a claim is held to be indefinite when it contains words or phrases whose meaning is unclear in describing the claimed invention, the result would have been the same because, as discussed below, the claims include words or phrases whose meaning is unclear. See *Nippon Suisan Kaisha Ltd. v. Pronova Biopharma Norge AS*, PGR2017-00033, Paper 37 at 11-12, 14 (January 16, 2019), citing *In re Packard* 751 F.3d 1307, 1311 (Fed. Cir. 2014).

Claim 78 of the '742 patent fails to provide such notice as it does not inform a POSITA about the scope of the claimed “TCP-variant” features. Namely, the claim language, specification, and file history do not provide any guidance as to the outer bounds of the claimed “TCP-variant connection” and “TCP-variant packet” terms with reasonable certainty. (*See infra* Section XI.B.1; EX1002 ¶¶166-196.) For example, there are some packets/connections, such as the use of an options field in a TCP packet defined by RFC 793, as disclosed by the '742 patent, that fall within the scope of the “TCP-variant” terms. (*See supra* Sections IX, XI.A, *infra* Section XI.B.2.b.) But the '742 patent provides no guidance regarding the bounds of “TCP” and “variant,” such as what baseline “TCP” to use for measuring the variance (*see infra* Section XI.B.2.a) and what qualifies as a “variant” from TCP including what type of variance and how much (or little) variance from the undefined baseline “TCP” is required to constitute a “TCP-variant” (*see infra* Section XI.B.2.b). Other claims of the '742 patent and claims across the '742 patent family further demonstrate the ambiguity introduced by the “TCP-variant” terms, including the “non-TCP” claims discussed above, as Patent Owner maps both “TCP-variant” and “non-TCP” features to UDP-based protocols that are not TCP at all. (*See infra* Section XI.B.2.c; *see also supra* Section IX.A.1.) Thus, as explained below, because claim 78 fails to particularly point out and distinctly claim the subject matter

regarded as the invention, it is indefinite under 35 U.S.C. § 112(b). (EX1002 ¶¶166-169.)

1. The Claim Language, Specification, and File History Do Not Sufficiently Describe the “TCP-Variant” Features of Claim 78

Claim 78, which is reproduced in relevant part in Section XI.A.4 above, recites the “TCP-variant” term in the context of a “TCP-variant” packet and connection. (EX1001, 40:54-41:26.)

Other than using the term “TCP-variant,” claim 78 and its dependents do not sufficiently describe what is meant by a *variant* of a TCP connection or packet. (*Id.*; EX1002 ¶170.) Nor does the specification provide the requisite clarity.

The '742 patent specification describes features for a TCP (not a TCP-variant). For example, the specification addresses an alleged “need...for sharing information for detecting an idle TCP connection.” (EX1001, 2:48-50.) Indeed, the patent’s “Summary” discloses methods and systems concerning an “idle TCP connection” that refer to a “TCP connection” and “TCP packet.” (*Id.*, 2:54-59.)²² The detailed description does the same. As explained above, the description describes a process for detecting an idle *TCP connection* (not a TCP-variant one). (*Supra* Section VIII; EX1001, FIG. 7, 9:51-65, 12:64-13:3, 13:26-28; EX1002

²² See also n.19.

¶171.) The patent also describes a “TCP packet” including an “ITP header” that “may be included in a packet exchanged during setup of TCP connection” (EX1001, FIG. 8, 14:63-66) that has a configuration “adapted from RFC 793” (*id.*, 15:49-52, FIG. 8). (EX1002 ¶171.)

The **only** place where the specification mentions a TCP variant concept is in the context of the ITP header of a TCP packet:

Those skilled in the art will recognize given this disclosure that ***an ITP header may have other suitable formats and may be included in a TCP packet in structures and locations other than those specified for TCP options in RFC 793.*** An equivalent or analog of an ITP header may be included in a footer of a protocol packet in an extension and/or ***variant of the current TCP.***
(EX1001, 16:55-61; EX1002 ¶172.)

The above cursory disclosure (or any other portion of the specification) does not provide any discussion or details that would inform a POSITA with reasonable certainty as to the scope of a “TCP-variant packet” (e.g., how much variance from a TCP packet is permitted and what types of packets are included within the scope of a TCP-variant packet). (EX1002 ¶173.) Nor does any portion of the specification

provide any details that would inform a POSITA with reasonable certainty as to the scope of a “TCP-variant connection.”²³ (*Id.*)

The file history of the ’742 patent (and its relevant parent applications) also does not offer any assistance in ascertaining what is meant by the claimed “TCP-variant” features, leaving the scope of the TCP-variant claims impermissibly uncertain. (*See generally* EX1004; EX1038-EX1039; EX1043-1048.) If anything, as discussed below, other claims pursued during prosecution (now issued) further

²³ Indeed, the whole concept of what qualifies as a “variant” in the context of the specification leaves questions as to its proper scope. For example, a POSITA would not have been informed with reasonable certainty whether a “variant” of TCP requires a modification of existing functionality from what is done in “the current TCP” (which itself is undefined as discussed below). (EX1002 ¶173 n.17.) A POSITA would not have been informed with reasonable certainty whether a protocol including additional functionality not present in the undefined “current TCP” qualifies as a “variant” of the undefined “current TCP” or an “extension” of the undefined “current TCP.” (*Id.*) Such requisite guidance, which would have informed the scope of the “TCP-variant” features, is altogether missing from the ’742 patent disclosure as discussed below in Section XI.B.2.

demonstrate the indefiniteness of the claimed “TCP-variant” features. (*See infra* Section XI.B.2.c; EX1002 ¶174.)

2. The Intrinsic Record Does Not Inform a POSITA About the Scope of the Claimed “TCP-Variant” Features of Claim 78 With Reasonable Certainty

Claim 78 is indefinite for several reasons. First, the intrinsic record for the ’742 patent does not explain, for the “TCP-variant” features in claim 78, what baseline “TCP” to use from which the “varian[ce]” should be measured. Second, the intrinsic record does not explain what type of (or how much or how little) “variance” from the “TCP” would encompass the claimed “TCP-variant” features. Third, other claims in the ’742 patent further demonstrate the ambiguity introduced by the “TCP-variant” terms and confirm that a POSITA would not be able to ascertain with reasonable certainty the scope of the “TCP-variant” features. (EX1002 ¶¶175-195.)

a) The Intrinsic Record Does Not Inform About the Scope of the [Current] TCP From Which the Claimed TCP-Variant Features Must Be Considered

To understand with reasonable certainty the scope of the claimed “TCP-variant” features, a POSITA would need to understand the scope of the “TCP” from which the variance is based. (EX1002 ¶¶176–180.) Here, while the specification mentions a “variant of the *current TCP*” (EX1001, 16:58-61), the ’742 patent lacks guidance in determining the scope of claim 78 with reasonable certainty because the ’742 patent does not describe what is meant by “current TCP.” (EX1002 ¶176.) Specifically, the ’742 patent specification does not identify what the “current TCP” is, or explain any mechanism on how to identify what is or is not a “current TCP,” and thus in turn, what is a “variant of the current TCP.” (*Id.*)

Rather than identify the “current TCP,” the ’742 patent specification states there are “various implementations” of TCP, with no further discussion or support (EX1001, 1:66-2:2), and also references RFC 793 (*id.*, 2:2-11) to provide details on TCP functionality. (*Id.*, 12:32-33 (“Detailed information on the operation of TCP is included in RFC 793”), 15:49-52, 15:66-67 (“Such other exchanges are not currently supported by the TCP as described in RFC 793.”), 16:28, 16:55-58, 21:37-43.) As such, the specification (and claims) do not inform a POSITA with reasonable certainty as to whether only components/characteristics specified in RFC 793 define the “current TCP” described in the specification and “TCP” in claim 78

(EX1001, 16:55-61, Claim 78 (“**TCP**-variant”)) or whether the “TCP” in “TCP-variant” encompasses any other unspecified implementations of TCP at the time. (EX1002 ¶177.)

Moreover, RFC 793, which is dated September 1981 (EX1008, 1), predates the filing of the application for the ’742 patent by over 39 years. (EX1001, cover.)²⁴ And in addition to the “*various* implementations” of TCP acknowledged by the ’742 patent, TCP implementations were defined by way of other RFC documents published after RFC 793 and before February 2010 (the earliest filing date to which the ’742 patent purports to claim priority), such as RFC 1122 (EX1009) and RFC 3168 (EX1056). (EX1002 ¶178; *see also* EX1059 (excerpt of RFC 793 webpage on IETF website, noting RFC 793 was updated by at least RFCs 1122 and 3168 along with RFCs 6093 (EX1057) and 6528 (EX1058)).) TCP implementations at the relevant time (i.e., before February 2010) also did not have to be fully compliant

²⁴ The Board in the Google -845 IPR, explained that “given that RFC 793 predated the application for the ’995 patent by [at the time] 36 years, it is *not clear* that RFC 793 represents the ‘current’ version of TCP.” Google -845 IPR, Paper 16 at 18. The Board concluded that “on this record, we do not see how defining ‘TCP-variant’ with reference to ‘the current ‘TCP’” is particularly informative.” *Id.*

with any RFC document. (EX1002 ¶178.) Thus, a POSITA would not have been able to reasonably ascertain the bounds and scope of the “TCP” or “current TCP” features described by the ’742 patent with reasonable certainty, which is needed to frame a POSITA’s understanding as to the scope of the claimed “TCP-variant” features recited in claim 78 with reasonable certainty. (*Id.*) For instance, the ’742 patent does not provide any guidance as to whether RFC 793 and/or some other document(s) or source provides the requisite details needed to frame a POSITA’s understanding as to the components/characteristics of the “TCP” in a “TCP-variant connection” or “TCP-variant packet” at the relevant time of the ’742 patent. (*Id.* ¶179.) Indeed, none of these details are explained in the specification, claims, or file history. (*Id.*; *see generally* EX1004; EX1043-1048.)

Accordingly, for at least this reason, claim 78 is indefinite because when viewed in light of the specification and prosecution history, it does not inform a POSITA about the scope of the claimed “TCP-variant” features with reasonable certainty. (EX1002 ¶180.)

b) The Intrinsic Record Does Not Inform About the Scope of Variance Required to Encompass the Claimed “TCP-Variant” Features of Claim 78

In addition to the reasons above, the ’742 patent also does not provide clarity as to *what* variation or how *much* variation from the “[current] TCP” a packet or connection needs to include (or have to be within) such that the packet/connection

is considered to fall within the scope of the “TCP-variant” features of claim 78.
(EX1002 ¶¶181-187.)

The Board considered the meaning of “variant” in “TCP-variant connection” in the Google -845 IPR involving the related ’995 patent (sharing a common specification with the ’742 patent). *See, e.g.*, Google -845 IPR, Paper 16 at 17-19 (October 8, 2020). While the Board applied the plain and ordinary meaning of “TCP-variant connection” as “a connection that varies from TCP” in that proceeding, *id.* at 18, the Board recognized that the specification “provides little guidance as to [the] meaning” of a “TCP-variant connection.” *Id.* at 17; *see also id.* at 17-18 (noting that only the summary section mentions the TCP-variant term in a similar manner as the claims, “thereby providing no more guidance than the claims themselves.”).²⁵ Thus, the Board preliminarily recognized the difficulty in ascertaining the proper scope of the “TCP-variant” terms in the ’742 patent family.

In any event, the Board’s and parties’ application of the plain meaning of the TCP-variant terms in that proceeding (and other pending IPRs addressing “TCP-variant” claims) does not detract from the indefiniteness positions presented here. *See, e.g., Flex Logix Tech. Inc. v. Konda*, PGR2019-00037, Paper 37 at 44 (Mar. 16,

²⁵ *See* n.6.

2021) (finding challenged claims 1-7, 9-15, and 17-19 indefinite); *Flex Logix Tech. Inc. v. Konda*, PGR2019-00042, Paper 35 at 53 (Mar. 16, 2021) (simultaneously finding same challenged claims anticipated and obvious). While anticipation/obviousness may be demonstrated by prior art that discloses one example of a “TCP-variant” packet/connection that includes a known TCP packet/connection implementation with additional structures or characteristics, it is another question altogether as to whether claim 78 (in light of the specification and file history) informs a POSITA as to the full scope of the claimed “TCP-variant” features beyond any one potential example. It does not.

The ’742 patent specification lacks objective guidance regarding what connections and packets would qualify as a “variant” of a [current] TCP connection/packet. (EX1002 ¶181.) While “absolute or mathematical precision is not required, it is not enough ... to identify ‘some standard for measuring the scope of the phrase.’” *Interval Licensing*, 766 F.3d at 1370-71 (quoting *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1351 (Fed. Cir. 2005)). “The claims, when read in light of the specification and the prosecution history, must provide objective boundaries for those of skill in the art.” *Interval Licensing*, 766 F.3d at 1371.

There are simply no objective boundaries in the ’742 patent to inform a POSITA with reasonable certainty as to when a TCP connection is considered a “TCP-variant” versus a [current] TCP in the context of the patent. (EX1002 ¶182.)

The example in the specification that “an ITP header may be included in a footer of a protocol packet” could be considered an “extension and/or variant of the current TCP” (EX1001, 16:58-61) does not inform on the objective boundaries between a current TCP, an extension of the current TCP, or a variant of the current TCP, nor is there any such guidance elsewhere in the specification. (EX1002 ¶182.) Further, the “variant” term does not describe on its face what, where, or which components/characteristics are necessary or absent for a connection/packet to be a “TCP-variant connection”/“TCP-variant packet” in comparison to the other identified forms of TCP-based connections or packets. (*Id.*) And even if that portion of the specification is considered, it does not provide any insight as to the scope of a “TCP-variant connection” as recited in claim 78. (*Id.*)

For instance, even if RFC 793 provides a baseline for the “TCP-variant” terms (which is unclear from the ’742 patent’s disclosure), the intrinsic record still does not inform a POSITA about the full scope of claim 78 with reasonable certainty. (EX1002 ¶183.) The claims, specification, and file history of the ’742 patent do not indicate which portions of RFC 793 a “TCP-variant” connection or packet must comply with or what aspects of a connection/packet causes such connection/packet to vary from the TCP enough to encompass the claimed “TCP-variant” connection/packet. As one example, a POSITA would not have been informed with reasonable certainty whether establishing a “TCP-variant connection” would

require a three-way handshake, a feature that is required for establishing a TCP connection defined by RFC 793. (*Id.*; *see also, e.g.*, EX1008, 31-32; EX1001, 15:49-63.) As another example, a POSITA would not have been informed with reasonable certainty whether a “TCP-variant connection” would require acknowledgment of sent packets and error recovery mechanisms (and which ones), which are features required by the TCP implementation defined in RFC 793. (EX1002 ¶183; *see also, e.g.*, EX1008, 8 (“Reliability” section), 13-14 (section 2.6).) Therefore, the understanding of whether a packet/connection is a “TCP-variant” packet/connection may differ depending on what features and characteristics of a baseline TCP implementation are considered important, e.g., based on application-specific needs and related design parameters—a subjective inquiry for which the ’742 patent provides no guidance or contours.²⁶ (EX1002 ¶183.)

²⁶ The ambiguity in ascertaining the meaning of the claimed “TCP-variant” terms also exists to the extent PO alleges a POSITA would know how to identify a TCP packet/connection or a “variant” of such in context of the ’742 patent by using some software tool that presents a packet/connection’s attributes/characteristics. First, the ’742 patent provides no disclosure to support such a position. Second, even if

The claimed “TCP-variant [packet]/[connection]” limitation is similar to a term of degree that is subjective rather than objective because the claims, specification, and file history do not provide any details concerning the required variance from a TCP packet/connection that would inform a POSITA as to the scope of the “TCP-variant” features with reasonable certainty. *Interval Licensing*, 766 F.3d at 1371; *UUSI, LLC v. United States*, 131 Fed. Cl. 244, 259 (2017). “[C]laims having terms of degree will fail of indefiniteness unless they ‘provide objective boundaries for those of skill in the art’ when read in light of the specification and prosecution history.” *Liberty Ammunition, Inc. v. United States*, 835 F.3d 1388,

considered, such a tool would not make the ultimate determination of whether a packet/connection is a “TCP-variant,” but rather would be left to the subjective view of a POSITA viewing such attributes/characteristics. The ultimate guidance needed to make that determination must come from the ’742 patent (and its intrinsic record). As explained, there are no disclosures in the ’742 patent to guide a POSITA in determining with reasonable certainty what attributes, characteristics, or any other features are needed to exist (or not exist) to identify a packet/communication as “TCP-variant.” (EX1002 ¶183 n.18.)

1396 (Fed. Cir. 2016) (quoting *Interval Licensing*, 766 F.3d at 1370-71.) (EX1002 ¶¶184-185.)

Indeed, the term “variant” lacks a universal meaning, which further confounds the “TCP-*variant*” limitations of claim 78. (EX1002 ¶186.) Put another way, the ’742 patent’s disclosure does not inform a POSITA regarding the minimum or the maximum bounds of the word “variant” in the TCP-variant terms. For example, the court in *Collectis S.A. v. Precision Biosciences, Inc.* held that the term “variant of the wild-type monomer” was indefinite because nothing in the intrinsic record provided any indication as to scope of the term “variant” as it would have been used by a POSITA at the time of the alleged invention—i.e., there was no way to provide a clear delineation between when a monomer is variant or not. *See* 937 F. Supp. 2d 474, 483 (D. Del. 2013). Likewise, here, the intrinsic record of the ’742 patent fails to indicate the scope of “variant” as it would have been used to delineate between a *TCP-variant* packet/connection and a *TCP* packet/connection, and more broadly, what qualifies as a TCP-variant packet/connection and what does not. (EX1002 ¶186.)

Accordingly, for at least this additional reason, claim 78 does not inform a POSITA about the scope of the claimed “TCP-variant” features with reasonable certainty and thus is indefinite. (EX1002 ¶187.)

c) **Other Claims of the '742 Patent and Claims From the '742 Patent's Parent Applications Further Demonstrate the Ambiguity Introduced by the "TCP-Variant" Features**

The "TCP-variant" features were first introduced into the '742 patent family through claims in the '802 application (now the '995 patent). (EX1044, 63-64 (introducing claims with "TCP-variant connection" and "TCP-variant packet").) From there, "TCP-variant" features were introduced in claims in the family of applications leading up to the '397 application, which issued as the '742 patent. (See, e.g., EX1045, 131-137; EX1046, 41-45, 109-112, 218-221; EX1047, 60-62, 136-37, 224, EX1048, 80-83; EX1004, 535-538, 438-439, 234-251.) As a result, the '742 patent now includes claims that introduce additional uncertainty as to how a POSITA could ascertain the scope of the claimed "TCP-variant" features recited in claim 78. (EX1002 ¶¶188-195.)

Specifically, some of the claims pursued during prosecution and now issued in the '742 patent and its family members, including the '774 patent (EX1037), demonstrate the ambiguity regarding the scope of what encompasses the "TCP-variant" features found in claim 78, such as:

- "the TCP-variant connection is *not a TCP connection*" (EX1047, 57 (claim 43));

- “the TCP-variant connection is *not a standard TCP connection*” (EX1037, 25:61-63 (claim 23));
- “the TCP-variant *includes another protocol, other than TCP, that includes a variation of TCP*” (*id.*, 27:26-27 (claim 40));
- “the TCP-variant *includes another protocol, without TCP in its name, that includes a variation of TCP*” (*id.*, 27:28-29 (claim 40));
- “the TCP-variant includes *one or more features of TCP, and one or more features not of TCP*” (*id.*, 27:30-31 (claim 40));
- “the TCP-variant packet includes *one or more features of a TCP packet, and one or more features not of a TCP packet*” (*id.*, 27:32-34 (claim 40));
- “the TCP-variant connection includes *one or more features of a TCP connection, and one or more features not of a TCP connection*” (*id.*, 27:35-37 (claim 40); and
- “the first TCP-variant connection *is not a TCP extension connection that involves a TCP extension*” (EX1001, 45:49-50 (claim 140), 48:23-24 (claim 167), 49:13-14 (claim 170).

(*See also* EX1047, 60-61, EX1004, 187-190; EX1002 ¶189.)

First, the features recited in the claims above are not described in the ’742 patent specification or its family members. (*See supra* Sections VIII, XI.B.1,

XI.B.2.a–b; *see generally* EX1001; EX1002 ¶190.) Second, they raise more questions than answers as to assisting a POSITA in ascertaining the scope of the claimed “TCP-variant” terms with reasonable certainty. (EX1002 ¶190.)

For example, the ’742 patent claims, file history, and specification do not provide details that would inform a POSITA with reasonable certainty as to how a “TCP-variant connection” can be a variant to a TCP connection but also “not [be] a TCP extension connection that involves a TCP extension” as set forth in claims 140, 167, and 170 of the ’742 patent. (*Id.* ¶191.) Similarly, the related patents do not provide details that would inform a POSITA with reasonable certainty as to how a “TCP-variant connection” can be a variant to a TCP connection but also “not [be] a TCP connection” as set forth in claim 22 of the ’774 patent. (*Id.*) Moreover, the interplay between claims 22 and 23 of the ’774 patent raises ambiguities as to the scope of claim 78’s “TCP-variant” features as there is no guidance in the ’742 patent (or the ’774 patent) that informs a POSITA with reasonable certainty as to what is meant by, and what is the difference between, a “standard” TCP connection and a non-standard TCP connection. (*Id.*) Similarly, with respect to claim 40 of the ’774 patent, the ’742 patent family does not provide any guidance to inform a POSITA with reasonable certainty as to what it means to “include[]” another protocol other than TCP that also includes a variation of TCP. (*Id.* ¶192.) Nor does the ’742 patent family provide any guidance to inform a POSITA with reasonable certainty as to

what it means to have (or not have) “TCP” in the “name” of a protocol while still being considered a “variation of TCP,” as alternatively set forth in claim 40 of the ’774 patent. (*Id.*)

Moreover, as noted above, some of the dependent claims recite that “the TCP-variant connection is ***not a TCP connection***” (EX1047, 57 (claim 43)) or “the TCP-variant connection is ***not a standard TCP connection***” (EX1037, 25:61-63 (claim 23)). Therefore, in light of such claims, the “TCP-variant connection” of claim 1 would be broader in scope and could be a “TCP connection” or a “standard TCP connection.” (EX1002 ¶191.) Such an implication (that a “TCP-variant” connection could simply be a TCP connection or standard TCP connection) further underscores the ambiguity of what “TCP-variant” means. (*Id.*)

The “TCP-variant” terms also introduce an undefined outer boundary of the term “TCP-variant” where a connection/packet may vary from TCP so much that it would have been unclear whether it is still a “TCP-variant.” For example, to the extent PO attempts to support the notion that “TCP-variant” somehow encompasses protocols that are not based on TCP (e.g., non-TCP connections or packets like connections and packets based on a UDP-based protocol), that interpretation has no support in the specification of the ’742 patent or any of its parent applications. (*Id.* ¶194.) The indefiniteness of claim 78 based on the unclear scope of the claimed “TCP-variant” terms is further demonstrated by PO mapping a “TCP-variant”

connection/packet to a UDP-based protocol connection/packet (which are not TCP at all). (*See, e.g.*, EX1017, 252-259; *see also* EX1029, 75:1-76:17; EX1002 ¶194 n.19.) Moreover, such a position and interpretation would conflict with the '742 patent's express recitation of "non-TCP" features in other claims, where the "non-TCP" features are similarly mapped to a UDP-based protocol connection/packet. (EX1002 ¶194; EX1001, 25:5-47 (claim 1)); *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008) ("different claim terms are presumed to have different meanings").²⁷

Accordingly, the '742 patent's other claims (and file history pursuing such claims) undermines the ability for claim 78 to inform a POSITA about the scope of the claimed "TCP-variant" features with reasonable certainty, and thus for this additional reason, claim 78 is indefinite. (EX1002 ¶195.)

3. Dependent Claims 83, 86, 159, 167, 168, and 171 Are Not Supported

Claims 83, 86, 159, 167, 168, and 171 depend from claim 78. Thus, these claims incorporate the above-discussed indefinite features of independent claim 78. (EX1002 ¶196; *see supra* Section XI.B.1-2.) Moreover, the dependent claims do

²⁷ To the extent the "TCP-variant" terms are interpreted to encompass non-TCP features, claim 78 lacks written description support. (*See supra* Section XI.A.4.)

not resolve the above-established indefiniteness of independent claim 78. Therefore, claims 83, 86, 159, 167, 168, and 171 do not comply with the requirements of 35 U.S.C. § 112(b) for at least the same reasons as those discussed above with respect to independent claim 78.

XII. THE RELATED LITIGATION PROVIDES NO BASIS FOR DISCRETIONARY DENIAL

The Board should not exercise its discretion to deny institution under 35 U.S.C. § 324(a). *NHK Spring Co., Ltd. v. Intrix-Plex Techs, Inc.*, IPR2018-00752, Paper 8 (Sept. 12, 2018) does not apply here as no trial date has been scheduled in the related litigation. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 3 (Mar. 20, 2020) (precedential) (“*NHK* applies ... where the district court has set a trial date to occur earlier than the Board’s deadline to issue a final written decision in an instituted proceeding.”). The *Fintiv* six-factor test (“*Fintiv* factor(s)”) favors institution. *See id.*, 5-6.

The circumstances of the related litigation are very different from when Patent Owner first filed its complaint in the Western District of Texas (“WDTX”) court asserting the ’742 patent. *Jenam Tech, LLC v. Google LLC*, Case No. 6:21-cv-00271 (“WDTX Case 1”), ECF No. 1 (W.D. Tex. Mar. 17, 2021). The case was recently transferred to the Northern District of California (“NDCA”). WDTX Case 1, ECF

No. 36 (Dec. 1, 2021). The transferred case has been reassigned as Case No. 3:21-cv-09318 (N.D. Cal.) (“NDCA Case 1”).

NDCA Case 1 is expected to be consolidated with another case, Case No. 3:21-cv-07994 (N.D. Cal.) (“NDCA Case 2”), involving the same parties and related patents.²⁸ NDCA Case 2, ECF No. 117 (Dec. 10, 2021). There is currently no schedule ordered in NDCA Case 1 and NDCA Case 2, and thus no trial date is scheduled. As a result of the current circumstances, the *Fintiv* factors weigh against discretionary denial.

For example, the **first *Fintiv* factor** (stay) favors institution because WDTX Case 1 was stayed prior to its recent transfer to the NDCA pursuant to the parties’ joint motion to stay in view of the impending transfer. WDTX Case 1, ECF No. 32 (Oct. 12, 2021); EX1030. And after it was transferred, NDCA Case 1 remains stayed until NDCA Case 2 is consolidated with it. NDCA Case 2, ECF No. 108 (Oct. 22, 2021). Indeed, Google has previously moved to stay the related case (prior to its transfer) pending resolution of IPRs challenging several patents asserted in that case.

²⁸ NDCA Case 2 was also recently transferred to the NDCA from WDTX. *Jenam Tech, LLC v. Google LLC*, Case No. 6:20-cv-00453, ECF No. 104 (W.D. Tex. Oct. 7, 2021).

Jenam Tech, LLC v. Google LLC, Case No. 6:20-cv-00453, ECF No. 102 (W.D. Tex. Sep. 29, 2021). And Google intends to renew its motion to stay upon the filing of this PGR and consolidation of NDCA Case 1 and NDCA Case 2.

The **second *Fintiv* factor** (proximity of trial dates) weighs in favor of institution. As noted above, there is no schedule set in NDCA Case 1 or NDCA Case 2, and thus no trial date is set, which “weighs significantly against exercising [] discretion to deny institution of the proceeding.” *Google LLC v. Uniloc 2017 LLC*, IPR2020-00441, Paper 13 at 35 (July 17, 2020); *Nested Bean, Inc. v. Big Beings USA PTY LTD*, IPR2020-01234, Paper 15 at 14 (Jan. 25, 2021) (same). Given that NDCA Case 1 will likely be consolidated with NDCA Case 2, determining at this time whether the Board’s anticipated FWD date will occur after trial in NDCA Case 1 (or, for that matter, NDCA Case 2) would be speculative.

The **third *Fintiv* factor** (investment in parallel proceedings) also weighs in favor of institution. The parties’ agreed stay in WDTX Case 1 put a hold on further investment in the district court litigation and the recent transfer to the NDCA puts an additional pause to further developments. Most investment in WDTX Case 1/NDCA Case 1 lies in the future. No *Markman* hearing has occurred yet. Discovery will not commence, and dispositive motions will not be due, until after the *Markman* hearing. Additionally, Google’s diligence in filing this Petition less than five months after receiving PO’s narrowed list of asserted claims further weighs against

discretionary denial.²⁹ *Dish Network, L.L.C. v. Broadband iTV, Inc.*, IPR2020-01267, Paper 15 at 20-21 (Jan. 21, 2021); *Fintiv* at 11.

The **fourth *Fintiv* factor** (overlap) is neutral if not in favor of institution. Given the recent transfer and the expected consolidation of NDCA Case 1 with NDCA Case 2, it is likely expert discovery relating to invalidity will not be completed until early-to-mid 2023 and dispositive motions on those issues would be due after that. Accordingly, substantive invalidity issues would not be addressed in the litigation until well past the institution decision and likely very near the time of the Board's expected FWD, given the recent transfer. Therefore, any potential overlap between this proceeding and the district court is minimal and speculative at this time.

Other circumstances (***Fintiv* factor 6**) also favor institution. The Petition presents strong grounds demonstrating the unpatentability of the challenged claims, weighing against discretionary denial. (*See supra* Section XI.) *Western Digital Corp. et al. v. Martin Kuster*, IPR2020-01391, Paper 10 at 14-15 (February 16, 2020). Indeed, the Board has already found challenged claims of the related '995

²⁹ PO initially asserted 50 claims of the '742 patent. (EX1017.) On July 27, 2021, PO narrowed its asserted claims. (EX1031.)

patent as unpatentable in the Google -845 IPR. Google -845 IPR, Paper 33 (Final Written Decision) at 39. The Board has also instituted all of Petitioner's IPRs challenging claims of five other related patents involved in NDCA Case 2. (*See supra* Section II.B.3 (noting institution of IPR Nos. 2021-00627 through -00630 and 2021-00867 through -00870 challenging claims of the '215, '564, '565, '026, and '945 patents).) Patent Owner additionally disclaimed the sole challenged claim in the '774 patent in PGR No. 2021-00082. (*Id.*) Moreover, this petition is the only challenge to the '742 patent before the Board, which is a "crucial fact" favoring institution. *Google LLC v. Uniloc 2017 LLC*, IPR2020-00115, Paper 10 at 6 (May 12, 2020).

While ***Fintiv* factor 5** (same parties) may weigh slightly in favor of denial, the remaining factors favor institution with at most one factor possibly being neutral. Accordingly, based on a "holistic view" of whether integrity of the system and efficiency is best served, institution here is proper. *Samsung Elecs. Co. Ltd. v. Dynamics Inc.*, IPR2020-00505, Paper 11 at 15 (Aug. 12, 2020).

XIII. CONCLUSION

For the reasons given above, Petitioner requests institution of PGR for claims 1, 65, 73, 74, 75, 76, 77, 78, 83, 86, 159, 167, 168, and 171 of the '742 patent, and a finding that these claims are unpatentable based on the above grounds.

Respectfully submitted,

Dated: December 15, 2021

By: Naveen Modi/
Naveen Modi (Reg. No. 46,224)
Counsel for Petitioner

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing Petition for Post Grant Review of U.S. Patent No. 10,951,742 contains, as measured by the word processing system used to prepare this paper, 18,225 words. This word count does not include the items excluded by 37 C.F.R. § 42.24 as not counting towards the word limit.

Respectfully submitted,

Dated: December 15, 2021

By: /Naveen Modi/
Naveen Modi (Reg. No. 46,224)
Counsel for Petitioner

CERTIFICATE OF SERVICE

I hereby certify that on December 15, 2021, I caused a true and correct copy of the foregoing Petition for Post Grant Review of U.S. Patent No. 10,951,742 and supporting exhibits to be served via express mail on the Patent Owner at the following correspondence address of record as listed on PAIR:

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