

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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GOOGLE LLC  
*Petitioner*

v.

JENAM TECH, LLC  
*Patent Owner*

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Case IPR2023-00929  
Patent No. 11,050,856

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DECLARATION OF DR. MICHAEL SMITH

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I, Michael Smith, declare as follows:

**I. INTRODUCTION**

[0001] I am currently an independent consultant.

[0002] This declaration is based on my own personal knowledge. I make this declaration in support of Patent Owner Jenam, LLC in Response to the Petition in IPR2023-00929 regarding U.S. Patent No. 11,050,856 (“Challenged Patent”) before the Patent Trial and Appeals Board.

**II. QUALIFICATIONS AND EXPERIENCE**

[0003] I hold two degrees from Cambridge University: (1) a Bachelor of Arts degree in Electrical Sciences earned in 1978; and (2) a Master of Arts degree in Electrical earned in 1978. I also hold two degrees from Stanford University: (1) a Master of Sciences in Electrical Engineering earned in 1981 and (2) a Doctor of Philosophy (Ph.D.) in Electrical Engineering earned in 1985.

[0004] From 2000–2004, I acted as CTO of a fabless networking semiconductor start-up, iReady, for TCP/IP/RDMA/iSCSI/IPsec networking protocol offload. I was responsible for: the basic technology ideas; recruiting

the engineering team; all aspects of design: architecture and IP, design methodology, emulation, verification; system debug, testing, bringup; and standards work. I developed the iReady patent portfolio. I helped sell iReady and its IP to nVidia in 2004.

[0005] From 2004–2007, I was employed with nVidia, acting as a Chief Architect working in the division that is now the Tegra group. I was responsible, for example, for MCP55, the highest volume nVidia AMD chipset. I was involved in all aspects of systems design: chipset, graphics, memory, peripherals, networking, software (drivers, firmware) from product conception through to high-volume production. I worked with marketing to specify products, with software and hardware engineers on design, and with sales in the field.

[0006] From 2007–2009, I was Chief Architect and CTO of MetaRam, a KPCB fabless semiconductor start-up that built chips to aggregate DRAM for very high capacity DIMMs. I hired the initial MetaRAM team and then managed all of engineering except silicon design. I wrote and filed 30 patents in 6 months and helped sell the MetaRAM IP to Google in

2010.

[0007] From 2009–2010. I consulted Google on IP strategy, IP portfolio development, patent prosecution, and high-value litigation.

[0008] At present, I am involved with two entities. Since 2011, I have acted as Founder and owner of P4TENTS1. This entity consults on all aspects of IP prosecution and litigation, analyzes and values IP and patent portfolios. P4TENTS1 also develops IP including complete patent portfolios. Therefore, I have a deep understanding of patents from a technical perspective.

[0009] Since 2014, and in addition to my work with P4TENTS1, I have worked with Weaved, renamed remote.it as part-time CTO. This team is made up of ex-iReady team members. Through my work, I help this start-up provide networking for the Internet of Things using custom network protocols.

[00010] In addition, prior to 2000, I served in the following capacities:  
(i.) IBM (United Kingdom) Ltd, Hursley, England and IBM T.J. Watson Research Center, New York - Worked on DRAM and analog CMOS ASICs. (ii.) University of Hawaii: Professor. I created and developed the first undergraduate

ASIC program in the US. I also received a National Science Foundation Presidential Young Investigator award from President Ronald Reagan. My principle area of research was hardware for networking and internet protocols. I also advised 45 graduate students. (iii.) Eastman Kodak, New York: I worked to create some of the first CMOS digital camera IC designs. (iv.) University of California, Berkeley: I worked to create the first undergraduate course on IC design. (v.) Xilinx, San Jose: I helped develop the Xilinx University Program and, with NSF, introduced the FPGA into IC design courses worldwide; I helped develop the first FPGA development platform with Stanford and Actel. (vi.) VLSI Technology and Compass Design Automation, San Jose: Chief Scientist; I designed one of the first ASICs using logic synthesis, a Viterbi decoder; architect for the first ASIC cell library for synthesis. (vii.) Apple Computer: I worked in the Advanced Technology Group on ASIC design projects including the Newton. I also developed and gave one of the first telelectures between Stanford, Apple. Developed the DACcafe website including one of the first online textbooks, "ASICs on the Web."

### **III. MATERIALS CONSIDERED**

[0011] I have considered the materials listed in this declaration as well as the Challenged Patent and its prosecution history, as well as related patents. This includes the present Petition, the references cited by Petitioner, Petitioner's expert declarations, and other exhibits cited in this proceeding.

[0012] I am being compensated at my regular and established rate of \$300 per hour. My compensation is not dependent on the outcome of this proceeding.

### **IV. OVERVIEW OF THE '856 PATENT**

[0013] The Challenged Patent describes both explicitly and via an incorporation by reference of its priority applications, including the initially-filed '454 application (published as US20110213820A1 - "original '454 application"), an apparatus and method for detecting a time period in a connection, for the purpose of deactivating/closing such connection. This technique has, among other advantages, one possible advantage of deactivating/closing such connection when the connection is idle.

[0014] In one embodiment, the aforementioned technique is built

on Transmission Control Protocol (TCP). For example, such TCP embodiment involves a packet “header” of a “TCP packet.” However, one or more *other* embodiments are indeed *also* disclosed where the aforementioned technique is built on a protocol that is not TCP. In such *alternate* embodiment and unlike the TCP embodiment that involves a packet “header,” such non-TCP embodiment utilizes a “footer” of a “protocol packet, where such “protocol” is a “variant of ... TCP” “[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” - paragraph [0080] of the original ’454 application-emphasis added]. Further, the specification includes an absolute myriad of other examples of features that vary from TCP, where such non-TCP features are *not* part of RFC 793 (TCP). See, for example, the combination of paragraphs [0002-6], [007-11], [0049], [0054], [0055], [0057], [0069], [0070], [0076], [0080], [0087-88], [0094], [0108], [0123] et al. of the original ’454 application. These disclosures are all consistent with a general theme,



throughout the specification, that *non*-TCP embodiments were contemplated [[“identify portions of the packet according to the *TCP specification* and/or according to a *particular implementation*” paragraph [0115] of the original ’454 application-emphasis added].

[0015] The Challenged Patent discloses that the connection (in which the time period is detected) includes communications *before* the connection is established/set up [‘[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*” (paragraph [0076] of the original ’454 application-emphasis added)]. The original ’454 application discloses a very specific example of a “*time period*” being detected during processing of a received “*packet*” that is specifically disclosed to be “*included in setting up*” a “*connection*” [“a potential *idle time period* may *begin* at some specified point *during* and/or after processing a *received TCP packet*” (paragraph [0101] of the original ’454 application-emphasis added) /

“[the] *received* TCP *packet* may be a packet included in *setting up* the TCP *connection* as described above” (paragraph [0112] of the original ’454 application-emphasis added)]. Even still, the challenged Patent explicitly provides examples of such “deactivat[ion]” that are unique to (i.e. *would only apply to*) “connection” “set up”/”establishment” “[*d*]eactivating the TCP connection may include... *releasing a resource* allocated for ... *activating* the TCP connection.” (paragraph [0108] of the original ’454 application-emphasis added)].

## V. LEGAL STANDARDS

[00016] I am not an attorney. I have been informed regarding certain legal principles. I am not opining on the law, however. I set forth my understanding of the legal principles as they have been explained to me below.

[00017] I have been informed that claim construction and patentability is generally analyzed from the perspective of a person or ordinary skill in the art at the time of the invention (“POSITA”).

[00018] I understand that the POSITA is a hypothetical person who

is presumed to have known the relevant art at the time of the invention. I understand that factors that may be considered in determining the level of ordinary skill in the art may include: (1) type of problems encountered in the art; (2) prior art solutions to those problems; (3) rapidly with which innovations are made; (4) sophistication of the technology; and (5) educational level of active workers in the field.

[00019] I understand that the Petitioner has adopted the formulation that a person of ordinary skill in the art “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” and that “[m]ore education can supplement practical experience and vice versa.” Petition, pp 8-9. Based on my education and professional experience in the field of the claimed invention, I am familiar with the level and abilities of a POSITA. I had at least the qualification of a POSITA under this definition in February of 2010. I meet these qualifications today, as well. My opinions and analysis herein are from the perspective of the POSITA as defined by

Petitioner.

[00020] I have been informed that claim terms are to be given their plain and ordinary meaning as a POSITA would have understood them at the time of the invention when read in light of the claims and in view of the specification and prosecution history. I have been informed that there are two exceptions to this general principle. I have been informed that a patentee can choose to expressly define a term, and that this is called lexicography. I have also been informed that a patentee can choose to disclaim a particular meaning of a term. I have been informed that both lexicography and disclaimer must be clear and unmistakable.

[00021] I have also been informed that there is a doctrine known as the doctrine of claim differentiation in which different claim language is presumed to have a different meaning. Similarly, I am informed that under this doctrine, a dependent claim is narrower in scope than the claim it depends from, and that accordingly, the claim it depends from is presumed to be broader in scope. I am informed that therefore a dependent claim can help inform a POSITA as to the meaning of a term

in the claim from which it depends.

[00022] I have been informed that a petitioner must clearly set forth the basis for its challenges in the petition. A petitioner may not rely on the Board to substitute its own reasoning to remedy deficiencies in a petition.

[00023] I have been informed that to make a prima facie showing of obviousness, a petition must, among other requirements, demonstrate that the cited references disclose each element of a challenged claim.

[00024] I have been informed that Petitioner also has the burden to show there would have been some motivation to combine the asserted references, and that a POSITA would have had a reasonable expectation of success in making such a combination. In other words, obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. Further, even if individual modifications or choices were obvious, a petition must explain why making all of the changes at once would have been obvious. I understand that such secondary considerations include: a long-felt need,

commercial success, unexpected results, praise of the invention, licensing, copying, failure of others, and skepticism by experts.

[00025] It is also my understanding that hindsight analysis is inappropriate; obviousness must be measured at the time the invention was made. Consequently, a petitioner may not use the patent as a roadmap. In other words, a petition must demonstrate a rationale to combine prior art references without relying on the patent disclosure itself.

[00026] I have been informed that a combination of elements in a patent claim may be obvious when all of those elements were known in the prior art and there was a reason for a POSITA to combine or modify the prior art to obtain the elements as claimed, with no change in their respective functions. Furthermore, I understand that a patent claim would not be obvious if a proposed modification would render the prior art unsuitable for its intended purpose or if the proposed modification would change the principle of operation of the prior art.

## **VI. OPINIONS**

[00027] In my opinion, Petitioner has not demonstrated that a POSITA would have found the challenged claims obvious in view of Morris and SIP.

### **a) Petitioner’s First Challenge (regarding the so-called “non-TCP” term)**

[00028] Petitioner Google challenges the Challenged Patent by arguing that its priority applications, including the initially-filed U.S. Patent Application No. 12/714,454 application, published as US2011/0213820-A1 (“original ’454 application”-EX1038), do not provide written description support for certain claim language of the Challenged Patent that includes the so-called “non-TCP” term [“the first packet is not a synchronize (SYN) packet, and is for use in a protocol: that is not TCP, and that is not a TCP extension”]. In particular, for the remaining portions of the body of this briefing, I will not reference the terms (e.g. “non-TCP,” “TCP-based,” etc.) that Petitioner used to describe the claim language and specification support, since the challenged claims of the Challenged Patent do not mention such phraseology. Turning to the actual claim language in

question, the Challenged Patent requires a “the first packet ... is for use in a protocol: that is not TCP, and that is not a TCP extension” (the “disputed TCP phrase”). In my opinion, Petitioner does not take issue with support for the remaining claim limitations, and even admits support therefor (for example, “Morris discloses and/or suggests the features recited elements 1.a-c, 1.e(1), 1.f(1), 1.f(3)-(4), and 1.h” (page 12 of Petition), ‘Morris discloses a hardware device 100 (“apparatus”)’ (page 15 of Petition), “Morris discloses this limitation.” (page 18, 19 of Petition), “Morris discloses that the one or more processors execute the instructions set forth in claim elements 1.d-1.h” (page 20 of Petition), and ‘Morris discloses negotiating the value of an idle time period (ITP) during connection setup and modifying timeout attributes for the established connection based on the negotiated ITP to detect timeouts.’ (page 25 of Petition)).

[00029] In my opinion, Petitioner’s arguments do not involve a typical written description support challenge, where there is dispute whether a claim phrase has any written description



support whatsoever. Indeed, as admitted by Petitioner at page 69 of its Petition, the original '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*” (emphasis added).

Further, as acknowledged by Petitioner on page 43 of its Petition, the “protocol: that is not TCP, and that is not a TCP extension” of the disputed TCP phrase is established, in the dependent claims of the Challenged Patent, to encompass the “TCP”-“variant” protocol explicitly present in both the claims and the original '454 application. Table 1 below summarizes this:

Table 1

<u><b>Disputed TCP Phrase</b></u> (emphasis added)	<u><b>Dependent Claims in Challenged Patent that Tie Disputed TCP Phrase to Specification Support</b></u> (emphasis added)	<u><b>Excerpts of Original '454 Application that Support Disputed TCP Phrase &amp; Dependent Claims</b></u> (emphasis added)
“ <i>protocol: that is not TCP, and that is not a TCP extension</i> ”	39. The apparatus of claim 17, wherein at least one of: ...the <i>protocol</i> includes a <i>TCP-variant protocol</i> ...	“[a]n equivalent or analog of an ITP header may be included in a footer of a <i>protocol</i> packet in an

	the <i>protocol</i> includes <i>one or more features of TCP</i> , and <i>one or more features <u>not</u> of TCP</i> ;	<i>extension</i> and/or <i>variant</i> of the current <i>TCP</i> ” - Paragraph [0080]
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[00030] Thus, in my opinion, the notion that there is *at least some support* for the claimed “protocol that is not Transmission Control Protocol (TCP)” is *not* disputed. This is clear because, in my opinion, as acknowledged by Petitioner, the original ’454 application explicitly discloses a “variant” of “TCP” (which is not TCP) and, in fact, the original ’454 application goes to great lengths to explicitly distinguish RFC 793 (TCP) and further discloses features (which are claimed in the Challenged Patent) that are *not* part of RFC 793 (TCP). In fact, in my opinion, the USPTO confirmed that such disclosed features (in the claims) are not TCP, when it considered RFC 793 (TCP) as prior art, and granted the Challenged Patent. Again, there is no dispute that there is at least some support for the disputed TCP phrase.

[00031] Instead, in its Petition, Petitioner takes aim at the alleged breadth of scope of the disputed TCP phrase, and argues that this breadth of scope is not supported by the original ’454

application. To set the stage for its arguments, Petitioner contends, at page 63 of the Petition, that the “[c]laim...encompasses scenarios where the first packet is used in a protocol that *does not utilize TCP at all*” (emphasis added). In concurrently-pending, related proceedings (e.g. page 64 of IPR2023-00926 & page 70 of IPR2023-00927), Petitioner makes arguments similar to those in this Petition based on a lack of certain claim limitations [the claim “broadly recites setting up a first connection (e.g., between the first and second node) *without specifying the type of connection*”-emphasis added].

**i) Petitioner is Mis-Interpreting the Claims and their Breadth**

[00032] First and foremost, I disagree with Petitioner’s underlying assumption that the “[c]laim...encompasses scenarios where the first packet is used in a protocol that *does not utilize TCP at all*” (emphasis added). To the contrary, in my opinion, the claims themselves prove otherwise, by including other claim elements that encompass, broadly at a high-level, at least one or more features of TCP. It is important to note that, while the cited claim elements are broad enough to encompass at

least one or more features of TCP, such claim elements are also broad enough to cover other non-TCP protocols that use features similar, but not necessarily identical, to those of TCP. For example, the excerpt below from the original '454 application (and the Challenged Patent) acknowledges that prior art RFC 793 (TCP) requires an exchange of at least one “packet” to “establish” a “connection”:

“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*. The synchronization requires each side to send it’s own initial sequence number and to receive a confirmation of it in acknowledgment from the other side. Each side must also receive the other side’s initial sequence number and send a confirming acknowledgment.” (paragraph [0076] of the original '454 application)

[00033] Further, Claim 1 (for example), encompasses (using broad claim elements) an apparatus to “set up a first connection, by sending, from the apparatus to a node, the first packet.” Thus, in my opinion, the claims include claim elements that do encompass (albeit broadly) at least one or more features of TCP. Specifically, the claimed “packet” to “set up a first

connection” are articulated broad enough to cover one or more features of the aforementioned “handshake” for “establishing a TCP connection” required by RFC 793 (TCP). In other words, even if the disputed TCP phrase alone, in a vacuum, has a breadth that encompasses “a protocol that does not utilize TCP at all” (emphasis added), Claim 1, in its entirety and inclusive of the *other* claim elements noted above, does *not* encompass “a protocol that does not utilize TCP at all” (emphasis added). Again, this is because such other claim elements encompass, broadly at a high-level, at least one or more features of TCP.

[00034] In my opinion, the above establishes that Petitioner’s underlying assumption that the “[c]laim...encompasses scenarios where the first packet is used in a protocol that does not utilize TCP at all” (emphasis added) is not true. In my opinion, Petitioner is misinterpreting the claims. Notably, when addressing the breadth of scope of the disputed TCP phrase, Petitioner does not apply the actual disputed TCP phrase. Instead, in my opinion, Petitioner imports additional limitations when characterizing the “scope” of the disputed

TCP phrase (i.e. “protocol that ~~[[is not]]~~does not utilize

Transmission Control Protocol (TCP) at all”).

**i) The Alleged Full Breadth of Scope of the Challenged Claims is Clearly Supported**

[00035] With the above said, even if one assumes that Petitioner’s claim interpretation is correct (it is not) such that the “[c]laim...encompasses scenarios where the first packet is used in a protocol that does not utilize TCP at all” (emphasis added), in my opinion, Petitioner’s arguments (as to an alleged lack of support) nevertheless fail. Specifically, as set forth above, in my opinion, the above-cited claim/specification citations make it clear that the disputed TCP phrase is intended to be supported by the “variant” of “TCP” disclosure (“TCP-variant disclosure”) cited above. Further, the specification includes a myriad of examples of features that vary from TCP, where such features are not part of RFC 793 (TCP). See, for example, the combination of paragraphs [0002-6], [007-11], [0049], [0054], [0055], [0057], [0069], [0070], [0076], [0080], [0087-88], [0094], [0108], [0123] etc. of the original ’454 application. These

disclosures are all consistent with a general theme, throughout the specification, that non-TCP embodiments were contemplated (“identify portions of the packet according to the *TCP specification* and/or according to a *particular implementation*” paragraph [0115] of the original ’454 application-emphasis added).

[00036] As discussed below, in my opinion, when Petitioner previously complained about the alleged *indefiniteness* of the *boundless claim scope* of the TCP-variant claim limitation, Petitioner admitted that the scope of the TCP-variant disclosure is similarly *boundless*. That shows Petitioner recognized there is sufficient support for the disputed TCP phrase, even if the disputed TCP phrase was found to encompasses scenarios where the first packet is used in a protocol that *does not utilize* TCP *at all*, as now argued by Petitioner. I also understand that the Board agreed with the principle that the “TCP-variant” phraseology is *not* limited to any “slight” variations.

[00037] Thus, in my opinion, to resolve the support issue at hand, one need only look to Petitioner’s own admissions, and the

Board's guidance, that clearly establish that the original '454 application clearly evidenced that the inventor had possession of any "protocol," regardless as to the amount of variation from TCP. As set forth below, in my opinion, this is evidenced by the fact that, in the original '454 application, Patent Owner did not put any constraints (e.g., a maximum constraint, etc.) on the amount of "varia[tion]" from "TCP" disclosed in the original '454 application. Thus, in my opinion, Patent Owner did not set forth a limit to the amount of "varia[tion]" from "TCP," and did not exclude large (or even complete) "varia[tions]" from "TCP." Both Petitioner and the Board agreed with this notion in previous proceedings.

[00038] Starting with Petitioner itself, in my opinion, Petitioner has affirmatively admitted that Patent Owner did not put any "maximum" bound on an amount of the disclosed "variance" from "TCP":

'the...disclosure does not inform a person of ordinary skill in the art *regarding* the minimum or *the maximum bounds of the word "variant"* in the TCP-variant terms' (paragraph 144. Of Ex. 1002,



PGR2021-00082-emphasis added).

‘the *intrinsic record* does *not provide* guidance to inform a person of ordinary skill in the art with reasonable certainty as to what type of (or *how much*) “variance” from the “TCP” would encompass the claimed “TCP-variant”’ (paragraph 128. Of Ex. 1002, PGR2021-00082-emphasis added).

[00039] Further, in my opinion, the Board agreed with the notion that there is no (“slight”) limit to the level of “variance” when it comes to the disclosed “variant” of “TCP.” Specifically, at pages 17-18 of its Institution Decision in a related proceeding (IPR2020-00845- Ex. 2003), the Board summarized Petitioner’s attempt to quantify the “variation” from “TCP” as being limited to “slight” and then the Board rejected such characterization, while adopting Patent Owner’s notion that the file history provides no such limit (in “variation” from “TCP”) in the context of “TCP-variant” (which is encompassed by the disputed TCP phrase):

‘Petitioner argues that “TCP-variant” encompasses *slight* variations from TCP. ...

Patent Owner argues that “TCP-variant connection” means “a protocol connection where the protocol of the connection *varies from TCP*.” ...

In our analysis below, we apply the plain and ordinary meaning of “TCP-variant connection,” i.e., *a connection that varies from TCP*” (emphasis added).

[00040] In conclusion, in my opinion, Petitioner’s admissions as to the *boundless scope* of the TCP-variant *disclosure* is an acknowledgement that such TCP-variant *disclosure* in the original ’454 application is sufficient to support the disputed TCP phrase (which encompasses TCP-variant), even if the claims (including the disputed TCP phrase) were found to encompass scenarios where the first packet is used in a protocol that *does not utilize* TCP *at all*. And, importantly, in my opinion, the Board agreed, in principle, with the notion that the TCP-variant phraseology is not limited to any “slight” variations of TCP.

**a) Petitioner’s Second Challenge (regarding the connection “set up” phrase)**

[00041] In Petitioner’s second written description support challenge, Petitioner takes aim at the following claim language of the Challenged Patent and argues that it allegedly lacks support:

“in response to *detecting*, based on the first duration and by the apparatus *during 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*” (emphasis added).

[00042] To support its argument, Petitioner states, at Page 82 of its Petition, that the application that lead to the Challenged Patent “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.” While this is true, in my opinion, it is also true that the application that lead to the Challenged Patent discloses: detection of time periods *during* TCP connection set up, and at least partially closing a connection *during* TCP connection

set up. To be clear, in my opinion, the Challenged Patent discloses detection of time periods both *before* and *after a* TCP connection is set up (established) for purposes of detecting idle time periods and closing such idle TCP connections.

[00043] This disclosure, in my opinion, is supported by a clear indication that 1) detection of a time period can occur “in” or “via” a “connection,” and 2) such “connection” *includes* connection “set up.” As for 1) above, see, for example, the excerpts below:

“With reference to the method illustrated in FIG. 2, block 202 illustrates the method includes receiving, by a first node, first idle information for *detecting a first idle time period* during which no TCP packet including data in a first data stream sent *in the TCP connection* by a second node is received by the first node” (paragraph [0052] of the original ’454 application-emphasis added).

“*detecting a time period* in the idle time period during which first node 602 has received acknowledgment for all data sent *via the TCP connection* in the TCP data stream by first node 602 to second node 604.” (paragraph [0092] of the original ’454 application-emphasis added).

“a packet from second node 604 included *in the TCP connection* is an event that, in various aspects, may directly and/or indirectly *indicate the beginning of a potential idle time period*” (paragraph [0101] of the original ’454 application-emphasis added).

[00044] As for 2) above, see, for example, the excerpts below that disclose that a “connection” includes packets that are exchanged for *setting up* such “connection”:

“In an aspect, an ITP *header* may be included in a *packet* exchanged *during setup* of TCP *connection*. ... 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*.” (paragraph [0076] of the original ’454 application-emphasis added).

[00045] Thus, taking 1) and 2) above together, in my opinion, there is clear disclosure of detecting a time period in and via a “connection,” where such “connection” is explicitly set forth to include the “set up” thereof.

[00046] In fact, in my opinion, the two excerpts below from the original ’454 application, when taken together, provide a

very specific example of a “*time period*” being detected during processing of a received “*packet*” that is specifically disclosed to be “*included in setting up*” a “*connection.*”

“a potential *idle time period* may *begin* at some specified point *during* and/or after processing a *received TCP packet*” (paragraph [0101] of the original ’454 application-emphasis added)

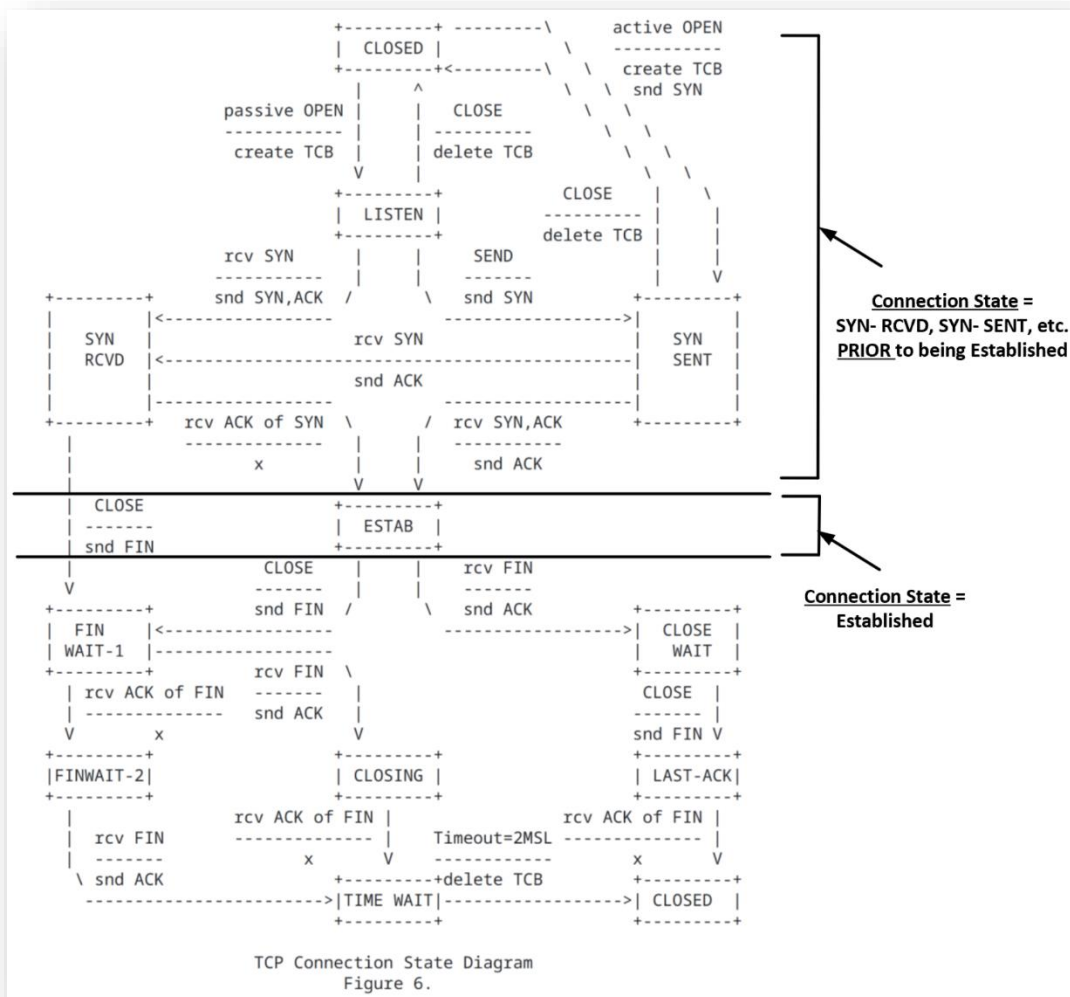
“[the] *received TCP packet* may be a packet included in *setting up* the TCP *connection* as described above” (paragraph [0112] of the original ’454 application-emphasis added)

[00047] At Page 83 of its Petition, Petitioner argues that “[a] POSITA would have understood that a “TCP connection” is ONLY established **after two nodes exchange initial messages to set up the TCP connection**” (bold added by Petitioner, underlined CAPS added by Patent Owner). While Petitioner is correct that a connection is only “*established*” after “set up,” it is also true that such “established” state is merely one of many states of a connection. In particular, in

my opinion, a connection also includes states that exist *before* the connection reaches an “established” state. For example, the connection includes “set up” states *prior* to being “established,” which, therefore, exist for the connection *before* the connection is “established.”

[00048] Importantly, in my opinion, the above notion (that connection “set up” states are part of the connection) is consistent with RFC 793 that clearly discloses a number of different connection states (e.g. LISTEN, SYN-SENT, SYN-RECEIVED, etc.) that exist *before* the “connection” is “established”. See annotated excerpts from RFC 793 (TCP) below:

"A connection progresses through a series of states during its lifetime. The states are: LISTEN, SYN-SENT, SYN-RECEIVED, ESTABLISHED, FIN-WAIT-1, FIN-WAIT-2, CLOSE-WAIT, CLOSING, LAST-ACK, TIME-WAIT, and the fictional state CLOSED." Page 21 of RFC 793 (emphasis added).



[00049] Thus, in my opinion, as shown above, RFC 793 considers pre-establishment “states” (i.e. that exist *before* the connection is “established”) to still be considered “states” of the “connection.” Thus, in my opinion, Patent Owner’s use of the term “connection” to be inclusive of the “set up”



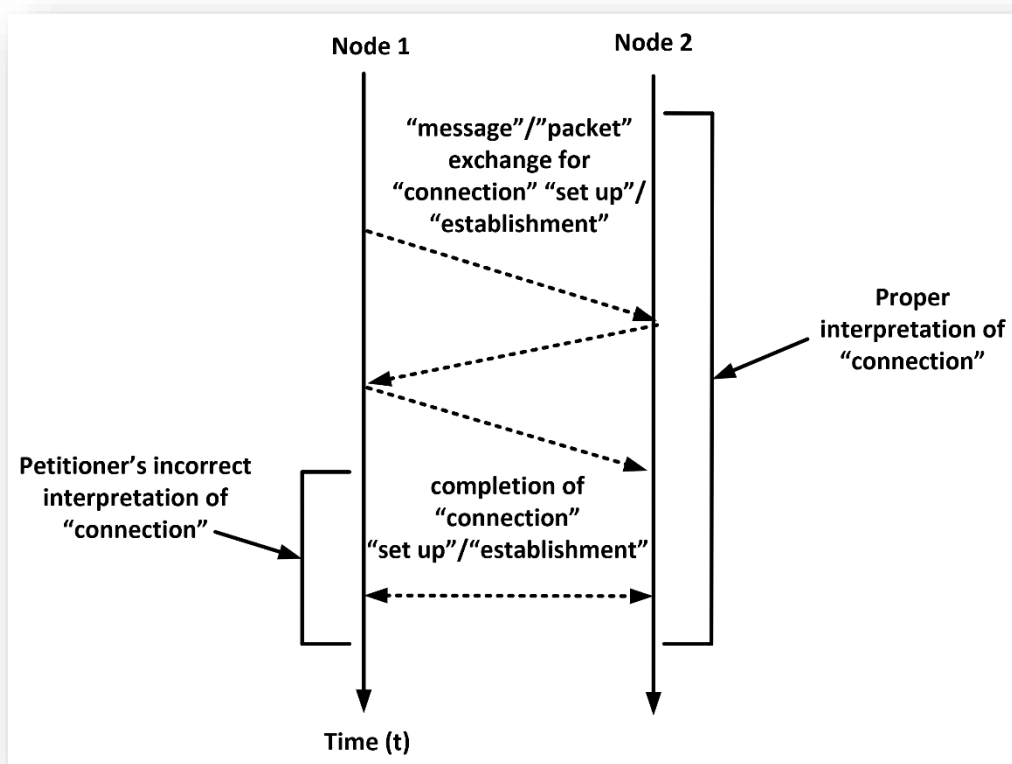
thereof (i.e. before it is “established”) is indeed consistent with the understanding of a POSITA. For example, as is also confirmed by Figure 6 above from RFC 793, *pre*-connection-establishment “CLOSE” operations may be initiated to reach the top “CLOSED” state” *before* connection-establishment. Thus, a POSITA would have also considered the claimed “at least partially closing the first connection” to be inclusive of connection closures that occur *before* connection-establishment.

[00050] Even if Petitioner argues that Patent Owner used the term “connection” contrary to how a POSITA would (which it did not), I have been informed that Patent Owner is indeed permitted to act as its own lexicographer. To act as their own lexicographer, I have been informed that an applicant must clearly set forth a special definition of a claim term in the specification that differs from the plain and ordinary meaning it would otherwise possess. ... “the inventor’s intention, as expressed in the specification, is regarded as dispositive.”

[00051] This, in my opinion, is what happened in this application,

when the inventor stated that “packets [for setting up a TCP connection] ... are *considered to be in the TCP connection for purposes of this disclosure*” (emphasis added). To be clear, in my opinion, by virtue of the above definition, the inventor is explicit in his intent that the “connection” includes connection “set up” messages/packets, as would be understood by a POSITA (in view of RFC 793 et al.). To put another way, the connection “set up”/”establishment” process is considered, for the purposes of this disclosure, to be “in” (e.g. part of) the “connection” (and thus subject to detection of time periods, as explicitly disclosed). This is illustrated in Figure 1 below.

Figure 1



[00052] This fact, in my opinion, is not only established by the above lexicographic statements in the specification, but also in the claims themselves, when such claims reference “at least a portion of the connection including at least a portion of the connection set up” (emphasis added).

[00053] After acknowledging the above-cited excerpt (but, *without* acknowledging its role in lexicography), Petitioner then argues, at page 84 of its Petition, that the application that

lead to the Challenged Patent “does not describe when its disclosed timeouts are detected.” This is not true. As mentioned earlier, in my opinion, the Challenged Patent defines a “received TCP packet” as one that may be included in setting up a connection [“[the] *received TCP packet* may be a packet included in *setting up* the TCP *connection* as described above” (paragraph [0112] of the original ’454 application-emphasis added)]. Further, the Challenged Patent explicitly states that the “received TCP packet” starts detection of an “time period” [“a potential *idle time period* may *begin* at some specified point *during* and/or after processing a *received TCP packet*” (paragraph [0101] of the original ’454 application-emphasis added)]. These excerpts, in combination, in my opinion, make it clear that the inventor had possession of time period detection during connection setup, such that time period detection is *not* limited to data transmission after connection “establishment”. For example, the specification excerpts cited in this paragraph, in my opinion, refute Petitioner’s “data”-related arguments that span the bottom of page 84 through of the top of page 85 of

the Petition. Further, it is noteworthy that the original '454 application does indeed disclose the exchange of “data” (e.g. meta-data, etc.) during connection setup [“ITP data field 826 in FIG. 8 may include and/or otherwise identify metadata for the first idle time period. For example, an ITP data field in a packet may include and/or otherwise identify one or more of a duration of time for detecting an idle time period...” paragraph [0081] of the original '454 application-emphasis added].

[00054] Despite the above, Petitioner contends, at page 84 of its Petition, that the application that lead to the Challenged Patent “does not provide written description support for any detection of such timeouts and partial closure of the connection during the connection setup.” I disagree. The application that lead to the Challenged Patent, in my opinion, explicitly provides examples of such closure that are unique to (i.e. *would only apply to*) “connection” “set up”/”establishment” [“*[d]eactivating the TCP connection* may include... *releasing a resource* allocated for ... *activating* the TCP connection.” (paragraph [0109] of the

original '454 application-emphasis added)]. Clearly, “*activating*” a “connection” can *only* happen *before* the connection is even “set up”/”established.” Thus, in my opinion, the disclosure of “releasing a resource” for such connection “activat[ion]” is indisputable evidence that the inventor not only had possession of time period detection during connection setup (as established in the previous paragraph), but also closure of such “connection” (in response to time period detection *during* the “connection” “set up” process), *before* the connection is even “set up”/”established.”

[00055] The above written description support is summarized in Table 3 below.

Table 3

<u><b>Disputed TCP Phrase</b></u> (emphasis added)	<u><b>Excerpts from Specification that Support Disputed TCP Phrase &amp; Dependent Claims</b></u> (emphasis added)
“in response to <i>detecting</i> , based on the first duration and by the apparatus <i>during at least a</i>	“In an aspect, an <i>ITP header</i> may be included in a <i>packet</i> exchanged <i>during setup</i> of TCP <i>connection</i> . ... The specified “three-way handshake” and other patterns of message exchange <i>for setting up a TCP connection</i> include <i>packets</i> that are considered <i>to be in the TCP connection for</i>

<p><i><b><u>portion of the first connection set up</u></b>, a <b><u>first time period</u></b> of the first type of time period, ...”</i></p>	<p><i><b><u>purposes of this disclosure.</u></b>” (paragraph [0076] of the original ’454 application-emphasis added)</i></p> <p><i>“[the] <b><i>received</i></b> TCP <b><i>packet</i></b> may be a packet included in <b><u>setting up</u></b> the TCP <b><u>connection</u></b> as described above” (paragraph [0112] of the original ’454 application-emphasis added)</i></p> <p><i>“a potential <b><i>idle time period</i></b> may <b><i>begin</i></b> at some specified point <b><i>during</i></b> and/or after processing a <b><i>received</i></b> TCP <b><i>packet</i></b>” (paragraph [0101] of the original ’454 application-emphasis added)</i></p>
<p><i>“... <b><i>at least partially close</i></b> the first connection, ...”</i></p>	<p><i>“[d]<b><i>eactivating</i></b> the TCP connection may include... <b><i>releasing a resource</i></b> allocated for ... <b><i>activating</i></b> the TCP connection” (paragraph [0109] of the original ’454 application-emphasis added)</i></p>

[00056] Petitioner concludes its arguments, at page 85 of its Petition, by pointing to RFC 793 and alleging that “RFC 793, upon which the ’824 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). ” This is, in my opinion, irrelevant. That is, while the Challenged Patent does incorporate RFC 793 by reference, what RFC 793 does **not** disclose is irrelevant to this written description support challenge. What matters, in

my opinion, is what the Challenged Patent *does* disclose. As set forth above, in my opinion, there is clear written description support for the claims and, to the extent that any such disclosure is missing from RFC 793, that fact is just further evidence of the patentability of the claims in the Challenged Patent. For example, Petitioner's arguments at the top of page 86 of its Petition have already been addressed above because, as admitted by Petitioner, "the disclosures of the priority applications (other than the '642 application) are substantially similar to each other."

[00057] For the reasons above, in my opinion, Petitioner's second written description challenge should be rejected.

**a) Petitioner's Third Challenge (combination of previous elements)**

[00058] Petitioner concludes by arguing, very briefly, that the Challenged Patent would "not be entitled to priority unless both these features are properly supported working together as there is no support for a time period detection during the connection setup in a non-TCP connection." To support that notion, Petitioner only cites the "reasons stated above." In response, I refer to the abovementioned citations (that are



resident in the *same* disclosure), as evidence that Petitioner's  
“reasons stated above” fail, in my opinion, to establish any  
lack of written description support.

### **RESERVATION OF RIGHTS**

[00059] My opinions are based upon the information that I have considered to date. I reserve the right, however, to supplement my opinions in the future to respond to any arguments raised by Petitioner and to consider new information that becomes available to me.

[00060] I declare under the penalty of perjury that all statements made in this Declaration are true and correct.

By: /s/ Michael Smith  
DR. Michael Smith