

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,

Petitioner,

- vs. -

CORRIGENT CORPORATION,

Patent Owner.

Case IPR2023-00447

U.S. Patent No. 9,118,602

REPLY DECLARATION OF SAMRAT BHATTACHARJEE, PH.D.

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I, Samrat Bhattacharjee, Ph.D., hereby declare as follows:

I. INTRODUCTION

1. I have been retained on behalf of Cisco Systems, Inc. (“Cisco”) to provide my technical review, analysis, insights, and opinions concerning the validity of the claims of U.S. Patent No. 9,118,602 (EX1001; “the ’602 Patent”) entitled “Tunnel Provisioning with Link Aggregation.” The patent is assigned to Corrigent Corporation (“Corrigent” or “Patent Owner”).

2. I am the same Samrat Bhattacharjee who provided a declaration on January 9, 2023, in support of Cisco’s Petition for *Inter Partes* Review in this proceeding. See EX1004. I maintain the opinions that were set forth in that previous declaration. I provide this reply declaration to respond to certain opinions provided by Dr. George N. Rouskas in a declaration (the “Rouskas Declaration”) submitted in support of the Patent Owner Response filed by Patent Owner. The Rouskas Declaration is marked as Exhibit 2007 in this proceeding.

3. My background and qualifications were set forth in Paragraphs 1-11 of my original declaration in this proceeding, as well as my curriculum vitae marked as Exhibit 1003, and I incorporate that information by reference in this reply declaration. In this reply declaration, I apply the same understanding of the governing law as set forth in Paragraphs 12-19 of my original declaration.

II. MATERIALS RELIED ON IN FORMING MY OPINIONS

4. In forming my opinions in this reply declaration, I have relied on the '602 Patent's claims, specification and prosecution history, on the prior art exhibits to the IPR Petition (Paper 1), any other materials cited in this reply declaration, and my own knowledge, experience and expertise, and the knowledge of a POSA in the relevant timeframe. I have also reviewed and relied upon the materials cited in my original declaration and the materials cited in the Rouskas Declaration. I have also reviewed the Decision on Institution of *Inter Partes* Review provided by the U.S. Patent and Trademark Office Patent Trial and Appeal Board ("PTAB") in this proceeding. See Paper 8.

III. LEVEL OF ORDINARY SKILL IN THE ART AND PRIORITY DATE

5. In this reply declaration, I apply the same definition of a person of ordinary skill in the art ("POSA") as set forth in Paragraphs 57-58 of my original declaration. I note that Dr. Rouskas used the same definition of a POSA in providing his opinions. EX2007, ¶¶21-24.

6. In this reply declaration, I apply the same priority date for the '602 Patent of May 6, 2005, as was set forth in Paragraph 56 of my original declaration. Dr. Rouskas agrees on this priority date. EX2007, ¶21.

IV. CLAIM CONSTRUCTION

7. Paragraph 77 of my original declaration provides my opinion that the terms in the claims of the '602 Patent do not require construction in order to evaluate the prior art discussed in this proceeding. In the Institution Decision, the PTAB determined that it was “unnecessary to construe any terms” at that stage of the proceedings. Paper 8 at 5. In the Rouskas Declaration, Dr. Rouskas subsequently “accept[ed] and adopt[ed]” the position that no claim terms required construction. EX2007, ¶¶35-36. As such, I maintain my opinion that no claim term requires construction.

8. I note that the Rouskas Declaration points out that “a district court has previously construed” the term RSVP-TE found in Claims 3 and 15 of the '602 Patent to mean “RSVP-TE protocol in IETF RFC 3209,” and the same district court found the preamble of Claim 15 of the '602 Patent not to be limiting. EX2007, ¶37; see EX2001. While I have not construed RSVP-TE as part of providing my opinions on the patentability of the claims of the '602 Patent, my opinions would not change if the PTAB adopted the definition used by the district court. Further, my opinions on the patentability of the claims of the '602 Patent assume the preamble of Claim 15 is limiting for the purposes of this proceeding, but my opinions would not change if the PTAB determines that the preamble of Claim 15 is not limiting.

V. THE '602 PATENT

9. Paragraphs 26-55 of my original declaration provide a description of the specification disclosure and claims of the '602 Patent, as well as the prosecution history for the patent application that resulted in the issuance of the '602 Patent. In Paragraphs 38-41 of the Rouskas Declaration, Dr. Rouskas provides his description of the specification and independent Claims 1, 15 and 26 of the '602 Patent. I generally agree with the description of the '602 Patent provided by Dr. Rouskas, and I reserve the right to rely upon the statements in these Paragraphs of the Rouskas Declaration. However, I disagree with Dr. Rouskas's opinion that "the claimed inventions of the '602 Patent were new and inventive at the time of the priority date" of the '602 Patent. EX2007, ¶38. It is my opinion that the claimed inventions of the '602 Patent were not new and were not inventive at the time of the priority date of the '602 Patent for the reasons stated in my original declaration and this reply declaration. I note that the U.S. Patent and Trademark Office did not consider either the Raz or Ferguson prior art references during the prosecution of the application that resulted in the '602 Patent.

VI. GROUND 1: RAZ RENDERS CLAIMS 1-13, 15-24 AND 26 OBVIOUS

10. Paragraphs 42-134 of the Rouskas Declaration contain Dr. Rouskas's opinions that Raz does not render Claims 1-13, 15-24 and 26 of the '602 Patent

obvious. I disagree for the reasons stated in my original declaration and the reasons set forth below.

11. Paragraph 42 of the Rouskas Declaration asserts Dr. Rouskas's opinion that "Raz does not render obvious claims 1-13, 15-24, and 26, including because (i) Raz and the claimed inventions of the '602 patent are fundamentally different, (ii) a POSA would not have modified Raz to arrive at the claimed inventions of the '602 Patent, (iii) Petitioner has failed to establish a motivation to modify Raz to arrive at the claimed inventions of the '602 patent, and (iv) Petitioner has failed to establish a reasonable expectation of success for any such modifications." I disagree for the reasons stated in my original declaration and the reasons set forth below.

A. Raz and the Claimed Invention(s) of the '602 Patent Are Not Fundamentally Different.

12. Paragraphs 43-53 of the Rouskas Declaration assert Dr. Rouskas's opinion that "Raz and the claimed inventions of the '602 patent are fundamentally different." I disagree for the reasons stated in my original declaration and throughout this reply declaration.

13. Dr. Rouskas first argues in Paragraph 49 of the Rouskas Declaration that "Raz, however, does not teach or suggest a LAG of physical tunnel ports to begin with, much less sending data packets from a first MPLS/LAG switch to a second MPLS/LAG switch via an assigned physical tunnel port of a LAG as the independent claims recite." EX2007, ¶49. Instead, Dr. Rouskas argues that "Raz is

directed to using multiple slow-speed processors (i.e., ‘subports’) *within* a network device such as an LSR (label switching router) for processing a *single* high-speed stream between LSRs.” Id. (emphasis in original). I disagree with the conclusions drawn by Dr. Rouskas. As I explained in my original declaration, while Raz discusses the utilization of subports within a LSR to communicate high speed packet streams in an MPLS network, it is my opinion that a POSA similarly would have known to use Ethernet physical data ports of a router or switch in an Ethernet LAG to communicate high speed packet streams in a MPLS network. See, e.g., EX1004, ¶¶82, 90-91, 95, 100, 104, 108; EX1006, Cols. 1:16-19, 2:23-31, 7:7-29, 11:3-12, 13:16-19, 14:42-44, 15:56-58, 17:7-9. The switching fabric within the LSR in Raz has subports, and Raz’s technique identifies one of the subports with sufficient bandwidth to meet the requirements of a LSP (which correlates to a network tunnel) and then assigns that subport to communicate packets from a high speed data stream. EX1004, ¶91. It would have been obvious to a POSA that the same principles would have applied to forwarding packets between MPLS/LAG switches in an MPLS network. Id. A POSA would have understood from Raz, and would have been motivated, to assign a physical tunnel port of the MPLS/LAG switch to a network tunnel in order to provide a tunnel pathway that, in Raz’s words, can meet the bandwidth requirements “in the event a wide connection is to be allocated” for forwarding packets in a high speed packet stream. EX1006, Col. 11:3-12; see

EX1006, Cols. 2:23-25, 7:7-16, 7:22-26, 11:13-12:9, Figure 5. A POSA would have been motivated to employ this same concept between nodes in an MPLS network in order to improve the ability to communicate high speed packet streams that require increased bandwidth.

14. Dr. Rouskas asserts that Raz “does not teach or suggest a LAG of physical tunnel ports,” but this ignores both the discussion of a LAG in Raz and what a POSA would have understood from Raz. LAGs were well-known in the art and widely used to communicate packet streams between switches or routers before the priority date for the ’602 Patent, as demonstrated by both Raz and Ferguson. EX1006, Col. 9:9-28; EX1007, Cols. 1:57-2:3, 1:28-42, 3:36-4:19, Figures 2A-2B; see EX1022 at 21:19-22:6, 27:20-28:16 (deposition testimony from Dr. Rouskas acknowledging the LAGs were well-known and used in the art). It is my opinion that a POSA reading Raz would have understood that the concept of using aggregation to communicate individual packets of a high speed packet stream through subports within a LSR also applies to communicating individual packets through Ethernet physical data ports of routers or switches in a MPLS network. See, e.g., EX1006, Col. 1:40-46 (background discussion of Raz that discusses using “aggregate link speeds” to communicate packet streams between LSRs). In either case, there is a desire to identify and assign a path that will have sufficient bandwidth to

accommodate packets within a high speed stream. Thus, a POSA would have found it obvious from Raz to use a LAG between LSRs.

15. Dr. Rouskas also argues that Raz teaches the use of a single high speed link to communicate streams between LSRs, and thus a POSA would not think to use a LAG between LSRs. I do not agree. While Raz discloses a high speed link between LSRs, a POSA would still have understood from Raz that high speed packet streams could be communicated between switches or routers (such as an LSR) through a physical tunnel port of a LAG. A POSA would have known that the use of a LAG between routers or switches is a design choice alternative to the use of a single high speed link. For example, a single high speed link (such as the 10G link 28 disclosed in Raz) has physical limitations as to the amount of bandwidth it can provide. If a given high speed transmission requires more bandwidth than the physical limit of the high speed link, then a POSA would have known that a LAG was an alternative that offers a way to increase usable bandwidth for transmitting packets between routers or switches. As discussed above, LAGs were well-known and used in the art. EX1006, Col. 9:9-28; EX1007, Cols.1:57-2:3, 1:28-42, 3:36-4:19, Figures 2A-2B; EX1022 at 21:19-22:6, 27:20-28:16. Moreover, Dr. Rouskas acknowledges that a LAG is treated as a “single logical entity” (EX1022 at 13:10-21), which further demonstrates that a LAG is an alternative to a single link. A POSA would have understood that, if additional bandwidth is necessary to transmit high

speed packets streams, then Raz's concept of using aggregation to communicate individual packets of a high speed packet stream through subports within a LSR also applies to communicating individual packets through Ethernet physical data ports in a LAG between routers or switches. Indeed, Raz discusses the "aggregate link speeds" of "larger capacity links" between devices, which a POSA would have understood to mean that aggregation is used for communication of high speed packet streams between devices. EX1006, Col. 1:40-46.

16. Further, Dr. Rouskas argues that Raz is fundamentally different from the subject matter claimed in the '602 patent because "Raz is directed to LSRs connected via a *single* high-speed (10G) link 28, not a LAG, and Raz uses a plurality of slow-speed (1G) subports 14 *within* an LSR for processing data that is received or sent via that single high-speed link 28." EX2007, ¶50 (emphasis in original). I disagree that this means Raz is fundamentally different than the subject matter of the '602 Patent. As discussed above, and in my original declaration, the concept of using aggregation to communicate individual packets of a high speed packet stream through subports within a LSR also applies to communicating individual packets through Ethernet physical data ports of routers or switches in a MPLS network. See EX1004, ¶¶82, 90-91, 95, 100, 104, 108. Notably, Dr. Rouskas stated during his deposition that "Raz was well aware of a LAG" and that one embodiment disclosed by Raz was "taking a LAG switch and he's repurposing it to use it for his

embodiment inside the switch.” EX1022 at 31:21-34:5. A POSA would have known that Raz’s teachings about how to handle packet streams within a LSR could be used to increase transmission bandwidth between LSRs.

17. In addition, Dr. Rouskas asserts that “a POSA would not have understood the single high-speed (10G) link 28 of Raz’s Figure 1 or the single high-speed (10G) links 60 and 68 of Raz’s Figure 3 to be a LAG.” EX2007, ¶50. I disagree. A POSA would have known from Raz that a LAG could have been used in place of high speed links 28, 60 or 68 in order to increase the transmission capacity between the LSRs shown in Figures 1 and 3. As discussed above, Raz discloses the “aggregate link speeds” of “larger capacity links” between devices, which a POSA would have understood to mean that aggregation is used for communication of high speed packet streams between devices. EX1006, Col. 1:40-46. Moreover, Dr. Rouskas agrees that LAGs were well-known and used in the art to communicate data packets between routers or switches. EX1022 at 21:19-22:6, 27:20-28:16; 56:1-16.

18. Dr. Rouskas also provides the opinion that Raz is “fundamentally different than the ’602 patent claims when considering packet labeling and how packets are processed by Raz’s subports versus transmitted via the ’602 patent’s ‘single physical tunnel port.’” EX2007, ¶51. It is Dr. Rouskas’s opinion that “Raz teaches (1) sending from a preceding LSR to a first LSR a data packet with a label that identifies the subport for internally processing data sent/received between the

preceding LSR and first LSR, not between the first LSR and some second LSR, and then (2) if the data packet is sent from that first LSR to some second LSR, it is processed by another subport that is chosen by the second LSR, not the subport assigned by the first LSR and identified in the label sent from the preceding LSR.” Id., ¶52. With respect to point (1) made in Paragraph 52 of Dr. Rouskas’s declaration, I agree that Raz teaches that a first LSR generates a data packet label in which a port serial number is encoded and sends the label to a preceding LSR, as discussed in Paragraph 107 of my original declaration. EX1004, ¶107; EX1006, Cols. 7:17-29, 7:39-45, 9:29-58, 14:23-26, Figures 3-4. Subsequently, the preceding LSR sends a data packet to the first LSR, and the first LSR examines the label and forwards the packet to the proper subport for processing. Id. Further, Raz teaches or renders obvious to a POSA to use a label in the data packet to identify a single physical tunnel port through which a packet could be sent from a first LSR to a second LSR. As explained in Paragraphs 82, 91 and 107-108 of my original declaration, a POSA would have understood that Raz’s techniques could have been implemented to identify a single physical tunnel port through which the data packet in LSR B could be sent to another LSR (which corresponds to the claimed second MPLS/LAG switch), and a POSA would have been motivated to do so. EX1004, ¶¶82, 91 and 107-108. A POSA would have understood that the label technique disclosed by Raz successfully identified a path for processing packets within an

LSR, and a POSA would have understood that the same technique could be used to communicate packets from a first LSR to a second LSR via a LAG, particularly if there was a need to provide a tunnel pathway that can meet the bandwidth requirements “in the event a wide connection is to be allocated” for forwarding packets in a high speed packet stream. EX1006, Col. 11:3-12; see id., Cols. 2:23-25, 7:7-16, 7:22-26, 11:13-12:9, Figure 5. Such an extension of Raz would have been obvious to a POSA. I note that the Board preliminarily concluded in the Institution Decision that my analysis that Raz teaches sending packets from a first LSR to a second LSR was correct (Paper 8 at 10-11), and I do not alter my previous opinion.

19. With respect to point (2) made in Paragraph 52 of Dr. Rouskas’s declaration, it is my opinion that Dr. Rouskas is trying to add an additional limitation to the claims of the ’602 Patent. The claims do not require that the first MPLS/LAG switch assign the single physical tunnel port to be used to send a data packet to the second MPLS/LAG switch, as Dr. Rouskas argues. For example, limitation [1.5] recites “sending said data packet from said first MPLS/LAG switch to a second MPLS/LAG switch via said single physical tunnel port having the port serial number encoded in the data packet label.” EX1001, Col. 9:44-47. The claims of the ’602 Patent require only that the data packets are sent to the second MPLS/LAG switch through the same physical tunnel port as the port on which the packet was received at the first MPLS/LAG switch and that the port serial number is encoded in the data

packet label. EX1001, Cols. 9:44-47, 10:62-64, 12:33-36. The claims do not require that the port serial number identifying the physical tunnel port used to send the data packets to the second MPLS/LAG switch “be assigned by the first [MPLS/LAG switch] and identified in the label sent from the preceding [node],” as Dr. Rouskas argues in Paragraph 51 of the Rouskas Declaration.

20. As such, it is does not matter to the claims that, in Raz, the second LSR chooses the subport that will be used to transmit the data packet from the first LSR and receive the data packet at the second LSR. Instead, a POSA would have understood from Raz that the same subport number could have been used for the transmission of a packet from the preceding LSR to the first LSR and then from the first LSR to the second LSR. EX1006, Cols. 7:17-29, 7:39-45, 9:29-58, 14:23-26, Figures 3-4. Indeed, Dr. Rouskas admitted during his deposition that a POSA reading Raz would have understood that the same subport number could have been used to transmit a data packet from the preceding LSR to the first LSR to the second LSR. EX1022 at 65:18-68:13. Further, it is my opinion that Dr. Rouskas is incorrect about what a POSA would have understood Raz to teach about transmission of a data packet from a first MPLS/LAG switch to a second MPLS/LAG switch. It would have been obvious to a POSA that the data packet label in a data packet could have been used to send the packet from the proceeding node to the first MPLS/LAG

switch to the second MPLS/LAG switch via the same physical tunnel port. EX1006, Cols. 7:17-29, 7:39-45, 9:29-58, 14:23-26, Figures 3-4.

21. Further, I note that, even if the claims of the '602 Patent do require that the first MPLS/LAG switch assign the single physical tunnel port to be used to send a data packet to the second MPLS/LAG switch, it remains my opinion that a POSA would have found the claims to be obvious in light of Raz. It would be a straightforward design choice in view of Raz to have the first MPLS/LAG switch assign the single physical tunnel port to be used to send a packet to the second MPLS/LAG switch. Given that Raz teaches that each successive LSR (or MPLS/LAG switch) determines the subport number on which a packet can be received, then a POSA would have found it obvious that a first LSR could determine both the subport number on which it will receive a packet and the subport number on which a downstream second LSR will receive the packet. Indeed, this is a simpler design choice than what is employed in Raz.

22. Dr. Rouskas also asserts in Paragraph 52 of his declaration that Figure 3 of Raz shows that “a data packet sent from LSR A to LSR B has a label identifying subport 0—i.e., the subport for internally processing data sent/received between LSR A and LSR B, not between LSR B and LSR C.” EX2007, ¶52. Dr. Rouskas states that “[w]hen that data packet is then sent from LSR B to LSR C, it is processed not by subport 0, which was chosen by LSR B, but instead by subport 1, which is

chosen by LSR C.” Id. Referencing Figure 3 of Raz, Dr. Rouskas argues that “Raz teaches that a given LSR selects only the subport used for *receiving* data packets at the given LSR from a preceding node, and the subport used for transmitting data packets from the given LSR to the next LSR is independently chosen by that next LSR,” id. (emphasis in original), and that ““the subports may be different for each hop of the connection.”” Id. (citing EX1006, Cols. 7:26-27, 2:18-20). While I agree that Dr. Rouskas correctly describes Figure 3 and the specification of Raz, I disagree with his conclusions. As discussed above, it does not matter that, in Raz, a second LSR chooses the subport that will be used to transmit the data packet from the first LSR and receive the data packet at the second LSR. Instead, the relevant point is that a POSA would have understood from Raz that the data packet label could identify the same subport to be used for the transmission of a packet from the preceding LSR to the first LSR and then from the first LSR to the second LSR. Indeed, Dr. Rouskas acknowledged that, in Figure 3 of Raz, the same subport could have been used to transmit a data packet from LSR A to LSR B to LSR C. EX1022 at 65:18-68:13. It is merely a matter of bandwidth availability as to which subport is chosen. Raz’s discussion of Figure 3 explains that subport number 1 “may be” chosen for transmission from LSR B to LSR C if subport number 0 (which was used for transmission from LSR A to LSR B) does not have sufficient bandwidth in LSR B. EX1006, Col. 7:17-29. However, Dr. Rouskas acknowledged in his deposition (and

I agree) that “LSR C could have chosen to -- to receive packets from subport zero” in a data packet label to transmit a data packet from LSR B to LSR C if there were sufficient bandwidth. EX1022 at 68:9-13; see EX1022 at 65:18-68:8. Thus, a POSA would have understood from the disclosures in Raz that the data packet label in a data packet could have been used to send the packet from a preceding node to a first MPLS/LAG switch to a second MPLS/LAG switch via the same physical tunnel port.

B. A POSA Would Have Modified Raz to Arrive at the Claimed Invention(s) of the '602 Patent.

23. Paragraphs 54-64 of the Rouskas Declaration assert Dr. Rouskas’s opinion that “a POSA would not have been motivated to modify Raz’s teachings to apply to communication via a LAG in an MPLS network between two MPLS/LAG switches, as recited in the independent challenged claims of the '602 patent.” EX2007, ¶54. I disagree for the reasons stated in my original declaration and throughout this reply declaration.

24. Dr. Rouskas asserts that “a POSA would have understood that Raz is specifically and solely directed to a provisioning mechanism for *inside* a network device such as an LSR” and that “[a] POSA would have therefore understood that Raz is specifically directed to using multiple subports (i.e., processors) to increase the *internal* processing capacity of an LSR to match an external high-speed link between LSRs.” EX2007, ¶55. I disagree. It is my opinion that a POSA would have

found it obvious from Raz that the utilization of subports within a LSR to communicate high speed packet streams in an MPLS network would have extended to the use of Ethernet physical data ports of a router or switch in an Ethernet LAG to communicate high speed packet streams in a MPLS network. A POSA reading Raz would have understood that the concept of using aggregation to communicate individual packets of a high speed packet stream through subports within a LSR also applies to communicating individual packets through Ethernet physical data ports of routers or switches in a MPLS network. In either case, there is a desire to identify and assign a path that will have sufficient bandwidth to accommodate packets within a high speed stream.

25. Dr. Rouskas also argues that “a POSA would not have been motivated by Raz to use multiple *external* links to increase the bandwidth *between* LSRs (e.g., a LAG) because Raz describes that the capacity of such external links or streams between LSRs already exceeds the capacity of internal processors.” EX2007, ¶56 (emphasis in original). I disagree because, as explained above, a POSA would have known that Raz’s use of aggregation to communicate individual packets through subports within a LSR increase the capacity of the LSR to handle high speed packet streams and there would be no reason not to use the same mechanism to increase capacity when communicating individual packets through Ethernet physical data ports of routers or switches in a MPLS network. A POSA would have known that

Raz's teachings about how to handle packet streams within a LSR could be used to increase transmission bandwidth between LSRs. Indeed, even Dr. Rouskas acknowledges that it had long been known in the art to use a LAG to increase bandwidth between LSRs. EX1022 at 21:19-22:6, 27:20-28:16. My opinion is not changed by the fact that the embodiment disclosed in Raz uses ten 1G subports within the LSRs and a 10G link between LSRs. See, e.g., EX1006, Col. 7:7-48. A POSA would have understood that the capacity of the internal processors in Raz could have exceeded the capacity of the external link between LSRs. Raz states that its embodiment is an "example LSR," but a POSA would have understood that other LSRs may have capacity that exceeds the capacity of external links between LSRs. In that situation, it would have been obvious to a POSA from a review of Raz (and the background knowledge of a POSA) to use a LAG to increase the bandwidth between LSRs.

26. Dr. Rouskas states that "[a]nother reason why a POSA would not have been motivated to modify Raz as Petitioner asserts is because the POSA would have understood that Raz addresses a completely different problem than the '602 patent." EX2007, ¶57. Dr. Rouskas argues that "[a] POSA would have understood that the '602 patent deals with relatively low link speeds and aggregates them to form a higher speed link, i.e., a LAG." Id. Dr. Rouskas then asserts that "[a] POSA would have understood that Raz, however, deals with the opposite problem: how to handle

a high-speed link using slow-speed processors.” Id. Further, Dr. Rouskas states that a POSA “would not have looked to Raz for solutions regarding a LAG in an MPLS network” because “[a] POSA would have understood that this problem that Raz addresses does not arise for a LAG, and thus the ’602 patent, because a LAG does not use a single high-speed link but instead uses multiple low-speed links to make up a high-speed link, thus obviating the need for Raz’s forwarding and provisioning mechanism that splits a single high-speed link for processing by multiple slower-speed processors/subports.” Id.

27. I disagree with these opinions from Dr. Rouskas because he seems to mischaracterize the fundamental problem addressed in both the ’602 Patent and Raz – the need for increased bandwidth across communication links to deal with higher and higher speed data packet streams. The ’602 Patent explains that its disclosed methods “are meant to ensure that sufficient bandwidth will be available on the links in the group in order to meet service guarantees, notwithstanding load fluctuations and link failures.” EX1001, Col. 2:22-25; see id., Cols. 2:39-41, 2:59-3:3, 3:13-16, 6:11-29, 6:46-51, Figures 3-4. Raz likewise addresses the “ever-increasing demand by users for more and more bandwidth.” EX1006, Col. 1:40-41; see id., Abstract, Cols. 1:65-2:20, 6:24-45, 11:3-12, Figure 5. A POSA would have known that Raz teaches (1) the utilization of subports within an LSR to process high speed packet streams in a way that maximizes available bandwidth and (2) using a data packet

label to identify the subports having sufficient bandwidth to process the packet stream and communicating that label upstream to a preceding node to allow the packet to be forwarded to the proper subport. Id., Abstract, Col. 1:65-2:20, 6:24-45, 7:17-38, 7:65-8:13, 9:49-58, 11:3-12, Figures 1-4. A POSA who reviewed Raz would have understood that the same concepts could be applied to a LAG used to communicate a high speed packet stream between LSRs. A POSA would have known to select a physical tunnel port of the LAG in a way that maximizes bandwidth and to use a data packet label to identify the physical tunnel port and communicate that label to a preceding node to allow the packet to be communicated through the proper network tunnel. That is, both Raz and the '602 Patent aggregate slower speed communication pathways (i.e., the “slow speed” processors within the LSR in Raz and the slower speed links between MPLS/LAG switches in the '602 Patent) to maximize available bandwidth and provide a higher aggregate speed to handle high speed packet streams.

28. Dr. Rouskas also argues that “[a]nother reason why a POSA would not have been motivated to modify Raz as Petitioner asserts is because the '602 patent’s claims are specifically directed to improving an MPLS network, but Raz’s invention is indifferent to, and outside the purview of, MPLS network engineering.” EX2007, ¶58; see id., ¶59. I disagree. As explained in Paragraphs 80-82, 148-150 and 208-

210 of my original declaration, Raz discloses the implementation of its invention in an MPLS network, as shown below in Figure 1 of Raz:

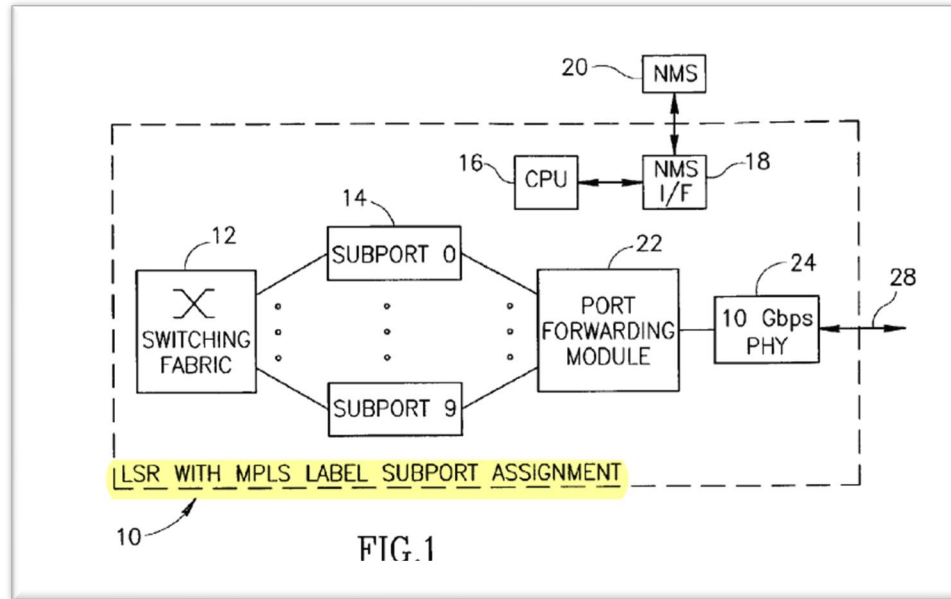


Figure 1 of Raz (Annotated)

See EX1004, ¶¶80-82, 148-150 and 208-21; EX1006, Cols. 7:7-29, 9:9-48, 11:3-12, 14:30-32 (Claim 3), 14:50-52 (Claim 10), 16:63-65 (Claim 26), 17:14-16 (Claim 43). Thus, Raz is within the purview of MPLS because it is implemented in an MPLS network. Further, to the extent the '602 Patent discloses a method or apparatus that “improves” a MPLS network, then Raz also discloses a method or system that improves a MPLS network because Raz discloses ways to improve the use of bandwidth when transmitting high speed packet streams through a MPLS network. Id., Abstract, Cols. 1:40-41, 1:65-2:20, 6:24-45, 11:3-12, Figure 5.

29. Dr. Rouskas argues that Raz is “indifferent to” MPLS network engineering because “the ’602 [P]atent is concerned with the transmission of MPLS packets via a LAG that connects two MPLS/LAG switches” whereas Raz is concerned with “packet processing within a switch.” EX2007, ¶¶58-59. Dr. Rouskas asserts that Raz’s focus on “packet processing within a switch” is “outside the purview of MPLS” because Raz would not “help improve the utilization or efficiency of how an MPLS network handles a LAG link.” Id., ¶59. I disagree. Raz discloses its invention in the context of a MPLS network, and a POSA would have been motivated to consider the solutions of Raz in trying to improve MPLS networks as a whole. As discussed above, Raz discloses a way to improve the use of bandwidth within a MPLS network because it teaches how to better process a high speed packet stream through an LSR in a MPLS network. As such, Raz discloses improvement in how a MPLS network handles a high speed packet stream and thus does more than simply accommodate an MPLS network. Raz is within the purview of MPLS.

30. Further, Dr. Rouskas argues that “MPLS/LAG switches would have rendered Raz inoperable or unsatisfactory for its intended purpose.” EX2007, ¶60. Dr. Rouskas asserts that “a POSA would have understood that Raz involves multiplexing (which Raz refers to as “aggregating”) the outputs of its slow-speed subports into a single high-speed stream.” Id., ¶61. Dr. Rouskas states that “a POSA would not have done this—i.e., used Raz’s multiplexing—with data transmitted over

the various physical tunnel ports of a LAG, and further, a POSA *could not* have performed multiplexing using data transmitted over a ‘single physical tunnel port’ as recited in the challenged claims, as multiplexing constitutes combining multiple streams, as described above.” Id., ¶62 (emphasis in original).

31. I disagree with the above opinions from Dr. Rouskas concerning multiplexing. Raz discloses multiplexing as a design choice only because the inter-router links within the LSRs are slower in speed than the external link between LSRs. However, as discussed above, it would have been obvious to a POSA that a LAG could have been used as the communications link between LSRs, particularly if there is a need to increase the bandwidth of the link between the LSRs. A POSA would have understood that, if a LAG were available between LSRs, there would be no need to multiplex the data packet streams transmitted between LSRs, as shown in Ferguson. EX1007, Cols.1:57-2:3, 1:28-42, 3:36-4:19, Figures 2A-2B. For example, if a LAG between LSRs contains ten physical tunnel ports, then a high speed packet stream can be communicated along any one of those tunnel ports without being multiplexed. In other words, a POSA would have understood that the decision of whether or not to multiplex the packet streams transmitted from an LSR is a design choice, and it would not render Raz inoperable for a POSA to determine that concept of using aggregation to communicate individual packets of a high speed packet stream through subports within a LSR also applies to communicating individual

packets through Ethernet physical data ports of a LAG between routers or switches in a MPLS network.

32. The focus of Raz is the use of aggregation to communicate individual packets of a high speed packet stream through subports within a LSR and identifying a selected subport in a data packet label that is sent to a previous node so that the packet is routed to the proper subport. A POSA would have understood that these focal points of Raz could be utilized regardless of whether Raz multiplexes its data streams onto a single link for transmission to the next LSR. The same key features of Raz would be implemented even if a LAG were used as a link between the LSRs. Indeed, as I have discussed, a POSA would have known that these disclosures of Raz could have been used to select the physical tunnel port through which to transmit a high speed packet stream if a LAG were used as the link between LSRs.

33. Dr. Rouskas also argues that Raz would have been rendered “inoperable or unsatisfactory for its intended purpose” because “if Raz’s subports themselves constitute a link between two LSRs, then it is not possible to process a data packet with the same subport on both sides of the link as Raz teaches because the subports are not on either side of the link.” EX2007, ¶63. I disagree. Subports are not the link between two LSRs. Instead, subports are physical components within the LSRs, and Raz discloses that outbound packets are forwarded from the subports within a first LSR to the link between the LSRs to subports accepting inbound packets in a second

LSR. See, e.g., EX1006, Col. 7:30-38. Figures 1, 3. As such, it would have been obvious to a POSA that using a LAG as the link between the LSRs in Raz does not affect the subports within the LSRs. My opinions are therefore consistent with Raz's teaching that "[t]he selected subport is the same for both sides of a 10G link." EX1006, Col. 7:20; see id., Cols. 2:15-16, 6:38-41, 8:46-47, Figure 3.

34. Dr. Rouskas also states that "a POSA would have understood that for Raz's teachings, communication between LSRs cannot be done in the 'same way' as within an LSR." EX2007, ¶64. Dr. Rouskas references the earlier opinions in his declaration as support for this statement, and I therefore incorporate my earlier opinions (and those in my original declaration) in response to this statement from Dr. Rouskas.

C. A POSA Would Have Been Motivated to Modify Raz to Arrive at the Claimed Inventions of the '602 Patent.

35. Paragraphs 65-81 of the Rouskas Declaration assert Dr. Rouskas's opinion that "the Petition fails to establish that a POSA would have modified Raz at all, let alone to arrive at the claimed inventions of the '602 patent." I disagree for the reasons stated in my original declaration and throughout this reply declaration.

36. Dr. Rouskas argues that the Petition "does not mention 'modify'" and "only mentions 'motivation' three times" and those three assertions assume "that Raz already includes, and is already being applied to, a LAG between two MPLS/LAG switches." EX2007, ¶68. I disagree. First, it is my understanding that

the Petition and my original declaration were not required to use the exact word “modify” in order to establish a motivation to arrive at the subject matter claimed in the ’602 Patent based on the teachings of Raz. Second, I note that my opinions on Raz in my original declaration took into account that obviousness can be shown based on a motivation to modify the prior art. EX1004, ¶14. Third, I note that the Petition and my original declaration had extensive discussions of the motivation that a POSA would have had to modify Raz to arrive at the subject matter covered by the claims of the ’602 Patent. Paper 1 at 15, 19-20 and 22-25; EX1004, ¶¶82, 90-91, 95, 100, 104 and 108. Fourth, my opinions did not assume that Raz already includes a LAG between two MPLS/LAG switches. Rather, my opinion has been and remains that, if a LAG is used to communicate high speed packet streams between MPLS/LAG switches in a MPLS network, then Raz’s concept of using aggregation to communicate individual packets of a high speed packet stream through subports in a LSR also applies to communicating individual packets through Ethernet physical data ports in a LAG in a MPLS network. See, e.g., EX1004, ¶82.

37. Dr. Rouskas asserts that “a POSA would have understood that Raz does not use subports to ‘communicate high-speed packet streams’ as Petitioner alleges but rather for *internal processing* of a high-speed packet stream within an LSR.” EX2007, ¶70 (emphasis in original); see id., ¶71. I disagree. Raz discloses that its “mechanism comprises a subport forwarding and provisioning mechanism whereby

a plurality of subports comprising slower speed processors are used to perform the packet processing for a higher speed packet stream.” EX1006, Cols. 1:65-2:3. Raz explains that part of the packet processing includes assigning outbound packets to a subport in a first LSR in accordance with the label associated with each outbound packet, aggregating the outputs of the plurality of subports into a high speed packet stream to be communicated to the next LSR, and forwarding inbound packets from the high speed packet stream to a subport on the next LSR. Id., Col. 2:41-51. This process is shown in Figure 3 of Raz, which is reproduced below:

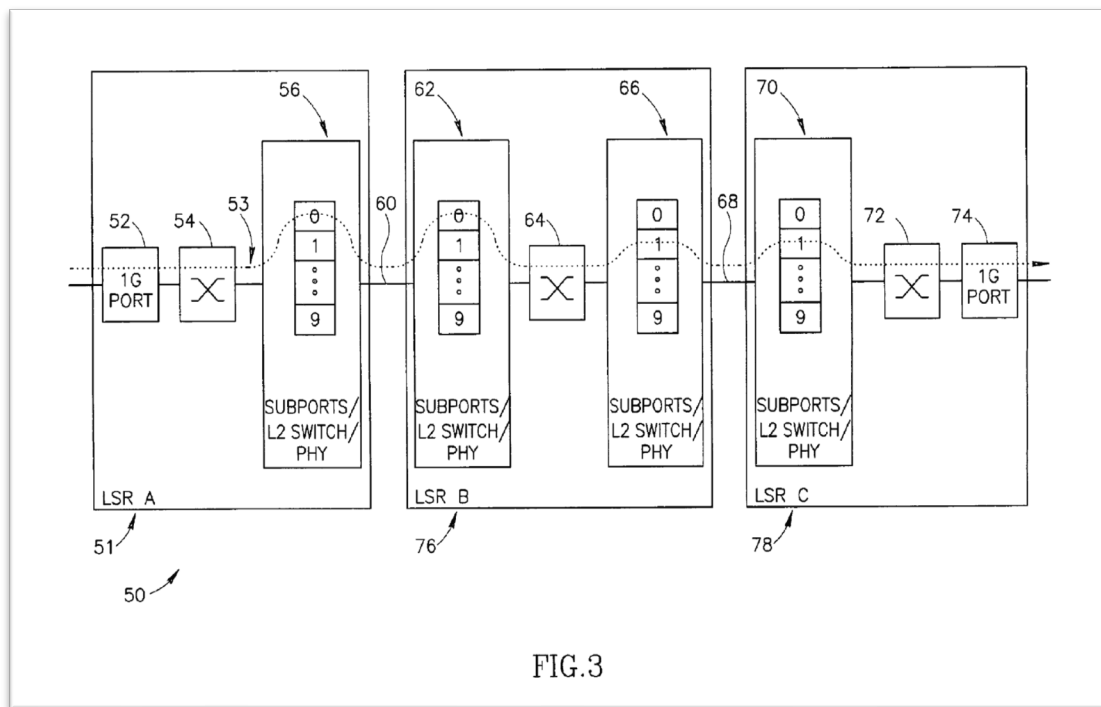


Figure 3 of Raz

See EX1006, Cols. 6:24-25, 7:41-58. Indeed, Raz discusses that packets are forwarded to and through the subports within a LSR. See, e.g., id., Col. 7:18-48. A

POSA thus would have understood that the “packet processing” performed by the subports within the LSRs in Raz includes communicating the high speed packet streams.

38. Further, Dr. Rouskas argues that the Petition “does not explain *why* or *how* a POSA would have been motivated to modify the specific teachings of Raz to include a LAG between LSRs.” EX2007, ¶70 (emphasis in original). I disagree. As explained in my original declaration and in other parts of this reply declaration, a POSA would have understood that the system of Raz would have been modified to include a LAG between the LSRs, the modified system would select a physical tunnel port of the LAG to communicate a high speed packet stream while maximizing the available bandwidth of the modified system, and the modified system would use a data packet label to identify the selected physical tunnel port and communicate that label to a preceding node to allow the packet to be communicated through the proper physical tunnel port.

39. Dr. Rouskas also argues that the Petition and my declaration do not explain “how a POSA would purportedly apply Raz’s particular techniques for using subports *within* an LSR ‘in *the same way*’ to communications *between* LSRs.” EX2007, ¶71 (emphasis in original). I disagree for the reasons stated above.

40. Dr. Rouskas states that “[a] POSA would have known that how packets are processed and move within a switch is different from how packet streams are

communicated between switches.” EX2007, ¶72. Dr. Rouskas lists three purported technical reasons why this is true: (1) “the MPLS packet stored in the switch is different than the Ethernet frame sent between switches,” (2) “[e]thernet frames are serially transmitted bit-by-bit” between switches whereas within a switch “there is no bit-by-bit transmission,” and (3) “the way an MPLS packet ‘moves’ within a switch from the input port...to the output port...is completely different from, and unrelated to, how Ethernet frames are communicated (via serial bit-by-bit transmission) between switches.” Id. It is my opinion that these technical differences between how packets may move within a switch versus between switches does not change my conclusion about what a POSA would have understood from Raz. While these purported differences may be correct in some network architectures, they are not applicable to all architectures, as a POSA could use serial bit-by-bit transmission within a switch. Further, the purported differences identified by Dr. Rouskas do not affect whether Raz’s teaching to use aggregation to communicate individual packets of a high speed packet stream through subports within a LSR could also be applied to the selection and aggregation of physical tunnel ports of a LAG between LSRs. Notably, Raz’s discussion of the use of subports for packet processing within an LSR does not address any of the factors raised by Dr. Rouskas relating to decapsulation, bit-by-bit transmission or whether the subport is reading a packet from a memory location during processing. Further, I note that none of the purported

technical differences identified by Dr. Rouskas is a limitation in any of the claims of the '602 Patent.

41. For example, Raz discloses the forwarding of outbound packets to a subport in a first LSR (such as subport 3 in LSR A discussed in column 7), sending the packets over a 10G link to a second LSR (LSR B), and receiving the inbound packet at a subport of the second LSR (such as subport 3 in LSR B). EX1006, Col. 7:18-48. Raz discloses this transmission of the packets without any discussion of alleged differences between how packets move within a LSR and how packet streams are communicated between LSRs.

42. Similarly, Raz's Figure 3 (reproduced below) shows the transmission of a high speed packet stream from LSR A to LSR B to LSR C, with subports within the LSRs processing packets on either side of the link between the LSRs. EX1006, Col. 9:29-58. Again, Raz does not discuss anything about alleged differences between how packets move within a LSR and how packet streams are communicated between LSRs. There is no reference to decapsulation, bit-by-bit transmission or whether the subport is reading a packet from a memory location during processing; nor are these features required or contemplated by the claims of the '602 Patent.

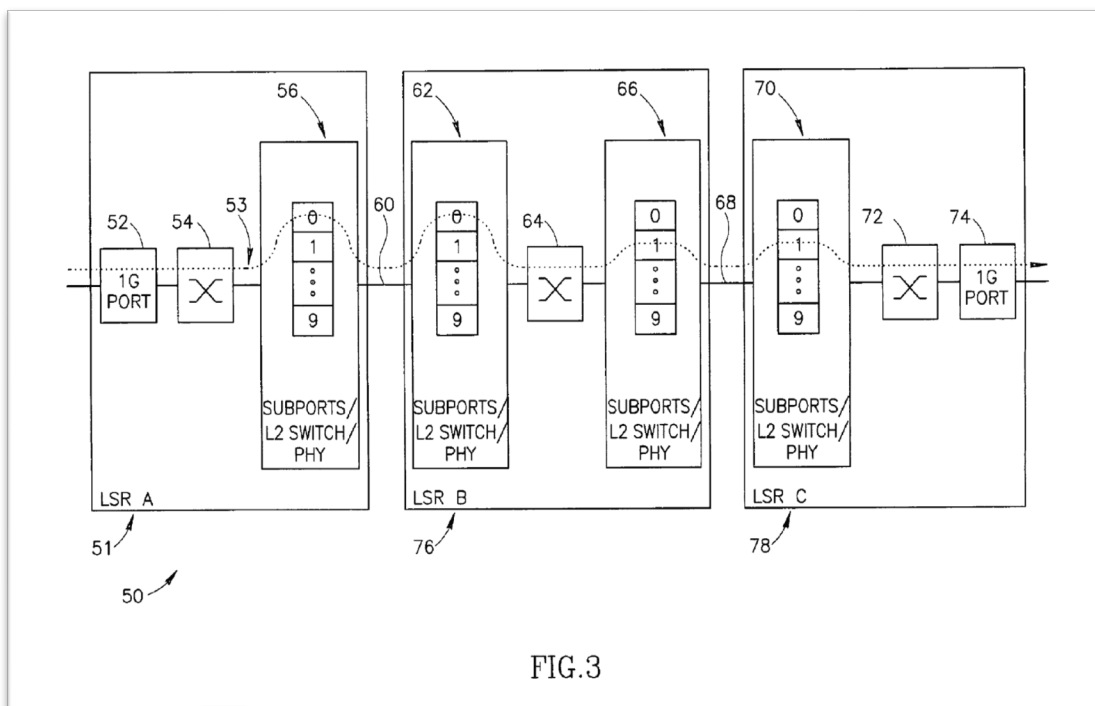


Figure 3 of Raz

43. A POSA thus would have understood that the alleged differences highlighted by Dr. Rouskas are orthogonal to Raz’s teachings about the use of aggregation to communicate individual packets of a high speed packet stream through subports within a LSR and whether a POSA would have known to apply the same concept to the selection and aggregation of physical tunnel ports of a LAG between LSRs. This conclusion is supported by the disclosure in Ferguson, which states that its use of “an aggregated link having two or more logically associated physical interconnects” for transmitting packets between routers “may be readily applied to internal data paths within a device (e.g., a router).” EX1007, Cols. 5:61-6:9. In other words, Ferguson discloses that its aggregation techniques between

routers can also be applied within a router. Dr. Rouskas admits that Ferguson states as much. See, e.g., EX2007, ¶140. Ferguson likewise does not discuss anything about the alleged technical differences between how packets move within a device and how packet streams are communicated between devices that were discussed by Dr. Rouskas. As such, a POSA would not have understood these to alter a POSA's understanding of the teachings of Ferguson (or Raz).

44. Further, Raz also discloses using a data packet label to identify the subports having sufficient bandwidth to process the packet stream and communicating that label upstream to a preceding node to allow the packet to be forwarded to the proper subport. EX1006, Col. 7:17-38, 7:65-8:13, 9:49-58. A POSA would have understood from Raz that a data packet label also could be used to identify the physical tunnel port in a LAG through which to transmit a high speed data stream and to send that label to a preceding node to allow the packet to be communicated through the physical tunnel port. These uses of a data packet label would not be impacted by the technical differences between how packets move within a device and how packet streams are communicated between devices that were discussed by Dr. Rouskas. The differences discussed by Dr. Rouskas are not relevant to how a data packet label is created, the information within the data label, the communication of the data packet label upstream, or how the data packet label

is used. As such, Dr. Rouskas's argument about these technical differences would not alter my opinions about this teaching from Raz.

45. Dr. Rouskas also repeats his arguments that “Raz itself distinguishes between operations within an LSR and between LSRs” and that “[a] POSA would have understood that these two operations with an LSR—i.e., the multiplexing of Raz's subport outputs into a single stream and the use of the same subports in LSRs on each side of a link—are not, and cannot be, “the same as” communications between two LSRs.” EX2007, ¶72. I disagree with these arguments for the reasons stated above.

46. Dr. Rouskas also asserts that “Raz describes a ‘problem’ in which external link speeds ‘exceed the capacity’ of existing internal processors, such that multiple internal processors are needed for a single high-speed link” and that “[a] POSA would not have understood Raz to indicate any need for more bandwidth between LSRs.” EX2007, ¶73. I disagree because, as explained above, a POSA would have known that Raz's teachings about how to handle packet streams within a LSR could be used to increase transmission bandwidth between LSRs. EX1022 at 21:19-22:6, 27:20-28:16. A POSA would have understood that the capacity of the internal processors in Raz could have exceeded the capacity of the external link between LSRs. Raz states that its embodiment is an “example LSR,” but a POSA would have understood that other LSRs may have capacity that exceeds the capacity

of external links between LSRs. In that situation, a POSA would have found the teachings of Raz to be germane, and a POSA would have found it obvious to use a LAG to increase the bandwidth between LSRs.

47. Paragraphs 74-80 of Rouskas Declaration repeat many of the previous arguments raised by Dr. Rouskas in an attempt to downplay the teachings of Raz. I disagree with Dr. Rouskas's opinions for the reasons that I explained in my original declaration and throughout this reply declaration.

48. Paragraph 81 of the Rouskas Declaration also repeats many of the same arguments previously raised by Dr. Rouskas with respect to Raz, and I disagree for the reasons that I explained in my original declaration and throughout this reply declaration. In addition, I note that Dr. Rouskas asserts that "for limitation 1.5 in particular, it is my opinion that the Petition fails to discuss, much less establish, specifically why or how a POSA would have modified the existing teachings of Raz to meet all aspects of that limitation, including that a data packet received by a first MPLS/LAG switch is sent from that switch to a second MPLS/LAG switch via a single physical tunnel of the LAG that is assigned by the first MPLS/LAG switch and indicated in a data packet label prepared by the first MPLS/LAG switch and included in the data packet received by the first MPLS/LAG switch." EX2007, ¶81. I disagree with this statement for two reasons. First, as discussed above, Raz teaches that a first LSR generates a data packet label in which a (sub)port serial number is

encoded and sends the label to a preceding LSR; the preceding LSR sends a data packet to the first LSR; and the first LSR examines the label and forwards the packet to the proper subport for processing. EX1006, Cols. 7:17-29, 7:39-45, 9:29-58, 14:23-26, Figures 3-4. As explained in Paragraphs 82, 91 and 107-108 of my original declaration, a POSA would have understood that Raz's techniques could have been implemented to identify a single physical tunnel port through which the data packet in a first LSR (which corresponds to the claimed first MPLS/LAG switch) could be sent to another LSR (which corresponds to the claimed second MPLS/LAG switch), and a POSA would have been motivated to do so. A POSA would have understood that the label technique disclosed by Raz successfully identified a path for processing packets within an LSR, and it would have been obvious that the same technique could be used to communicate packets from a first LSR to a second LSR via a LAG, particularly if there was a need to provide a tunnel pathway that can meet the bandwidth requirements "in the event a wide connection is to be allocated" for forwarding packets in a high speed packet stream. EX1006, Col. 11:3-12; see id., Cols. 2:23-25, 7:7-16, 7:22-26, 11:13-12:9, Figure 5. Dr. Rouskas provides no reason why a POSA would not have understood this possibility. I note that the Board preliminarily concluded in the Institution Decision that my analysis that Raz teaches sending packets from a first LSR to a second LSR was correct (Paper 8 at 10-11), and I do not alter my previous opinion.

49. Further, I do not agree with Dr. Rouskas's assertion that the claims of the '602 Patent require that packets are sent from the first MPLS/LAG switch to the second MPLS/LAG switch via a single physical tunnel that it "assigned by the first MPLS/LAG switch." EX2007, ¶81. It is my opinion that the claims of the '602 Patent require only that the data packets are sent to the second MPLS/LAG switch through the single physical tunnel port having the port serial number encoded in the data packet label. EX1001, Cols. 9:44-47, 10:62-64, 12:33-36. The claims do not require that the first MPLS/LAG switch assign the single physical tunnel port to be used to send a data packet to the second MPLS/LAG switch.

50. As such, it does not matter that, in Raz, the second LSR chooses the subport that will be used to transmit the data packet from the first LSR and receive the data packet at the second LSR. Instead, a POSA would have understood from Raz that the same subport number could be used for the transmission of a packet from the preceding LSR to the first LSR and then from the first LSR to the second LSR. EX1006, Cols. 7:17-29, 7:39-45, 9:29-58, 14:23-26, Figures 3-4. Indeed, Dr. Rouskas admitted during his deposition that a POSA reading Raz would have understood that the same subport number could have been used to transmit a data packet from the preceding LSR to the first LSR to the second LSR. EX1022 at 65:18-68:13. Further, it is my opinion that Dr. Rouskas is incorrect about what a POSA would have understood Raz to teach about transmission of a data packet from a first

MPLS/LAG switch to a second MPLS/LAG switch. A POSA would have understood from the disclosures in Raz that the data packet label in a data packet could have been used to send the packet from the proceeding node to the first MPLS/LAG switch to the second MPLS/LAG switch via the same physical tunnel port. EX1006, Cols. 7:17-29, 7:39-45, 9:29-58, 14:23-26, Figures 3-4.

51. Further, I note that, even if the claims of the '602 Patent do require that the first MPLS/LAG switch assign the single physical tunnel port to be used to send a data packet to the second MPLS/LAG switch, it remains my opinion that a POSA would have found the claims to be obvious in light of Raz. It would be a straightforward design choice in view of Raz to have the first MPLS/LAG switch assign the single physical tunnel port to be used to send a packet to the second MPLS/LAG switch. Given that Raz teaches that each successive LSR (or MPLS/LAG switch) determines the subport number on which a packet can be received, then a POSA would have found it obvious that a first LSR could determine both the subport number on which it will receive a packet and the subport number on which a downstream second LSR will receive the packet.

52. Paragraph 82 of the Rouskas Declaration repeats Dr. Rouskas's opinion that "the Petition fails to establish a motivation to modify Raz," but it provides no further opinions from Dr. Rouskas. I disagree with this opinion from Dr. Rouskas

for the reasons stated in my original declaration and throughout this reply declaration.

D. There is a Reasonable Expectation of Success in Modifying Raz.

53. Dr. Rouskas argues that “the Petition does not contain persuasive argument or evidence that a POSA would have had a reasonable expectation of success for modifying Raz to meet the challenged claims.” EX2007, ¶83. I disagree. As I explained in Paragraphs 14 and 17 of my original declaration, it is my understanding that the obviousness analysis requires that, where there is a reason to modify or combine the prior art to achieve the claimed invention, there must also be a reasonable expectation of success in so doing to render the claimed invention obvious. However, it is my understanding that the Petition and my supporting opinions do not have to specifically use the words “reasonable expectation of success” in order to establish that a modification of the prior art will be successful. Further, it is my opinion that the Petition, my original declaration and this reply declaration all provide sufficient explanation why a POSA reasonably would have expected success in modifying the teachings of Raz to (1) use Ethernet physical data ports of a router or switch in an Ethernet LAG to communicate high speed packet streams in a MPLS network and (2) generate a data packet label in which a (sub)port serial number is encoded, send the label to a preceding LSR (or MPLS/LAG switch), and have the preceding LSR (or MPLS/LAG switch) send the a data packet to the

first LSR (or MPLS/LAG switch) to the first LSR through the physical data port identified in the label. Paper 1 at 15, 19-20 and 22-25; EX1004, ¶¶82, 91 and 107-108; see Paragraphs 12-52 above.

54. Dr. Rouskas also asserts his opinion that “a POSA would not have had a reasonable expectation of success of modifying Raz’s mechanism to meet the claims, as a POSA would not have even had a reasonable expectation of success of somehow applying Raz’s mechanism to communications between two network devices (such as the claimed MPLS/LAG switches) to begin with.” EX2007, ¶86. Dr. Rouskas does not provide any explanation for this opinion, other than to cite his previous opinions in the Rouskas Declaration. I disagree with Dr. Rouskas for the reasons stated in my original declaration and throughout this reply declaration.

E. Independent Claim 1

55. Dr. Rouskas states his opinion that “Raz does not render obvious independent claim 1 of the ’602 patent.” EX2007, ¶87. I disagree for the reasons stated in my original declaration and throughout this reply declaration.

1. Raz Teaches or Renders Obvious a “LAG” Connecting a “first MPLS/LAG switch” to a “second MPLS/LAG switch.”

56. Dr. Rouskas states his opinion that “Raz’s subparts do not teach or render obvious the claimed ‘LAG’ connecting a ‘first MPLS/LAG switch’ to a ‘second MPLS/LAG switch’ as recited in claim 1.” EX2007, ¶89; see id., ¶90 (“a POSA would not have understood Raz’s subparts to constitute or suggest a LAG”).

Dr. Rouskas argues that “a POSA would have understood a LAG to be a group of network connections, or *links*, that are *between* network components.” EX2007, ¶91 (emphasis in original). Dr. Rouskas also asserts that “a POSA would have understood that Raz’s subports are internal network processors, not links between two endpoints of a network. EX2007, ¶91. As such, Dr. Rouskas states the opinion that “a POSA would have understood that Raz’s multiple subports are not ‘aggregated’ in the sense of a LAG,” citing IEEE 802.3ad. Id., ¶92.

57. I disagree with Dr. Rouskas’s opinions about Raz’s teachings with respect to a LAG. As an initial matter, I agree with Dr. Rouskas on the common definition of a LAG. Paragraph 25 of my original declaration quoted Ferguson in explaining that “[t]he term ‘link aggregation’ refers to a technique by which the multiple physical interconnects are logically associated and treated as a single, aggregated link.” EX1004, ¶25, quoting EX1007, Col. 1:27-30. In, my original declaration, I also cited IEEE 802.3ad and stated that an advantage of a LAG “is that it provides ‘for increased link availability and bandwidth *between the two devices*.’” Id., quoting EX1007, Col. 1:32-34 (emphasis added).

58. However, I disagree with Dr. Rouskas about what a POSA would have understood about a LAG from a review of Raz. It was my opinion in my original declaration and remains my opinion that a POSA reviewing Raz would have understood that the subports within Raz act functionally like a LAG. For example,

Column 7 of Raz contains the following passage relating to the combined operation of the subports in Raz:

To aid in understanding the invention, the example LSR shown comprises a 10G interface that is composed of ten individual 1G packet streams. The ten subports are provided wherein each is adapted to handle a 1G packet stream. The **overall aggregate speed**, however, is 10G. Due to the connection oriented approach of the MPLS protocol, the assignment of connections to subports can be done statically on an LSP basis. Note, that the high speed interface (e.g., 10G) can be trunked into any number of individual subports, e.g., 8, wherein 10 is used here by example only.

EX1006, Col. 7:7-16 (emphasis added); see id., Cols. 8:26-26 (“Each of the 1G links make up the subports of the aggregate 10GE link.”); 8:40-46 (“The example LSR 30 comprises a 10G interface that is composed of ten individual 1G packet streams. The ten subports are provided wherein each is adapted to handle a 1G packet stream. The overall aggregate speed, however, is 10G.”). A POSA reviewing Raz would have understood that Raz’s subports functionally act like a LAG because the subports provide multiple 1G pathways for handling packet streams that can be thought of as logically associated and treated as a single aggregated 10G pathway. Indeed, Dr.

Rouskas stated during his deposition that one embodiment disclosed by Raz was “taking a LAG switch and he’s repurposing it to use it [as a LAG] for his embodiment inside the switch.” EX1022 at 31:21-34:5. Thus, it would have been obvious to a POSA that, thinking of the subports in Raz as a functional LAG, the teaching of Raz could be applied to a LAG between LSRs or MPLS/LAG switches.

59. My opinion is supported by the fact that the subports in Raz act together to accomplish the goal of a LAG that was discussed in Ferguson – i.e., increasing the available bandwidth for a high speed packet stream. For example, as explained in Paragraph 25 of my original declaration, Ferguson states that “bandwidth can be increased in linear increments, e.g., by adding individual interconnects to increase the bandwidth between the two devices.” EX1007, Col. 1:34-36. “In addition, the multiple physical interconnects provide a degree of redundancy in that a failure in a single physical interconnect no longer inhibits direct traffic flow between the two devices.” Id., Col. 1:36-40. “With link aggregation, traffic on a failed physical interconnect can be redirected to one of the other physical interconnects in the aggregated link.” Id., Col. 1:40-42. A POSA would have understood that the subports of Raz accomplish these goals and functionally act as a LAG.

60. Dr. Rouskas argues that Raz separately refers to a LAG in its specification and that a POSA would have understood this reference to a LAG “to demonstrate that Raz distinguishes between a LAG and its own subports.” EX2007,

¶93, citing EX1006 at 9:9-15. I disagree. Dr. Rouskas stated during his deposition that the embodiment disclosed in Column 9 was “taking a LAG switch and he’s repurposing it to use it [as a LAG] for his embodiment inside the switch.” EX1022 at 31:21-34:5. As such, the embodiment in Column 9 of Raz is consistent with my opinion that other disclosures of Raz also teach a POSA that Raz’s subports within a LSR functionally act as a LAG.

61. Moreover, even if Dr. Rouskas is correct that a LAG does not exist within a switch, he appears to misunderstand my opinion with respect to Raz. It is my opinion that Raz’s use of its subports to forward high speed packet streams would have taught a POSA to use Ethernet physical data ports of a router or switch in an Ethernet LAG to communicate high speed packet streams in a MPLS network. See EX1004, ¶¶82, 90-91, 95, 100, 104, 108. This opinion is independent of whether the subports within the LSR in Raz would be labeled as a LAG.

62. Paragraph 94 of the Rouskas Declaration repeats Dr. Rouskas’s opinion that Raz’s discussion of multiplexing the output of its subports into a single high speed link “teach[es] away from using a LAG” between MPLS/LAG switches. I disagree. As I explained above, Raz discloses multiplexing only because Raz made a design choice to use a single link between routers (i.e., LSRs) in its network. If there is only a single link between router, then the data packet streams from the various subports within the LSR’s discussed in Raz would be multiplexed into a

single stream for transmission to the next LSR. However, as explained above, a POSA would have understood that a LAG could be employed as the communications link between LSRs, particularly if there is a need to increase the bandwidth of the link between the LSRs. The focus of Raz is the use of aggregation to communicate individual packets of a high speed packet stream through subports within a LSR and identifying a selected subport in a data packet label that is sent to a previous node so that the packet is routed to the proper subport. A POSA would have understood that these focal points of Raz could be utilized regardless of whether Raz multiplexes its data streams onto a single link for transmission to the next LSR.

2. Raz Teaches or Renders Obvious Limitation 1.5: “sending said data packet from said first MPLS/LAG switch to a second MPLS/LAG switch via said single physical tunnel port.”

63. Paragraphs 95-96 of the Rouskas Declaration state Dr. Rouskas’s opinion that Raz “does not teach or render obvious” limitation 1.5. I disagree for the reasons stated in my original declaration and throughout this reply declaration.

a. Raz Teaches or Renders Obvious Limitation 1.5.

64. Paragraph 97 of the Rouskas Declaration states Dr. Rouskas’s interpretation of the operation of the embodiment disclosed in Column 7 of Raz. I agree that Dr. Rouskas correctly describes the operation of the embodiment in Column 7.

65. With respect to limitation 1.5, Dr. Rouskas first repeats his argument that “Raz’s subports do not teach or render obvious the claimed ‘LAG.’” EX2007, ¶98. I disagree for the reasons stated above in Paragraphs 12-62.

66. Dr. Rouskas further argues that “in the example of Raz relied upon by Petitioner for limitation 1.5, a POSA would have understood that subport 3 is *within* LSR B, and thus that subport 3 cannot be the claimed ‘single physical tunnel port’ ‘via’ which the data packet is sent ‘from said first MPLS/LAG switch to a second MSPLS/LAG switch,’ as recited in limitation 1.5.” EX2007, ¶99 (emphasis in original). I disagree for the reasons previously stated in this reply declaration. Raz is using aggregation to communicate individual packets of a high speed packet stream through subports within a LSR, and a POSA would have known to apply the same concept to the selection and aggregation of physical tunnel ports of a LAG between LSRs.

67. Dr. Rouskas also asserts that “because the example relied upon by Petitioner for limitation 1.5 involves LSR B receiving, not sending, the data packet via subport 3, Petitioner is wrong in asserting that the data packet would be sent from LSR B ‘to another LSR (which would correspond to the claimed second MPLS/LAG switch) via [subport 3].” EX2007, ¶100. This statement by Dr. Rouskas appears to misunderstand my discussion of limitation 1.5 in my original declaration. I agree that the example in Column 7 of Raz discloses that LSB generates the data packet

label that identifies subport number 3 as the subport on which LSR B will receive the data packet, and that label is sent to an upstream node. EX1006, Col. 7:30-48. The packet is then transmitted to from the upstream node to LSR B, wherein the packet is sent to subport number 3 when it is received at LSR B. Id. However, it was also my opinion that a POSA would have understood the data packet in LSR B could later be sent to another LSR (which corresponds to the claimed second MPLS/LAG switch) via the same subport (subport number 3). EX1004, ¶¶107-108. The later LSR corresponding to the claimed second MPLS/LAG switch would have generated the data packet label identifying the subport used by LSR B for transmitting the packet according to Raz, but a POSA would have understood that the subport could have again been subport 3. Dr. Rouskas acknowledges that the same subport could have been used to send the data packet to the next LSR. EX1022 at 65:18-68:13. Thus, the data packet would have been sent to the next LSR using the same subport.

68. Dr. Rouskas argues that “Petitioner’s position for limitation 1.5 is based on a mischaracterization of the term ‘forward[]’ in Raz.” EX2007, ¶101. Dr. Rouskas states that the portions of Raz that I cited “refer to a receiving LSR forwarding the received data packet to a subport *within* that same receiving LSR for input packet processing, not forwarding the data packet *via* the subport to some *subsequent* LSR.” Id. (emphasis in original). Further, Dr. Rouskas states that “Raz teaches that a receiving LSR selects only the subport used for *receiving* data packets at the given

LSR, and whatever subport is used for transmitting data packets to the next LSR is independently chosen by that next LSR.” Id. I agree with Dr. Rouskas that the sections of Raz quoted in Paragraph 107 of my original declaration relate to the subport to which data packets are forwarded when they are received by LSR B. EX1004, ¶107, quoting EX1006, Col. 7:39-45, 14:23-26. However, I disagree about what a POSA would have understood from these sections of Raz. As explained above, it is my opinion that a POSA would have understood from Raz that the same subport number could have been used to forward the packets to the next LSR, and the same subport number could have been used to receive the packets on the next LSR. As such, a POSA would have understood that the method disclosed by Raz could be used to create a data packet label identifying a physical tunnel port with sufficient bandwidth to handle a wide connection being transmitted from a first MPLS/LAG switch to a second MPLS/LAG switch. EX1006, Cols. 2:23-25, 7:7-16, 7:22-26, 11:3-12:9, Figure 5.

69. My opinion is not changed by the fact that the next LSR in Raz creates the data packet label that indicates the subport for transmitting the packet from LSR B to the next LSR. As I previously explained, the claims of the ’602 Patent recite that the data packets are sent to the second MPLS/LAG switch through the single physical tunnel port having the port serial number encoded in the data packet label. EX1001, Cols. 9:44-47, 10:62-64, 12:33-36. The claims do not require that the first

MPLS/LAG switch assign the single physical tunnel port to be used to send a data packet to the second MPLS/LAG switch. It would have been obvious from Raz that the same subport number could be used for the transmission of a packet from the preceding LSR to the first LSR and then from the first LSR to the second LSR. EX1006, Cols. 7:17-29, 7:39-45, 9:29-58, 14:23-26, Figures 3-4; see EX1022 at 65:18-68:13.

70. Dr. Rouskas also argues that Petitioner's and my analysis of limitation 1.5 "relies on what 'could' happen, not on what Raz actually discloses." EX2007, ¶102. I disagree with this statement as I have stated throughout my original declaration and this reply declaration that I am providing my opinion on what would have been obvious to a POSA in light of what was disclosed in Raz (and Ferguson). As such, I have provided my opinion that Raz renders the claims of the '602 Patent, including limitation 1.5 of Claim 1, obvious.

71. Dr. Rouskas argues that "a POSA would have understood that the example in Raz that Petitioner relies upon for limitation 1.5 does not include any discussion as to what happens to a data packet downstream of LSR B" and that "the subport used for the next hop to the next downstream LSR is chosen independently by that next LSR." EX2007, ¶103. I disagree with these arguments in Paragraph 103 of the Rouskas Declaration for the same reasons that I stated above when addressing Paragraph 101 of the Rouskas Declaration. See *supra* Paragraphs 68-69.

**b. The Petition and My Original Declaration Establish
that Raz Teaches or Renders Obvious Limitation 1.5.**

72. Paragraph 104 of the Rouskas Declaration states Dr. Rouskas's summary opinion that "the Petition fails to establish that Raz render[s] obvious claim limitation 1.5. EX2007, ¶104. I disagree for the reasons stated in my original declaration and throughout this reply declaration.

73. Dr. Rouskas repeats his argument that "a POSA would have understood that none of passages that Petitioner cites from Raz say anything about what would happen to a data packet *after* it leaves the subject LSR (i.e., LSR B in the relied-upon example in column 7 of Raz), let alone which port the data would travel on in a subsequent hop." EX2007, ¶105 (emphasis in original). I disagree with these arguments in Paragraph 105 of the Rouskas Declaration for the same reasons that I stated above when addressing Paragraph 101 of the Rouskas Declaration. See *supra* Paragraphs 68-69.

74. Dr. Rouskas also repeats his argument that "Raz teaches that in a given pair of sending/receiving LSRs, the receiving LSR (i.e., LSR B in Petitioner's assertion above) determines only the subport it uses for receiving a data packet, not sending the data packet, as the subport used for the next hop to the next downstream LSR is chosen independently by that next LSR." EX2007, ¶105. I disagree with these arguments in Paragraph 105 of the Rouskas Declaration for the same reasons that I

stated above when addressing Paragraph 101 of the Rouskas Declaration. See *supra* Paragraphs 68-69.

75. Paragraphs 106-108 of the Rouskas Declaration similarly repeat earlier arguments made by Dr. Rouskas about why Raz would not render the claims obvious. EX2007, ¶¶106-108. For example, Dr. Rouskas states his opinion in Paragraph 106 of the Rouskas Declaration that “a POSA would have understood that the way Raz teaches transmitting packets between LSRs is via a single high-speed link and not, as recited in limitation 1.5, ‘via [a] single physical tunnel port [of a LAG].’” Id., ¶106. Further, Dr. Rouskas restates his opinion that “the Petition fails to analyze specifically *how* or *why* Raz would purportedly be modified to transmit packets from a first MPLS/LAG switch to a second MPLS/LAG switch in any way, let alone in the claimed manner of limitation 1.5 and its related limitations (e.g., other limitations that recite the “first MPLS/LAG switch” recited in limitation 1.5).” Id., ¶107 (emphasis in original). Dr. Rouskas also repeats his assertion that “the Petition fails to discuss or mention how a POSA would purportedly have had a ‘reasonable expectation of success’ for any such modification.” Id., ¶108. Dr. Rouskas appears to repeat these arguments as part of his assertion that a POSA would not have been motivated to modify Raz. I disagree with these arguments in Paragraphs 106-108 of the Rouskas Declaration for the same reasons that I stated above in Paragraphs 12-15, 24-25, 37-41 and 53-54.

c. Raz Teaches or Renders Obvious Limitation 1.5.

76. Paragraphs 109-115 of the Rouskas Declaration state Dr. Rouskas's opinion that "even if a POSA would have modified Raz as Petitioner asserts, this would nonetheless fail to render obvious limitation 1.5." EX2007, ¶¶109-115. These paragraphs repeat many of the same arguments from Dr. Rouskas. For example, Dr. Rouskas compares Figure 1A of the '602 Patent to Figure 3 of Raz to argue that Raz is different from the '602 Patent because "a POSA would have understood Raz to teach that after a packet is received by a given LSR, the subport used for the next hop is not chosen by that given LSR but instead by the next downstream LSR." Id., ¶111. I disagree with Dr. Rouskas's opinion because he misstates what is required by the claims of the '602 Patent. The patent claims require only that the data packets are sent to the second MPLS/LAG switch through the single physical tunnel port having the port serial number encoded in the data packet label. EX1001, Cols. 9:44-47, 10:62-64, 12:33-36. The claims do not require that the first MPLS/LAG switch assign the single physical tunnel port to be used to send a data packet to the second MPLS/LAG switch. As such,

77. As such, it does not matter that, in Raz, the second LSR chooses the subport that will be used to transmit the data packet from the first LSR and receive the data packet at the second LSR. A POSA would have found it obvious that the same numbered subport could be used for the transmission of a packet stream from

LSR A to LSR B to LSR C in Figure 3 of Raz. EX1006, Cols. 7:17-29, 7:39-45, 9:29-58, 14:23-26, Figures 3-4; see EX1022 at 65:18-68:13 (Dr. Rouskas acknowledging that subport number 0 could have been used as part of the transmission of a packet stream from LSR A to LSR B to LSR C in Figure 3 of Raz). Further, it is my opinion that Dr. Rouskas is incorrect about what a POSA would have understood Raz to teach about transmission of a data packet from a first MPLS/LAG switch to a second MPLS/LAG switch. A POSA would have understood from the disclosures in Raz that the data packet label in a data packet could have been used to send the packet from the preceding node to the first MPLS/LAG switch to the second MPLS/LAG switch via the same physical tunnel port. EX1006, Cols. 7:17-29, 7:39-45, 9:29-58, 14:23-26, Figures 3-4.

78. Further, I note that, even if the claims of the '602 Patent do require that the first MPLS/LAG switch assign the single physical tunnel port to be used to send a data packet to the second MPLS/LAG switch, it remains my opinion that a POSA would have found the claims to be obvious in light of Raz. It would be a straightforward design choice in view of Raz to have the first MPLS/LAG switch assign the single physical tunnel port to be used to send a packet to the second MPLS/LAG switch. Given that Raz teaches that each successive LSR (or MPLS/LAG switch) determines the subport number on which a packet can be received, then a POSA would have found it obvious that a first LSR could determine

both the subport number on which it will receive a packet and the subport number on which a downstream second LSR will receive the packet.

79. Dr. Rouskas also argues that “[a] POSA would have understood this example [in column 7] in Raz as disclosing that LSR B selects subport 3, generates a label indicating subport 3, and then *receives* a packet from LSR A that is processed by LSR A’s output subport 3 and LSR B’s subport 3.” EX2007, ¶113. I disagree for similar reasons as those discussed above and because nothing more is required by the claims of the ’602 Patent. In the embodiment in Column 7 of Raz, a POSA would have understood the data packet in LSR B could later be sent to another LSR (which corresponds to the claimed second MPLS/LAG switch) via the same subport (subport number 3). EX1004, ¶¶107-108. The later LSR (which corresponds to the claimed second MPLS/LAG switch) would have generated the data packet label identifying the subport used by LSR B for transmitting the packet to the later LSR, but a POSA would have understood that the subport could have again been subport number 3. Dr. Rouskas acknowledges that the same numbered subport could have been used to send the data packet to the next LSR. EX1022 at 65:18-68:13. Thus, provided the bandwidth was available, the data packet would have been sent to the next LSR using the same subport, which is all that the claims of the ’602 Patent require.

80. However, I note that, even if the claims of the '602 Patent do require that the first MPLS/LAG switch assign the single physical tunnel port to be used to send a data packet to the second MPLS/LAG switch, it remains my opinion that a POSA would have found the claims to be obvious in light of Raz. It would be a straightforward design choice in view of Raz to have the first MPLS/LAG switch assign the single physical tunnel port to be used to send a packet to the second MPLS/LAG switch. Given that Raz teaches that each successive LSR (or MPLS/LAG switch) determines the subport number on which a packet can be received, then a POSA would have found it obvious that a first LSR could determine both the subport number on which it will receive a packet and the subport number on which a downstream second LSR will receive the packet.

F. Independent Claim 15

81. Dr. Rouskas asserts that “Raz does not render obvious independent claim 15 of the '602 patent.” EX2007, ¶115. I disagree for the reasons discussed in my original declaration and throughout this reply declaration.

1. Raz Teaches or Renders Obvious a “LAG” Connected to a “second MPLS/LAG switch.”

82. Dr. Rouskas first repeats his opinion that “Raz’s subports do not teach or render obvious a ‘LAG’ connected to a ‘first MPLS/LAG switch’ to a ‘second MPLS/LAG switch.’” EX2007, ¶¶116-119. I disagree for the same reasons stated above in Paragraphs 12-62.

2. Raz Teaches or Renders Obvious Limitations [15.5]-[15.8] Regarding a “Mapper.”

83. Paragraphs 120-132 of the Rouskas Declaration contain Dr. Rouskas’s argument that Raz does not teach or render obvious the “mapper” recited in limitations [15.5]-[15.8] of Claim 15. EX2007, ¶¶120-132. I disagree for the reasons stated below.

84. First, Dr. Rouskas argues that “the Petition does not explain if or how Raz’s subport forwarding module is purportedly configured to perform the functions recited in limitations 15.6-15.8.” EX2007, ¶123. I disagree. Paragraph 171 of my original declaration explains that Raz discloses that its apparatus can be implemented using a network processor, a FPGA, an ASIC or a combination of these. EX1004, ¶171; EX1006, Cols. 2:3-8, 2:33-40, 3:39, 6:27-29, 7:54-8:13, 12:25-30, 12:57-31, 13:56-61. I explained in my original declaration that a POSA would have understood from this disclosure that the apparatus of Raz includes a mapper which performs the recited functions of receiving a packet, detecting the data packet label in the packet and using the data packet label to the packet to the next node based on the pathway identified in the data packet label, as recited in limitations [15.6]-[15.8]. Id. For example, Raz discloses a “port forwarding module” that can be implemented on the network processor, a FPGA or ASIC, and the port forwarding module corresponds to the claimed mapper. EX1006, 6:65-7:5, 7:30-58, 12:61-13:5, Figures 1, 6.

85. Dr. Rouskas summarizes the functions recited in limitations [15.6]-[15.8] in Paragraph 120 of the Rouskas Declaration, and Raz teaches or renders obvious each of them. EX2007, ¶120. For instance, Dr. Rouskas asserts in Paragraph 120 of the Rouskas Declaration that the claimed mapper must “receive a data packet from an upstream node” (limitation 15.6), and Raz discloses that “[t]he port forwarding module functions to receive the 10G packet stream...” EX1006, Col. 7:49-51; see id., Col 7:42-45. Dr. Rouskas also states that the claimed mapper must “detect said data packet label in said data packet” (limitation 15.7), and Raz discloses that the port forwarding module “examine[s] the label in each packet.” Id. Further, Dr. Rouskas argues that, based on the data packet label, the claimed mapper “send[s] said data packet to the second MPLS/LAG switch via said single physical tunnel port” (limitation 15.8). Here, Raz states that the port forwarding module forwards the packet “to one of the subports in accordance with the label.” Id., Col. 7:51-52; see id., Col 7:42-45. Thus, the port forwarding module is inspecting the data packet label, determining the subport to which the data packet should be sent, and forwarding the data packet to that subport. It would have been obvious to a POSA from this disclosure in Raz that the port forwarding module could also be applied to select a physical tunnel port over which to send a data packet from LSR B (which corresponds to the claimed first MPLS/LAG switch) to the next LSR (which corresponds to the claimed second MPLS/LAG switch). Thus, my original

declaration explains how Raz discloses or renders obvious a port forwarding module that corresponds to the claimed mapper that performs the functions recited in limitations [15.6]-[15.8]. EX1004, ¶171.

86. Second, Dr. Rouskas asserts that “[r]egardless of Petitioner’s analyses, it is my opinion that Raz’s subport forwarding module does not to meet the combination of limitations 15.5–15.8 and thus cannot constitute the claimed ‘mapper’ as Petitioner asserts.” EX2007, ¶124. I disagree for the reasons discussed above. Further, I note that the ’602 Patent discloses that claimed “mapper” only as a generic device that performs the recited functions. See, e.g., EX1001, Col. 3:23-29.

87. Dr. Rouskas asserts that I identified port forwarding module 22 in Figure 1 and subport forwarding modules 126 and 132 in Figure 6 as corresponding to the claimed “mapper,” and I agree. EX2007, ¶125; EX1004, ¶171. Dr. Rouskas notes that I also cite parts of Raz’s disclosure related to Figure 3, but he argues that Figure 3 “does not disclose a specific subport forwarding module.” Id., ¶126. I disagree with Dr. Rouskas’s discussion of Figure 3. Raz states that “[a]n example network illustrating the *subport forwarding* and provisioning mechanism of the present invention is shown in FIG. 3.” EX1006, Col. 9:29-31 (emphasis added). In Figure 3, the “layer 2 switch” or “L2 Switch” functionally acts as the subport forwarding module and performs similar functions as the subport forwarding modules shown in Figures 1 and 6.

88. Dr. Rouskas argues that a POSA would have understood that “the subport forwarding module just directs such a received data packet to a subport within the LSR for processing.” EX2007, ¶127. Dr. Rouskas also asserts that “Raz teaches that if its subport forwarding module handles an outbound packet being sent to a subsequent different LSR as recited in limitation 15.8, then the subport forwarding module does not send the outbound packet to the subsequent LSR *via a subport* (which Petitioner relies on for the claimed ‘single physical tunnel port’) as required by limitation 15.8.” Id., ¶128 (emphasis in original). I disagree with these opinions from Dr. Rouskas. As I have explained above, a POSA who reviewed Raz would have understood that the techniques used to forward packets within an LSR also could be applied to a LAG used to communicate a high speed packet stream between LSRs. A POSA would have known that the subport forwarding module within a LSR of Raz could have been applied as a mapper to select a physical tunnel port of a LAG used to communicate a high speed data stream between LSRs (or MPLS/LAG switches). As such, Raz’s discussion of its port forwarding module teaches or renders obvious a mapper that could perform the function of limitation [15.8].

89. Third, Paragraphs 129-131 of the Rouskas Declaration repeat arguments previously made by Dr. Rouskas about the disclosures of Raz. I disagree for the reasons discussed in my original declaration and throughout this reply

declaration. EX2007, ¶¶129-131. However, I note that Dr. Rouskas states that “Petitioner’s obviousness arguments for claim 15 do not even mention Raz’s subport forwarding module.” Id., ¶129. That is incorrect. Page 46 of the Petition states, “Raz teaches a *forwarding module* that performs these functions and thus corresponds to the mapper recited in Element [15.5].” Paper 1 at 46 (emphasis added).

90. Fourth, Dr. Rouskas argues that “Petitioner fails to establish that Raz teaches or renders obvious limitation 15.8 for the same reasons as limitation 1.5.” EX2007, ¶132. I disagree for the reasons stated above with respect to limitation [1.5].

G. Independent Claim 26

91. Paragraphs 133-134 of the Rouskas Declaration contain Dr. Rouskas’s argument that “Raz does not render obvious independent claim 26 of the ’602 patent” for the same reasons as Claim 1. EX2007, ¶¶133-134. Dr. Rouskas asserts that Claim 26 is “substantially similar” to Claim 1, and he does not provide any new opinions relating to Claim 26. Therefore, I disagree with Dr. Rouskas’s analysis of Claim 26 for the same reasons as those stated in my original declaration and those previously stated in this reply declaration.

VII. GROUND 2: THE COMBINATION OF RAZ AND FERGUSON RENDERS OBVIOUS CLAIMS 1-26

92. Dr. Rouskas argues that “the combination of Raz and Ferguson does not render obvious claims 1-26, including because (i) a POSA would not have

modified Raz based on Ferguson to arrive at the claimed inventions of the '602 patent, (ii) Petitioner has failed to establish a motivation to modify Raz with Ferguson to arrive at the claimed inventions of the '602 patent, (iii) Petitioner has failed to establish a reasonable expectation of success for any such modifications, and (iv) even if Raz is modified based on Ferguson as Petitioner asserts, the claims are not rendered obvious.” EX2007, ¶135. I disagree for the reasons stated in my original declaration and the reasons stated throughout this reply declaration.

93. As an initial matter, Dr. Rouskas notes that Ground 2 stated in the Petition incorporates analysis from Ground 1. EX2007, ¶136. Therefore, Dr. Rouskas “similarly incorporate[s] by reference” his arguments for Ground 1 into his arguments for Ground 2. Id. As such, I incorporate by reference my opinions on Ground 1 stated in my original declaration and this reply declaration into my opinions on Ground 2.

A. A POSA Would Have Modified Raz Based on Ferguson to Arrive at the Claimed Inventions of the '602 Patent.

94. Dr. Rouskas asserts that “a POSA would not have been motivated to modify Raz based on Ferguson to apply Raz’s teachings to communication via a LAG in an MPLS network between two MPLS/LAG switches, as recited in the challenged claims of the '602 patent.” EX2007, ¶137. I disagree for the reasons stated below.

95. First, Dr. Rouskas repeats many of his arguments from his discussion of Raz in Ground 1. EX2007, ¶138. I disagree with Dr. Rouskas on this point for the reasons stated in my original declaration and those above in Ground 1.

96. Second, Dr. Rouskas argues that “a POSA would not have been motivated to modify Raz’s teachings regarding subports *within* an LSR to apply to communications *between* LSRs in view of Ferguson.” EX2007, ¶139 (emphasis in original). Paragraph 140 of Dr. Rouskas’s Declaration provides his recitation of the link aggregation being performed in Ferguson, and I generally agree with his discussion. Id., ¶140.

97. Dr. Rouskas again repeats his argument that “a POSA would have understood Raz to be specifically and solely directed to a provisioning mechanism for *inside* a network device such as an LSR and teaches away from applying its subport-related teachings to an external link between two LSRs.” EX2007, ¶141 (emphasis in original). I disagree for the reasons stated above in Paragraphs 12-15. Further, Dr. Rouskas asserts that “despite Ferguson teaching that Ferguson’s own techniques may apply within a router, a POSA would not have been motivated to take Raz’s provisioning mechanism for within an LSR and attempt to apply it to communications between LSRs.” EX2007, ¶142. Dr. Rouskas believes this is “because Ferguson’s teaching is about taking techniques for communicating between routers and applying them to within a router, not taking techniques for

within a router (such as Raz’s mechanism) and applying them to communications between routers.” Id. I disagree with these opinions from Dr. Rouskas. Ferguson discloses link aggregation techniques between routers and states that the same techniques could be applied within a router or other network device. EX1007, Col. 5:61-6:9. As I explained in my original declaration, a POSA would have understood that Ferguson is teaching that the techniques used to communicate high speed data streams between routers or switches in an MPLS network can also be used to communicate high speed data streams within a router or switch in an MPLS network, and vice versa. EX1004, ¶¶245, 250, 300. The teachings of Ferguson would have motivated a POSA to take the techniques used to communicate packets within the LSR of Raz and use them to communicate packets between LSRs or switches in the same MPLS network. Further, I note that this disclosure in Ferguson undermines Dr. Rouskas’s earlier argument that data packets are transmitted inside a router or switch in a different way than they are transmitted between routers or switches.

98. Dr. Rouskas argues to the contrary that “Ferguson’s teaching about applying techniques within a router is limited to Ferguson’s own techniques and does not apply to Raz’s techniques. EX2007, ¶142. But Dr. Rouskas provides no support for or explanation of this opinion or why it would be correct. As discussed above, I disagree with it.

99. Dr. Rouskas also argues that “a POSA would not have been motivated to modify Raz based on Ferguson because Ferguson and Raz address different problems.” EX2007, ¶143. I disagree. As I explained in my original declaration, it is my opinion that Raz and Ferguson address the same technology and attempt to resolve the same issues of maximizing the use of bandwidth when trying to communicate high speed packet streams. Both Raz and Ferguson relate to the use of an MPLS network to communicate data packets. EX1006, Cols. 1:65-2:8, 2:26-31, 6:24-33, Figures 1 and 3-4; EX1007, Cols. 1:57-2:3, 2:22-26, 3:36-67, 8:10-12, Figures 2A-8. Both Raz and Ferguson discuss the use of a LAG in an MPLS network to communicate the data packets. EX1006, Cols. 2:41-67, 6:34-45, 7:7-16, 14:19-22, Figure 1; EX1007, Cols. 1:21-26, 1:43-53, 3:36-4:19, 6:10-31, Figures 2A-2C. Ferguson discloses the utilization of an Ethernet physical data port in a LAG to communicate MPLS packets between routers or switches in an MPLS network, which is the same subject matter as Raz. EX1007, Cols. 1:21-26, 1:43-53, 3:36-4:19, 6:10-31, Figures 2A-2C; EX1006, Cols. 1:65-2:8, 2:41-67, 6:34-45, 7:7-16, 14:6-26, 14:50-52, Figure 1.

100. Both Raz and Ferguson are directed to solving the problem of ensuring enough bandwidth is available to communicate high speed packet streams through an MPLS network. EX1006, Cols. 10:60-11:12, 14:33-41, 15:47-55, 17:1-9, Figure 5; EX1007, Cols. 1:28-42, 2:54-57, 4:55-60. Raz discusses allocating the bandwidth

of subports within an LSR in order to handle high speed packet streams transiting the LSR. Raz explains that its “invention also comprises a mechanism to improve the ability to handle wide connections ... that require a relatively large amount of CIR bandwidth.” EX1006, Col. 10:60-64; see id., Cols. 10:65-11:2. Raz explains that its “invention provides a scheme for allocating LSP bandwidth to subports that helps in solving the problem described above in a way that provides a tradeoff between leaving subports empty for wide LSPs and spreading traffic between subports for best utilizing the bandwidth of the link (e.g., for EIR traffic).” EX1006, Col. 11:3-8. “The central idea is to leave one or more subports empty (i.e., no bandwidth used) in the event a wide connection is to be allocated.” Id., Col. 11:8-10. “The allocated bandwidth, however, is still distributed among the subports in such a way that EIR traffic is supported.” Id., Col. 11:10-12.

101. My original declaration explained that Ferguson also addresses the need to have bandwidth available for high speed packet streams when implementing LAG to communicate data packets in an MPLS network. EX1007, Cols. 1:28-42, 2:54-57, 4:55-60. Ferguson explains that load balancing of MPLS packets in conventional systems “may not be able to achieve substantial distribution of the traffic among the paths, which may result in congestion on one data path and unused bandwidth on another.” Id., Col. 4:55-59; see id., Col. 4:59-60. Ferguson, like Raz, focuses on improving the use of bandwidth when using a LAG in an MPLS network.

Id., Cols. 1:28-42, 2:54-57, 4:55-60. Further, like Raz, Ferguson explains that it can “use one or more fields directly from one or more of [the] MPLS labels” to select the path for communicating data packets. Id., Col. 8:10-12. A POSA thus would consider Raz and Ferguson to be analogous art references that address similar problems.

102. Dr. Rouskas attempts to distinguish Raz and Ferguson by arguing that “[a] POSA would have understood that, unlike Raz, Ferguson assumes the routers have sufficient processing capacity to handle the data communications that Ferguson describes distributing.” EX2007, ¶143. I do not agree with this reading of a distinction or difference in Ferguson and Raz. A POSA would have understood from the disclosures in Ferguson that techniques for utilizing an Ethernet physical data port in a LAG to communicate data packets between routers or switches in an MPLS network are also applicable to the use of subports transmitting the data packets within the routers or switches, and vice versa. EX1007, Cols. 5:61-6:6. For example, Dr. Rouskas cites a portion of Column 2, lines 47-53 of Ferguson, but a complete reading of that section of Ferguson demonstrates that Ferguson is discussing the fact that its invention can be used within a network device:

As another example, the *techniques may be used to distribute MPLS traffic across internal data paths within a network device*, e.g., across multiple data paths between an input interface

card and an output interface, across internal high-speed switching components, or across multiple forwarding engines within the network device.

EX1007, Col. 2:47-53 (emphasis added). Similarly, Dr. Rouskas refers to Column 6, lines 2-6 of Ferguson, but that portion of the specification states that Ferguson’s “techniques may be used by a router to *distribute packets across internal data paths* that begin at the same input interface of the router and end at the same output interface of the router...” Id., Col 6:2-6 (emphasis added). The sections quoted by Dr. Rouskas thus support my opinion that a POSA would have known that Raz and Ferguson address the same problem of maximizing the use of bandwidth.

103. Dr. Rouskas further argues that “a POSA would have understood that Raz and Ferguson use fundamentally different methods.” EX2007, ¶144. Dr. Rouskas states that “[a] POSA would have understood that Ferguson teaches that packets of a single common LSP are distributed across multiple paths or interconnects of an aggregated link” while “Raz’s provisioning mechanism, in contrast, teaches that all packets of a given LSP are assigned to the same particular subport in a group of subports, and that different LSPs can be provisioned for different subports in the group.” Id. (including annotated figures from Raz and Ferguson). I disagree. As discussed above, Ferguson teaches that aggregation methods can be used to increase bandwidth usage when transmitting high speed

packets between two routers or switches in a network. EX1007, Col. 1:28-42, 2:47-57, 4:55-60. Indeed, Dr. Rouskas acknowledges that a LAG is treated as a “single logical entity.” EX1022 at 13:10-21. A POSA would have understood from Ferguson that the methods disclosed in Raz of using different subports in an LSR to increase bandwidth and identifying the selected subport in the data packet label could be implemented to select a physical tunnel port of a LAG between devices to maximize the use of bandwidth when transmitting packets between devices. It would have been obvious to a POSA that this would not change just because Ferguson distributes packets of a common LSP across multiple paths of the aggregated link.

104. Dr. Rouskas also argues that “a POSA would have understood that Ferguson and Raz teach different methods regarding provisioning packet labels and paths.” EX2007, ¶145. Dr. Rouskas asserts that “[a] POSA would have understood that Raz emphasizes that its subport assignment and label generation comes from downstream” while “Ferguson, however, does not include any such teachings regarding a packet’s label and path being chosen by a downstream router.” Id. I disagree with these opinions from Dr. Rouskas. First, Ferguson does not foreclose the possibility that the path chosen to transmit packet streams could be based on a path chosen by a downstream router and identified in a packet label sent to the upstream device; Ferguson is silent on this possibility, and Raz demonstrates that a POSA would have understood it to be a possibility, as I have explained above.

Second, even if Ferguson did not use this method of label provisioning, it would not change my opinion that a POSA would have known to modify Raz based on the teachings of Ferguson. As I explained above, both references address the problem of how to maximize bandwidth when transmitting high speed packet streams. A POSA would have understood that Ferguson teaches relevant techniques for using link aggregation to accomplish this goal, regardless of the method of label provisioning discussed in Ferguson. I have not provided an opinion that Raz's method of label provisioning should be changed in light of Ferguson.

105. Paragraph 146 of the Rouskas Declaration repeats Dr. Rouskas's argument that "a POSA would not have applied Raz's subport-related teachings to communications between two MPLS/LAG switches." EX2007, ¶146. I disagree for the reasons stated in my original declaration and throughout this reply declaration.

B. Petitioner Establishes a Motivation to Modify Raz with Ferguson to Arrive at the Claimed Inventions of the '602 Patent.

106. Dr. Rouskas argues that "the section of the Petition for Ground 2, and evidence cited therein, fails to establish that a POSA would have modified Raz with Ferguson to meet independent claims 1, 15, or 26, including because petitioner fails to explain specifically *why* or *how* Raz would purportedly be modified based on Ferguson to meet the claim limitations. Pet. 52-60." EX2007, ¶147 (emphasis in original); see id., ¶163. I disagree because it is my understanding that an obviousness analysis does not require that the teachings of Ferguson must be bodily incorporated

into Raz in order for the combination to be obvious. Further, I disagree with Dr. Rouskas for the reasons stated below.

107. Dr. Rouskas asserts that “Petitioner’s analysis for Ground 2 is not tied to the claim limitations because it does not perform a limitation-by-limitation analysis of the alleged combination of Raz and Ferguson.” EX2007, ¶148. I disagree. As Dr. Rouskas acknowledges in Paragraph 148 of the Rouskas Declaration, Ground 2 in the Petition incorporates by reference the analysis in Ground 1. Paper 1 at 52. The Petition then explains specific ways that Ferguson supplements what was disclosed by Raz, and that the combination of Raz and Ferguson discloses or renders obvious the limitations of the claims of the ’602 Patent. Id. at 52-60. It is my understanding that this is a specific way of presenting the obviousness argument for Ground 2.

108. Dr. Rouskas also argues that “Petitioner’s analysis for Ground 2 fails to explain specifically why or how a POSA would have purportedly modified Raz based on Ferguson.” EX2007, ¶149. I disagree for the reasons stated in my original declaration and the reasons set forth above in Paragraph 92-103.

109. Further, Paragraphs 150-153 of the Rouskas Declaration set forth Dr. Rouskas’s opinions that “Raz and Ferguson address different problems and use different contrasting problems,” my analysis addresses only the “mere possibility” of combining Raz and Ferguson and fails to address why the modifications to Raz

would be “desirable.” I disagree with each of these opinions for the reasons stated in my original declaration and the reasons set forth above in Paragraphs 92-106. In addition, I note that my analysis explains why a POSA would have (and not just could have) modified Raz based on the teachings of Ferguson to maximize the usage of bandwidth when transmitting high speed packet streams.

110. Dr. Rouskas further argues that Ferguson and Raz are not “compatible” because “there are fundamental differences between the methods of Ferguson and Raz, including regarding how the two references handle packets of a given LSP and provision labels/paths.” EX2007, ¶154. Dr. Rouskas does not state what these “fundamental differences” are. In my opinion, any differences between Ferguson and Raz are not fundamental, and it would be within a POSA’s ability to combine their teachings. Further, I disagree for the reasons stated above in Paragraphs 92-106.

111. Dr. Rouskas states that the discussion of Ferguson’s “aggregate interface” on pages 53-54 of the Petition “does not mention or address Raz, much less explain why or how a POSA would have purportedly modified or combined Raz with Ferguson.” EX2007, ¶155. I disagree. Dr. Rouskas ignores that this section of the Petition begins on page 52 of the Petition. The opening sentence of this discussion of Ferguson states that “*Ferguson builds on the previous analysis of Raz* by disclosing a system for communicating packets between switches and routers in

an MPLS network that addresses the same concerns about allocating the bandwidth of physical data ports in a LAG to deal with the demands of communicating high-speed packet streams as are addressed by Raz.” Paper 1 at 52 (emphasis added) (citing EX1004, ¶¶240-280, ¶¶295-336, ¶¶348-390). Thus, this section of the Petition both mentions Raz and explains how a POSA would have combined Raz and Ferguson.

112. Dr. Rouskas further states that the analysis in the Petition fails because it “merely asserts a possibility of how Raz ‘could’ be implemented.” EX2007, ¶156. I disagree. First, to the extent Dr. Rouskas is asserting that Ferguson must be bodily incorporated into Raz in order for the combination to be obvious, it is my understanding that this is not required. Second, the Petition provides an explanation of why a POSA would have been motivated to combine the teachings of Raz and Ferguson. For example, the Petition cites Ferguson in explaining that “a POSA reviewing Ferguson *would have understood that it would be desirable to implement* the techniques in Raz for assigning a physical tunnel subport within an LSR to assign a physical tunnel port to communicate packets along ‘physical interconnects’ between ‘two switches’ in an MPLS network” Paper 1 at 53 (emphasis added) (citing EX1007, Col. 1:22-27, 1:57-66; EX1004, ¶245). The Petition then states that “a POSA *would* have been motivated to combine the teachings of Raz and Ferguson.” Paper 1 at 53 (emphasis added) (citing EX1004, ¶¶246-250). In addition, the Petition

states that “Ferguson *would have taught* a POSA that the method of assigning a subport with appropriate bandwidth within the LSR of Raz could also be implemented between network devices (such as MPLS/LAG switches) in an MPLS network.” Paper 1 at 55 (emphasis added) (citing EX1004, ¶245).

113. Dr. Rouskas also argues that “a POSA would have understood that Ferguson actually teaches the opposite [of Raz], as Ferguson describes techniques in reference to communication *between* routers and then says that those inter-router techniques also ‘may be ... applied’ to within a router.” EX2007, ¶157 (emphasis in original). Dr. Rouskas also states that “a POSA would have understood that Ferguson teaches [lessons] about ‘its’ techniques but not Raz’s techniques.” Id. Dr. Rouskas asserts that “although Ferguson teaches that its communications between routers can also apply within a single router, a POSA would have understood that this does not mean the opposite is true for Raz—i.e., Ferguson’s teaching does not mean that Raz’s teachings about communications within a single router can apply to communications between routers.” Id. I disagree. As I have explained above, a POSA would have understood Ferguson to teach that its link aggregation techniques for transmitting packets between routers “may be readily applied to internal data paths within a device (e.g., a router).” EX1007, Cols. 5:61-6:9. This is because packets are communicated the same way within a device as between devices for the purposes of selecting and using a subport within a device or physical tunnel port

between devices. The teachings of Ferguson would have motivated a POSA to take the techniques used to communicate packets via subports within the LSR of Raz and use them to communicate packets over a LAG between LSRs or switches in the same MPLS network. Dr. Rouskas argues that Ferguson's techniques do not apply to Raz's techniques, but Dr. Rouskas provides no support for this opinion and no technical explanation as to why Ferguson's techniques would not apply to Raz.

114. Dr. Rouskas asserts in Paragraph 158 of the Rouskas Declaration that neither Page 56 of the Petition nor Paragraph 245 of my original declaration "contain any citation or discussion of Raz's actual specific teachings." EX2007, ¶158. I disagree. Paragraph 245 of my original declaration ends with a statement that the teachings of Ferguson "would have motivated a POSA to take the techniques used to communicate packets within the LSR *of Raz* and use them to communicate packets between LSRs or switches in the same MPLS network." EX1004, ¶245 (emphasis added). Further, Paragraphs 242-243 in the same section of my original declaration discuss the specific teachings of Raz (and incorporate my analysis in Ground 1) and form the basis for my above-quoted opinion in Paragraph 245 of my original declaration. Similarly, the discussion of the specific teachings of Raz (and incorporation of the discussion in Ground 1) on Pages 52-53 of the Petition form the basis for the later conclusions about modifying Raz stated on Page 56 of the Petition.

As such, both my original declaration and the Petition provide an explanation of the operation of Raz and how it would be modified in view of Ferguson.

115. Dr. Rouskas also argues in Paragraph 158 of the Rouskas Declaration that “there are fundamental differences between the methods of Ferguson and Raz.” EX2007, ¶158. I disagree for the reasons stated in my original declaration and the reasons stated above in Paragraphs 92-106.

116. Dr. Rouskas also states his opinion that “Raz could not be applied the ‘same way’ for both within and between LSRs.” EX2007, ¶159. I disagree for the reasons stated in my original declaration and throughout this reply declaration.

117. Dr. Rouskas argues “a POSA would have understood that Raz is not concerned with ‘bandwidth ... to communicate high-speed packet streams through an MPLS network’ as Petitioner asserts.” EX2007, ¶160. In Dr. Rouskas’ opinion, “[a] POSA would have understood that Raz is instead concerned with the problem of processing capacity/bandwidth *within* a network device for handling a high-speed packet stream communicated through a network.” Id. I disagree with this characterization of Raz, which explains that its “invention also comprises a mechanism to improve the ability to handle wide connections ... that require a relatively large amount of CIR bandwidth.” EX1006, Col. 10:60-64; see id. Cols. 10:65-11:12. The fact that Raz focuses on bandwidth issues within a LSR does not change the fact that the overall problem addressed by Raz is how to allocate

bandwidth to transmit “wide connections” through a network. It would have been obvious to a POSA that Raz’s techniques for allocating subports within the LSR to maximize bandwidth would have been applicable to the links between LSRs. Once a high speed packet stream leaves an LSR, there is still the same concern for ensuring that enough bandwidth is available to transmit the high speed packet stream throughout the network, and a POSA would have found it obvious to modify Raz to apply a LAG between LSRs to accomplish the goal of maximizing bandwidth, particularly in view of the teachings of Ferguson.

118. Dr. Rouskas provides his opinion that “Ferguson does not describe techniques for within a router and then state that those methods can be extended to apply between routers.” EX2007, ¶161. Further, Dr. Rouskas asserts that “[a]t most, a POSA would have understood that this disclosure in Ferguson teaches that Ferguson’s techniques can apply to both between and within routers.” Id. I agree with Dr. Rouskas that Ferguson teaches that its techniques apply to both between and within routers. EX1007, Cols. 5:61-6:9. I disagree, however, with Dr. Rouskas’s limited application of this teaching. As I discussed above, it is my opinion that a POSA would have found it obvious from Ferguson to take the techniques used to communicate packets within the LSR of Raz and use them to communicate packets between LSRs or switches in the same MPLS network. See EX1004, ¶245.

119. Dr. Rouskas also argues that “a POSA would not have understood this teaching in Ferguson to apply to Raz and would not have been motivated by this teaching in Ferguson to extend Raz’s mechanism for within a router to apply to between routers.” EX2007, ¶162. I disagree for the reasons stated above.

C. Petitioner Establishes a Reasonable Expectation of Success.

120. Dr. Rouskas argues that “the Petition does not contain persuasive argument or evidence that a POSA would have had a reasonable expectation of success for modifying Raz based on Ferguson to meet the challenged claims.” EX2007, ¶164; see id., ¶¶165-166. I disagree. As I explained in Paragraphs 14 and 17 of my original declaration, it is my understanding that the obviousness analysis requires that, where there is a reason to modify or combine the prior art to achieve the claimed invention, there must also be a reasonable expectation of success in so doing to render the claimed invention obvious. However, it is my understanding that the Petition and my supporting opinions do not have to specifically use the words “reasonable expectation of success” in order to establish that a modification of the prior art will be successful. Further, it is my opinion that the Petition, my original declaration and this reply declaration all provide sufficient explanation why a POSA reasonably would have expected success in modifying the teachings of Raz in view of the teachings of Ferguson. Paper 1 at 55-59; EX1004, ¶¶245-250, 258-259, 264, 269, 274, 279; see Paragraphs 92-118 above.

121. Dr. Rouskas also asserts his opinion that “a POSA would not have had a reasonable expectation of success of modifying Raz’s mechanism based on Ferguson to meet the claims, as a POSA would not have even had a reasonable expectation of success of somehow applying Raz’s mechanism to communications between two network devices (such as the claimed MPLS/LAG switches) to begin with, even in view of Ferguson.” EX2007, ¶167. Dr. Rouskas does not provide any explanation for this opinion, other than to cite his previous opinions in the Rouskas Declaration. I disagree with Dr. Rouskas for the reasons stated in my original declaration and throughout this reply declaration.

D. When Raz is Modified Based on Ferguson, the Claims Are Rendered Obvious.

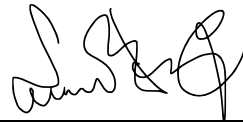
122. Dr. Rouskas asserts that “even if a POSA would have modified Raz based on Ferguson as Petitioner asserts, this would nonetheless fail to render obvious independent claims 1, 15, and 26.” EX2007, ¶168. In support of this opinion, Dr. Rouskas repeats several of his previous arguments for Grounds 1 and 2 without further explanation. Id., ¶¶169-171. I disagree for the reasons stated in my original declaration and throughout this reply declaration.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false

statements and the like so made are punishable by fine or imprisonment, or both,
under Section 1001 of Title 18 of the United States Code.

Executed this 20th day of February, 2024.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Samrat Bhattacharjee', written over a horizontal line.

Samrat Bhattacharjee, Ph.D.