UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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CISCO SYSTEMS, INC.,

Petitioner,

v.

CORRIGENT CORPORATION,

Patent Owner.

_____

Case IPR2023-00447

Patent No. 9,118,602

_____

VIRTUAL VIDEOTAPED

DEPOSITION OF: SAMRAT BHATTACHARJEE, PhD

DATE: Monday, November 13, 2023

TIME: 9:06 a.m. through 12:20 p.m.

TAKEN BY: Attorneys for the Plaintiff(s)

COURT REPORTER: MADONNA M. FARRELL

Registered Professional Reporter

CaseViewNet Realtime Reporter

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20
21
22
23 (REPORTER'S NOTE: All quotations from exhibits are reflected in the manner in
24 which they were read into the record and do not necessarily denote an exact quote from
25 the document.)

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1 VIDEOGRAPHER: Good morning. We are
2 now on the record. Today's date is Monday,
3 November 13, 2023, and the time is now
4 approximately 9:06 a.m.
5 This begins the videotape deposition of
6 Dr. Samrat Bhattacharjee in the matter of
7 Cisco Systems, Inc. versus Corrigent
8 Corporation.
9 Will counsel please identify yourselves
10 for the record.
11 MR. HOLT: This is Benjamin Holt for
12 the patent owner Corrigent Corporation
13 for -- from Steptoe & Johnson, and with my
14 today is my colleague Kate Cappaert also
15 from Steptoe & Johnson.
16 MR. BLAKE: Good morning. This is
17 Jeffrey Blake for the firm of Merchant &
18 Gould. I'm here on behalf of the witness,
19 Dr. Samrat Bhattacharjee, and on behalf of
20 the petitioner in this IPR, Cisco Systems.
21 VIDEOGRAPHER: Will you the court
22 reporter please swear in the witness.
23 SAMRAT BHATTACHARJEE, PhD, being first
24 duly sworn, testified as follows:
25 //

1 EXAMINATION

2 BY MR. HOLT:

3 Q. Dr. Bhattacharjee, can you please state your

4 full name for the record?

5 A. Samrat Bhattacharjee.

6 Q. And you've been deposed before, right?

7 A. Yes, I have.

8 Q. So even though you have been deposed before,

9 I still want to cover some basic ground rules so

10 that we're on the same page, especially in view of

11 the fact that this deposition is being taken

12 remote. Okay?

13 A. Okay.

14 Q. First, please let me know if you need a

15 break, and we'll take a break as soon as possible

16 based on where we are in that particular line of

17 questioning. Okay?

18 A. Okay.

19 Q. The court reporter is here to record what we

20 are saying, so I ask that you please answer each

21 question with a clear, verbal response. Okay?

22 A. Okay.

23 Q. You're entitled to fair, clear questions.

24 So if you don't understand one of my questions for

25 any reason, please say so and I can repeat the

1 question, or if need be, I'll do my best to
2 rephrase it. Okay?
3 A. Okay.
4 Q. Okay. Your attorney may make objections.
5 If he does, you're still obligated to answer the
6 question unless your attorney specifically
7 instructs you not to answer the question. Okay?
8 A. Okay.
9 Q. Do you understand that your testimony today
10 will be under oath and that you must answer each
11 question truthfully?
12 A. Yes, I do.
13 Q. Is there any reason why you cannot testify
14 truthfully and accurately today?
15 A. There is none.
16 Q. Because this deposition is remote, I want to
17 ask, did you bring any documents to the deposition
18 with you?
19 A. No.
20 Q. Okay. Are you on a computer or a tablet?
21 A. I'm on a computer.
22 Q. Okay. Do you have any other tabs or
23 documents open on the computer?
24 A. No. No, I've just closed everything.
25 Q. Okay. Yeah, I ask that during the

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Patent Owner Corrigent Exhibit 2008-0006

1 deposition, you should not have any miscellaneous
2 tabs or documents opened. Okay?
3 A. Yes. I do have an extra monitor so that if
4 I get documents I can put it on a larger monitor;
5 this is a laptop. But if I do that, I'll let you
6 know.
7 Q. Okay. That sounds great.
8 On that note, I'm going to publish the first
9 exhibit.
10 Dr. Bhattacharjee, do you have access to the
11 exhibit-publishing software from Magna?
12 A. I don't. I mean, I can -- if that was in
13 the email, I can open it up and bring it up.
14 MR. HOLT: Let's -- let's go off the
15 record.
16 VIDEOGRAPHER: This ends Media Number 1
17 in the deposition of Samrat Bhattacharjee.
18 The time is 9:11 a.m. We're going off the
19 record.
20 (A recess transpired from 9:11 a.m.
21 through 9:12 a.m.)
22 VIDEOGRAPHER: This begins Media Unit
23 Number 2 in the deposition of Dr. Samrat
24 Bhattacharjee. The time is 9:12 a.m. We're
25 back on the record.

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Patent Owner Corrigent Exhibit 2008-0007

1 BY MR. HOLT:
2 Q. So I've now uploaded to the shared exhibit
3 folder a document that has previously been marked
4 as Exhibit 1003 in this proceeding, which is your
5 CV, Dr. Bhattacharjee, that petitioner filed in
6 this IPR; is that correct?
7 (EXHIBIT 1, previously marked Exhibit
8 1003, Curriculum Vitae, was marked for
9 identification.)
10 THE DEPONENT: I'm downloading it.
11 Yes, I have it now.
12 BY MR. HOLT:
13 Q. So to confirm, this is the CV previously
14 marked as Exhibit 1003 in this IPR, and this is
15 your CV, correct?
16 A. It appears to be, correct. Yes.
17 Q. I see that the CV lists the name as "Bobby"
18 and not "Samrat." Do you go by both of those
19 names?
20 A. Yes, I do.
21 Q. Okay. Have there been any material updates
22 to this CV since -- or scratch that.
23 Have there been any updates to your CV since
24 this version was filed on January 10th of this
25 year?

1 A. I might have had another paper accepted.
2 I'm not sure whether it's in here or not.
3 Q. Okay. I've now uploaded to the shared
4 exhibit folder a document that has previously been
5 marked as Exhibit 1004 in this proceeding. Can you
6 please let me know when you see that?
7 (EXHIBIT 2, previously marked Exhibit
8 1004, Bhattacharjee Declaration, was
9 marked for identification.)
10 THE DEPONENT: Yes, I see it.
11 BY MR. HOLT:
12 Q. So this is a document that was previously
13 marked as Exhibit 1004 in this IPR, which is your
14 declaration in this IPR signed on January 9, 2023,
15 correct?
16 A. That appears to be, yes.
17 Q. So during this deposition when I refer to
18 your declaration, I'm referring to this exhibit.
19 Okay?
20 A. That's seems fair, yes.
21 Q. Can you tell me who wrote this declaration?
22 A. It's my declaration, I wrote it.
23 Q. How much time did you spend reviewing the
24 evidence cited in this declaration?
25 A. I don't know a precise amount, but was

1 probably at least 20 hours, if not more.
2 Q. Okay. So about 20 hours?
3 A. You know, that's a rough --
4 MR. BLAKE: Object to the form.
5 BY MR. HOLT:
6 Q. So if you look at the exhibit folder, I've
7 now uploaded another document that was previously
8 marked as Exhibit 1006 in this proceeding. Can you
9 let me know when you see that?
10 COURT REPORTER: Are we remarking these
11 exhibits?
12 MR. HOLT: Yes, let's -- let's go ahead
13 and remark them just to be safe.
14 COURT REPORTER: Thank you.
15 (EXHIBIT 3, previously marked Exhibit
16 1006, U.S. Patent Number 7,466,697 to
17 Raz, was marked for identification.)
18 THE DEPONENT: I have 1006.
19 BY MR. HOLT:
20 Q. Okay. So this document was previously
21 marked as Exhibit 1006 in this IPR. This is
22 U.S. Patent Number 7,466,697 to Raz, correct?
23 A. That appears to be, yes.
24 Q. So during this deposition, whenever I refer
25 to "Raz," I'm referring to this exhibit. Okay?

A. Okay.
Q. And have you seen this exhibit before?
A. Yes, I have.
Q. And when was that?
A. Oh. I mean, I read it and I analyzed it as part of my report.
Q. How long did you spend analyzing Raz for your report?
A. I don't know if I have a precise number of hours. I mean, I spent a lot of time reading Raz.
Q. So you said earlier perhaps about 20 hours reviewing the evidence for your declaration. So would it be about 10 hours for Raz?
A. I don't know --
MR. BLAKE: Objection.
THE DEPONENT: -- if I know the precise number of hours I spent reading Raz.
BY MR. HOLT:
Q. Could you give an estimate?
A. Oh, you know, the original estimate of 20 is relatively loose to start with, so my guess is I spent several hours reading Raz.
Q. Were you familiar with Raz before this IPR?
A. I don't know that I have a -- specifically remembered reading Raz before this IPR.

1 Q. Okay. So just as an initial matter, just so
2 I understand, you agree that Raz discloses
3 communicating packets from one LSR to another using
4 a single high-speed link, not a LAG, correct?
5 COURT REPORTER: Not a LAG?
6 MR. HOLT: Correct.
7 THE DEPONENT: Would you mind --
8 MR. HOLT: LAG is capital L-A-G.
9 THE DEPONENT: Would you mind asking
10 the question again?
11 BY MR. HOLT:
12 Q. Of course.
13 You agree that Raz discloses communicating
14 packets from one LSR to another using a single
15 high-speed link, not a LAG, correct?
16 A. I would not agree with such a narrow
17 characterization of Raz.
18 Q. So let's go to your declaration at
19 Paragraph 59. And specifically the last sentence
20 of that paragraph.
21 Would you let me know when you're there?
22 A. Yes, I'm there.
23 Q. So the last sentence of Paragraph 59 says:
24 "The output of all the subports is aggregated and
25 combined into a single high-speed packet stream and

1 transmitted over the link"; is that right?
2 A. That's correct.
3 Q. So Raz uses a single high-speed packet
4 stream for communicating over the link between
5 LSRs, correct?
6 A. As I said, Raz has many disclosures. That
7 particular line is talking about a single
8 high-speed packet stream over the link. But Raz
9 explicitly talks about LAGs, also.
10 Q. As far as between LSRs, a single high-speed
11 link -- or a single high-speed packet stream is not
12 a LAG. Do you agree?
13 A. Oh --
14 MR. BLAKE: Objection.
15 THE DEPONENT. -- are you -- are you
16 asking me about that particular line or what
17 Raz discloses as a whole or...
18 BY MR. HOLT:
19 Q. I'm asking you about the reference here to a
20 single high-speed packet stream. That's not a LAG,
21 correct?
22 A. It depends, because the LAG can be
23 considered a logical link. They appear as a single
24 link, so it depends upon the context in Raz we're
25 talking about.

1 Q. A LAG comprises multiple links, correct?
2 A. That's correct.
3 Q. So you could not have a LAG with a single
4 link, correct?
5 MR. BLAKE: Objection.
6 THE DEPONENT: Oh, again, it depends on
7 what we mean by a link in the context. As I
8 said, Raz does contemplate LAGs and LAGs
9 between routers, and so if -- and a LAG can
10 be considered a logical link.
11 So I wouldn't necessarily say that
12 anytime someone says there's a high-speed
13 packet stream transmitted over the link it
14 would preclude a LAG.
15 BY MR. HOLT:
16 Q. So is it your opinion that the single
17 high-speed packet stream referenced in this
18 sentence is a LAG?
19 MR. ROSENBERG: Objection.
20 THE DEPONENT: It is my opinion that
21 when one talks about a single high-speed
22 packet stream transmitted over the link, it
23 could include the LAG, especially in context
24 of Raz that explicitly discloses and
25 contemplates LAGs as links between LSRs.

1 BY MR. HOLT:
2 Q. So that's not my question. My question is,
3 there's a reference here to a single high-speed
4 packet stream.
5 Does Raz say that this single high-speed
6 packet stream is a LAG?
7 A. Raz is -- I wouldn't say agnostic, but Raz
8 contemplates different types of links, including
9 LAGs, and LAGs can be considered logical links.
10 Q. So, again, that doesn't address my specific
11 question. My specific question is regarding the
12 statement here at the end of Paragraph 59.
13 It says, "The output of all the subports is
14 aggregated and combined into a single high-speed
15 packet stream."
16 Is it your opinion that that single
17 high-speed packet stream is a LAG?
18 A. Okay. So I think at this point the question
19 doesn't make sense. A high-speed packet stream is
20 a sequence or series of packets. A LAG is a set of
21 physical links. I don't see how one can equate a
22 packet stream with a LAG.
23 Q. Okay. So you said that one would not equate
24 a packet stream with a LAG, correct?
25 MR. BLAKE: Objection.

1 THE DEPONENT: What I'm saying is a
2 high-speed packet stream is a sequence or
3 series of packets, that's data zero and one
4 bits that are being transmitted. A LAG is a
5 Link Aggregation Group, which is a set of
6 physical links. One of them is data or
7 packets. The other one is physical links.
8 I cannot say -- I cannot answer the
9 question, which is, "Is a high-speed packet
10 stream a LAG?" They're different types of
11 things.
12 BY MR. HOLT:
13 Q. Regarding the single high-speed packet
14 stream referenced in this sentence here, you don't
15 argue in your declaration that this single
16 high-speed packet stream is a LAG, correct?
17 MR. BLAKE: Objection.
18 THE DEPONENT: Again, a packet stream
19 is a stream or sequence or series of
20 packets. A LAG is a set of physical links.
21 I don't see how -- I don't -- I don't think
22 the question makes any sense.
23 BY MR. HOLT:
24 Q. Let's go down to Paragraph 81 of your
25 declaration. So let me know when you're there.

A. Okay.

Q. In the second sentence it says, "Within the LSRs individual packets from" high-speed data -- "from a high-speed data stream are assigned to one of a plurality of subports for transportation through the LSR and then reaggregated into the high-speed packet stream before beginning forwarded to the next node in a network (such as the LSR)," correct?

A. It says that, yes.

Q. So in your declaration you rely on that plurality of subports as being an alleged LAG, correct?

A. Sorry. Can you point me to somewhere in the declaration that you're saying that's the reliance?

Q. So looking at this sentence, it refers to a "plurality of subports for transportation through the LSR," and then it refers to "reaggregating into the high-speed packet stream for forwarding to the next node in the network," correct?

A. That's what it says, yes.

Q. Is -- does Raz say that the high-speed packet stream is a LAG?

A. A high-speed packet stream cannot be a LAG. No one can say that. A high-speed packet stream is

1 simply a stream of packets. How they're
2 transported can be over a LAG, a single link, or --
3 well, I guess it would be a LAG or a single link.
4 Those types of two things are different. So
5 this equating that you're trying to ask me, I just
6 don't understand how that can be, that Raz could
7 say that or anyone could say that.
8 Q. You said that the high-speed packet stream
9 could be a LAG or a single link, correct?
10 MR. BLAKE: Objection.
11 THE DEPONENT: No, I don't believe
12 that's what I said.
13 BY MR. HOLT:
14 Q. So you said a high-speed packet stream is
15 simply a stream of packets. How they're
16 transported can be over a LAG or a single link.
17 Is that what you said?
18 A. I mean, you have the transcript, but I think
19 that's close to what I said.
20 Q. Raz doesn't disclose that the single
21 high-speed packet stream is transported over a LAG,
22 correct?
23 A. I wouldn't agree with that characterization
24 of Raz. Raz contemplates high-speed links, and Raz
25 discusses that LSRs can be connected via LAGs. And

1 so I think, you know, one of ordinary skill reading
2 Raz would understand that a LAG could have been
3 used.
4 Q. Can you point me to specifically where Raz
5 says to use a LAG between two LSRs?
6 A. Yeah, certainly. I've even cited it in my
7 declaration, but if we go to Raz Column 9, I will
8 read from Line 9. Raz Column 9, Line 9 starts,
9 "For example, some commercially available Layer 2
10 switches can determine the destination port for a
11 packet destined to a LAG (Link Aggregation Group)
12 based on the CRC of the source MAC address, modulo
13 number of ports in the LAG. This can be used for
14 spreading the packets to the subports by using the
15 Layer 2 switch as the port-forwarding module and
16 defining its ports leading to different subports as
17 a single LAG."
18 This paragraph goes on talking about LAGs
19 between switches. The previous paragraph I believe
20 also talks about LAGs.
21 Q. The portion you read refers to spreading the
22 packets to the subports. It doesn't specifically
23 say to use a LAG between two separate LSRs,
24 correct?
25 A. I would completely disagree with that

1 characterization.
2 Q. So do you not rely on Raz's subports as the
3 alleged LAG?
4 A. Look, I mean, my analysis is in the
5 declaration, and I can go through the mapping as
6 you want. But what I'm disagreeing with is the
7 notion that Raz does not contemplate LAGs.
8 Raz clearly talks about LAGs. Raz talks
9 about LAGs between switches, and Raz is talking
10 about mapping individual ports in a LAG to a
11 subport in this paragraph.
12 Q. So to be clear. Let's see -- scratch that.
13 The paragraph you were reading from in
14 Column 9 starting in Line 9 doesn't reference an
15 LSR, correct?
16 A. All of --
17 MR. ROSENBERG: Objection.
18 THE DEPONENT: All of Raz is talking
19 about LSRs. Those are what -- those are the
20 devices that Raz is directed to and, in
21 fact, it's talking about using LAGs and how
22 to map labels to LAG -- from LAG ports to
23 subports, so --
24 BY MR. HOLT:
25 Q. So, Dr. Bhattacharjee, I --

A. Let me finish my answer.

Q. -- want you --

MR. BLAKE: Please don't -- please don't interrupt the witness.

BY MR. HOLT:

Q. Yeah.

A. So I think it is explicitly talking about LSRs here.

Q. So, Dr. Bhattacharjee, I just want to be clear. My question is not about what the entire of Raz teaches. It's a specific question.

My question is, the paragraph that you're reading from in Column 9 starting at Line 9 does not expressly reference an LSR, correct?

MR. BLAKE: Objection.

THE DEPONENT: If you're asking me does the word "LSR" appear in that paragraph, I don't know, I'd have to read it carefully. But if you read it in context and what problem it is trying to solve, then I would have to say that this is explicitly talking about LSRs because that's the only -- well, it's the primary embodiment in Raz, and also it's trying to solve a problem that only appears in LSRs.

1 BY MR. HOLT:
2 Q. So we can read through that paragraph. It
3 says, "For example, some commercially available
4 Layer 2 switches can determine the destination port
5 for a packet destined to a LAG (Link Aggregation
6 Group) based on a CRC of the source MAC module --
7 modulo, the number of ports in the LAG."
8 That sentence doesn't refer to two separate
9 LSRs, correct?
10 A. I would disagree with that characterization.
11 Q. Where in that sentence does it reference two
12 separate LSRs?
13 A. If you look at that sentence, it says, "Some
14 commercially available Layer 2 switches can
15 determine the destination port for a packet
16 destined to a LAG," and so on. If I have a packet
17 destined to a LAG, it has to come from somewhere,
18 and that would be presumably another LSR that is
19 the pier of the LAG.
20 Q. Let's look at the abstract of Raz. Let me
21 know when you're there.
22 A. Yes.
23 Q. So in the 1, 2, 3, 4, 5 -- fifth line, the
24 sentence that starts there says, "The output of all
25 the subports is aggregated and combined into a

1 single high-speed packet stream and transmitted
2 over the link," correct?
3 A. Yes, this is the line we looked at earlier.
4 Q. It doesn't say here that the single
5 high-speed packet stream is transmitted over a LAG,
6 correct?
7 A. This is a single sentence out of the
8 abstract. And as I said, Raz contemplates LAGs.
9 LAGs can be considered as logical links, so I
10 wouldn't constrain this particular sentence to not
11 be using LAGs.
12 Q. Dr. Bhattacharjee, if you listen to my
13 question, my question wasn't about the entirety of
14 Raz or what Raz contemplates as a whole.
15 My question is specifically this sentence
16 here that says, "The output of all the subports is
17 aggregated and combined into a single high-speed
18 packet stream and transmitted over the link," this
19 sentence does not mention a LAG, correct?
20 MR. BLAKE: Objection, asked and
21 answered.
22 THE DEPONENT: If you're asking me is
23 the word "LAG" in this sentence, it is not.
24 But one of ordinary skill reading the
25 sentence in context of Raz would not

1 preclude the link being a logical link and a
2 LAG.
3 BY MR. HOLT:
4 Q. So based on your answer, you agree that the
5 word "LAG" is not in this sentence?
6 A. The word "LAG" is not in that sentence.
7 However -- I --
8 Q. Let's go --
9 A. Sorry. The word "LAG" is not in that
10 sentence. However --
11 (Indiscernible crosstalk.)
12 BY MR. HOLT:
13 Q. Okay. That was my question.
14 A. I'm really sorry.
15 MR. BLAKE: Do not interrupt the
16 witness, Mr. Holt.
17 THE DEPONENT: I would really
18 appreciate it if I could complete my
19 answers.
20 The word "LAG" is not in that sentence,
21 but as I said, one of ordinary skill reading
22 that sentence in context of the
23 specification and the disclosures would not
24 preclude the link as being a LAG.
25 BY MR. HOLT:

1 Q. So yes or no, the word "LAG" is not in that
2 sentence?
3 MR. BLAKE: Objection, asked and
4 answered.
5 THE DEPONENT: The word "LAG" is not in
6 that sentence, but as I said, one of
7 ordinary skill reading the specification and
8 understanding what it is saying would not
9 preclude LAG's being part of the system
10 that's being described.
11 BY MR. HOLT:
12 Q. So my question is a different question. My
13 question is, yes or no, the word "LAG" is not in
14 that sentence?
15 A. Look, I don't really think --
16 MR. BLAKE: Objection.
17 THE DEPONENT: -- you need to say
18 whether a word is in a sentence or not. I'm
19 here to give my opinion about what one of
20 ordinary skill in 2005 would have understood
21 from reading that sentence. And the word
22 "LAG" is not in that sentence, but one of
23 ordinary skill reading the sentence and
24 understanding what it is saying in context
25 of the specification would not preclude the

1 LAG being part of the system that's being
2 described.
3 BY MR. HOLT:
4 Q. Respect -- respectfully, Dr. Bhattacharjee,
5 you're here to answer the questions that are posed
6 during the deposition.
7 And the question is specifically, yes or no,
8 is the word "LAG" in that sentence?
9 A. Respectfully, Mr. Holt, I appreciate the
10 fact that you get to ask me the questions, but you
11 should then not tell me what to answer. So if you
12 ask me a question, I will give you the answer as I
13 wish.
14 Q. So the question is, yes or no, does the word
15 "LAG" appear in the sentence of the abstract that
16 says: "The output of all the subports is
17 aggregated and combined into a single high-speed
18 packet stream and transmitted over the link"?
19 A. The word "LAG" does not appear in that
20 sentence, but one of ordinary skill reading this
21 sentence in context of the specification at the
22 time of the priority date would not preclude LAG
23 being part of the system that's being described.
24 Q. Let's go to Raz at 2 -- Column 7, Line 27.
25 Let me know when you're there.

A. Okay.

Q. So starting at Column 2, Line 27, it says: "It is important" --

A. I'm sorry. You said Column 7 or Column 2?

Q. Column 2, Line 27.

A. I -- I apologize.

Q. Are you there?

A. Yes.

Q. Okay. So starting there, it says: "It is important to note that the invention is not limited by the type of network in use, the PHY layer, the type of protection paths used or by the type of signaling in use. Examples of applicable networks include, but are not limited to, Ethernet, MPLS and Private Network-to-Network Interface (PNNI) based Asynchronous Transfer Mode (ATM) networks," correct?

A. That's correct.

Q. So this says that the invention is not limited by the type of network in use, correct?

A. It says more, but that's certainly part of what it says.

Q. And it says that Raz could be used with an Ethernet network, correct?

A. That's correct.

1 Q. Raz could also be used with an ATM network,
2 correct?
3 A. That's correct.
4 Q. So Raz does not have to be used in an MPLS
5 network specifically, correct?
6 A. So that's an interesting question. MPLS by
7 itself is not a physical standard. MPLS is
8 commonly used with Ethernet, ATM, and so on. One
9 cannot just have an MPLS network. It's not a
10 physical layer standard.
11 Q. But here it says that Raz could be used with
12 an Ethernet network or an ATM network, so Raz is
13 not limited to MPLS networks, correct?
14 A. What's -- it's saying --
15 MR. BLAKE: Objection, asked and
16 answered.
17 THE DEPONENT: What it's saying here is
18 there are different types of physical
19 layers, and Raz can be used with MPLS and --
20 but other types of implementations or
21 embodiments would also be -- would also
22 benefit from Raz, but in particular, MPLS
23 which can be used with Ethernet and ATM
24 would be covered.
25 BY MR. HOLT:

1 Q. So let's jump to the other column, 1,
2 starting at Line 53.
3 Are you there?
4 A. Yes.
5 Q. So the sentence starting in that line says:
6 "In addition, the increasing use of MPLS requires
7 that any solution be able to handle the MPLS
8 protocol as well," correct?
9 A. Correct.
10 Q. So this means that Raz's invention should be
11 able to accommodate the MPLS protocol, correct?
12 A. It -- the sentence stands on its own. It
13 says: "In addition, the increasing use of MPLS
14 requires that any solution be able to handle MPLS
15 protocol as well."
16 Q. So this sentence you said stands on its own,
17 correct?
18 A. Again, you have the transcript but I think,
19 you know, if I read this, what this is saying is
20 whatever solution Raz is disclosing would apply to
21 MPLS networks or MPL -- or networks that use MPLS.
22 Q. I think it says something slightly
23 different, because it says there's an increase in
24 use of MPLS networks, so that requires that any
25 solution would be able to handle the MPLS protocol

as well, right?

A. That's what the sentence says.

Q. So then whatever solution Raz uses would need to accommodate the MPLS protocol, right?

A. I mean, I don't know exactly what you're asking, but as far as I can tell, this is saying MPLS is increasingly in use and the solution we're going to provide is going to apply to MPLS protocols as well.

Q. So if we go to Column 6 and at Line 27, if you let me know when you're there.

A. Okay.

Q. And that line, the sentence starts and says: "To provide the flexibility required for protocols such as MPLS, a network processor or FPGA is used to implement the subport," correct?

A. It does say that.

Q. So this, similarly, as the statement we looked at in Column 2 is saying, that the solution in Raz has to be flexible to apply to the MPLS protocols, right?

A. I think -- I don't know, again, exactly what you're asking, but the sentence says there are protocols such as MPLS and certain types of processing is required to be able to handle the

1 requirements of these protocols, and then it
2 identifies two pieces of hardware, a network
3 processor or a field-programmer gate array that can
4 be used to implement the logic required for these
5 protocols.
6 Q. It uses those for flexibility to apply to
7 those protocols, correct?
8 A. The sentence says: "To provide the
9 flexibility required for protocols such as MPLS, a
10 network processor or FPGA is used to implement the
11 subport."
12 Q. Let's go to Column 6 at the bottom. Raz
13 there starts to discuss Figure 1 in the bottom,
14 Column 6, right?
15 A. Yes.
16 Q. And you see then at the top of Column 7 that
17 Raz discusses components of Figure 1, including the
18 10G PHY 24 coupled to a 10G link 28 and a port
19 forwarding module 22 and a CPU 16, correct?
20 A. Among other elements, yes.
21 Q. And then over in Column 8, it continues
22 discussing the components of Figure 1 such as the
23 CPU 16 through the top of Column 8, correct?
24 A. Yes.
25 Q. Are you familiar with the embodiment of

1 Raz's Figure 1?
2 A. Yes.
3 Q. Let's go to Column 7, starting at Line 49.
4 There it says: "The port forwarding module
5 functions to receive the 10G packet stream from the
6 10G PHY and examine the label in each received
7 packet. The packet is then forwarded to one of the
8 subports in accordance with the label," correct?
9 A. It does say that.
10 Q. So this refers to the port forwarding module
11 receiving a packet and then forwarding it to a
12 subport, right?
13 A. That's correct.
14 Q. So let's look at Figure 1. Figure 1 depicts
15 an LSR 10, correct?
16 A. That's correct.
17 Q. And so when LSR 10 receives the packet, it
18 forwards the packet to one of the subports, 14,
19 within LSR 10, correct?
20 A. That's correct.
21 Q. Let's go to -- back to Column 7 at Line 26.
22 A. Okay.
23 Q. By the way, thanks for letting me know when
24 you're there. It makes it a little bit easier,
25 just the back and forth. You understand. So

1 thanks.
2 A. I'm there.
3 Q. Okay. So in Column 7, starting at Line 26,
4 it says: "Note that it is the downstream (i.e.
5 receiving) node that determines the subport it
6 wants to receive the LSP on. This decision is
7 communicated to the upstream (i.e. sending) node
8 via the label that is assigned to the LSP,"
9 correct?
10 A. That's correct.
11 Q. So Raz here says that the receiving node
12 determines which subport is used, right?
13 A. That's correct.
14 Q. And then the receiving node uses a label to
15 communicate that subport selection to the upstream
16 sending node, right?
17 A. I don't know. Would you want to point me to
18 a specific part of Raz?
19 Q. That same part that we just read from says:
20 The "decision is communicated to the upstream (i.e.
21 sending) node via the label that is assigned to the
22 LSP."
23 So Raz is basically saying that the
24 receiving node uses the label to communicate its
25 subport selection to the upstream sending node,

1 right?"
2 A. The receiving node creates a label and then
3 communicates this label to the upstream node and
4 the label encodes certain information that can be
5 used to select a subport.
6 Q. Okay. Gotcha.
7 In Column 8 at Line 52, Raz again similarly
8 says: "Note that it is the downstream (i.e.
9 receiving) node that determines the subport it
10 wants to receive the LSP on. This decision is
11 communicated to the upstream (i.e. sending) node
12 via the label that is assigned to the LSP," right?
13 A. It does say that.
14 Q. So this is, again, saying that the receiving
15 node selection of subport and it creates a label
16 and sends that to the upstream sending node, right?
17 A. That's right. The receiving node -- or the
18 node that is to receive packets in the label-switch
19 path creates a label that's appropriate, encodes
20 information into that label, and is able to signal
21 that label upstream.
22 Q. Okay. Back over to Column 7, starting at
23 Line 30, it discusses an example using two LSRs,
24 LSR A and LSR B, right?
25 A. That's correct. That's an example.

1 Q. So continuing with that at Line 32, it says
2 "An LSP is provisioned from LSR A to LSR B,"
3 correct?
4 A. That's correct.
5 Q. So here LSR A is the sending node and LSR B
6 is the receiving node, correct?
7 A. That would be the one direction. I mean,
8 the LSP could carry packets both ways, but yeah.
9 Q. In this example, it only discusses the one
10 direction from LSR A to LSR B, though, correct?
11 A. Okay. Let's -- let's go with that.
12 Q. So then continuing on with the next sentence
13 starting at Line 33, it says, "When the LSP is
14 signaled or provisioned through management, the CAC
15 and LSR B decide to accept the LSR B on subport 3
16 and thus assigns a label compromising indication
17 that subport 3 was selected."
18 And then the "label is communicated through
19 LSR A which now knows that the output subport
20 should be subport 3 (i.e. the same subport is
21 provisioned)," correct?
22 A. It does say that.
23 Q. So this says that LSR B selects subport 3,
24 right?
25 A. It does say that.

1 Q. And LSR B generates a label indicating
2 subport 3, right?
3 A. It will generate a label in which the
4 subport serial number would be encoded, yeah.
5 Q. Sorry. Just to be clear, so LSR B generates
6 that label indicating subport 3, right?
7 A. That's what it says, yes.
8 Q. So then continuing with the next sentence at
9 Line 39, it says, "When a packet for the
10 provisioned LSP is received over a link connected
11 to LSR A, it is forwarded to subport 3 and
12 subsequently out over the 10G link to LSR B with
13 the previously assigned label indicating
14 subport 3," right?
15 A. Yes, it does say that.
16 Q. So this means that LSR A, the sending node,
17 first forwards the packet to its subport 3, and it
18 subsequently sent that packet over the link to
19 LSR B, right?
20 A. I mean, that's the whole line says. When a
21 packet is provisioned -- well, when a packet
22 forward the provisioned LSR B is received over a
23 link connected to LSR A, it is forwarded to
24 subport 3, and subsequently over the 10G link to
25 LSR B with the previously assigned label indicating

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1 subport 3.
2 Q. Okay. So LSR A sends it, the packet, to its
3 subport 3, and then subsequently out over the link
4 to LSR B, right?
5 A. With the label indicating subport 3.
6 Q. Okay. So LSR A sends the packet to its
7 subport 3 and then subsequently sends the packet
8 over the link to LSR B with the label created by
9 LSR B, right?
10 A. I think that's fair, yeah.
11 Q. So then continuing with the next sentence
12 starting at Line 42 it says, "The port forwarding
13 module in LSR B examines the label in the received
14 packet and in response thereto forwards the packet
15 to subport 3 for packet processing," correct?
16 A. That's correct.
17 Q. So it says that LSR B received the packet,
18 correct?
19 A. It does.
20 Q. And then LSR B, the receiving node, forwards
21 that received packet to subport 3, right?
22 A. That's correct.
23 Q. And the subport 3 is within LSR B, right?
24 A. That's correct.
25 Q. So if we go up to Line 21 of Column 7 --

1 A. Okay.
2 Q. -- it says, "In the next link on the path,
3 however, the subport may be different," correct?
4 A. It does say that, yes.
5 Q. So if we consider that example we're
6 discussing in Column 7 of the packet sent from
7 LSR A to LSR B using subport 3, then according to
8 this statement at Line 21, it says that for the
9 next link from LSR B to some other downstream LSR,
10 that the subport may be different than subport 3,
11 right?
12 A. I think what this is saying is that the
13 subport may be different, but it could be the same.
14 I think the disclosure is broad enough that the
15 same label with the same subport could be used
16 across the LSR B or not, but --
17 Q. Okay.
18 A. Yeah, it's just saying it may be different.
19 Q. Okay. But you agree then that the next link
20 from LSR B to some downstream LSR may use a subport
21 other than subport 3, right?
22 A. It may use something different or may use
23 the exact same one. It depends upon the
24 configuration, but I wouldn't says that it has to
25 be different. I would say the disclosure is broad

1 enough that the subports could be the same.
2 Q. So even though LSR B selected subport 3 this
3 statement says that for the next link from LSR B to
4 another downstream LSR, it may use a subport other
5 than subport 3, right?
6 MR. BLAKE: Objection, form. Asked and
7 answered.
8 THE DEPONENT: The sentence, you know,
9 stand -- stands on its own. It literally
10 says, "In the next link on the path,
11 however, the subport may be different."
12 So, yeah, it could be different, but it
13 could also be the same. And the disclosure
14 is broad enough that the same subport could
15 be used for certain LSPs.
16 BY MR. HOLT:
17 Q. So I just wanted to look specifically at
18 this example, though, applying the sentence at
19 Line 21 to the example we were discussing, right?
20 So in that example, you agree that the subport used
21 for the next link from LSR B to some downstream LSR
22 may or may not be subport 3, right?
23 A. I think the sentence is leaving open the
24 possibility that 3 may be used, or if there was
25 some other constraints, then some other support

1 would also be used.
2 Q. So it could be, for example, subport 2 used
3 for the next link --
4 A. It could be --
5 Q. -- correct?
6 A. -- port 3 or it could be --
7 MR. BLAKE: Objection.
8 THE DEPONENT: -- port 2.
9 BY MR. HOLT:
10 Q. Okay. Let's go to Raz's Claim 1, which
11 begins near the top of Column 14.
12 A. Okay. And then, you know, if you're towards
13 the end of a line, shall we take a break after
14 this?
15 Q. Yes, if you'd like, we can -- we could go
16 ahead and take a break now. We've been going for
17 about an hour.
18 A. Okay. Okay.
19 MR. HOLT: Okay. Let's go off the
20 record.
21 VIDEOGRAPHER: This ends Media Unit
22 Number 2 in the deposition of Dr. Samrat
23 Bhattacharjee. The time is 10:07 a.m.
24 We're going off the record.
25 (A recess transpired from 10:07 a.m.

1 through 10:16 a.m.)
2 VIDEOGRAPHER: This begins Media Unit
3 Number 3 in the deposition of Dr. Samrat
4 Bhattacharjee. The time is 10:16 a.m.
5 We're back on the record.
6 BY MR. HOLT:
7 Q. Okay. Dr. Bhattacharjee, let's go to
8 Column 9, starting at Line 33.
9 A. Okay.
10 Q. So the sentence there starts and says,
11 "LSR A 51 compromises 1G Port 52, Switching Fabric
12 54, and Module 56 comprising 10 subports, a Layer 2
13 switch and 10 GE PHY," correct?
14 A. That's correct.
15 Q. So this says that the subports, the Layer 2
16 switch, and the PHY are all part of Module 56,
17 right?
18 A. Can you ask me that again?
19 Q. Yes. This says that the subports, the
20 Layer 2 switch, and the PHY are all part of
21 Module 56, right?
22 A. Yes, correct.
23 Q. And it lists the subports, the Layer 2
24 switch, and the PHY as separate components of
25 Module 56, correct?

1 A. That's correct.
2 Q. Let's go to Figure 1.
3 A. Okay.
4 Q. So Figure 1 shows that subports 14 are not
5 part of PHY 24, correct?
6 A. Oh, those are separate functional components
7 in Figure 1.
8 Q. And then in Figure 2, Figure 2, likewise,
9 shows that subports 34 are separate functional
10 components from PHY 42, correct?
11 A. Those are examples, and they're separate
12 functional components, that's correct.
13 Q. And then down in Figure 6, Figure 6 shows
14 that 1G processors or subports 128 and 130 are not
15 part of PHYs 122 and 134, correct?
16 A. The subports are separate functional
17 components, that's correct.
18 Q. Okay. Let's go to Column 14 of Raz.
19 A. Okay.
20 Q. So looking at Claim 1 starting with the
21 first clause in Line 9, it says, "Provisioning
22 inbound traffic on a downstream node to one or more
23 subports in accordance with the label-switched path
24 and transmitting resultant subport assignments to
25 an upstream node, said upstream node communication

1 with said downstream node via a communications
2 link," correct?
3 A. That's correct.
4 Q. So this refers to inbound traffic sent from
5 an upstream node to a downstream node, correct?
6 A. That's not what it's saying. It's saying
7 it's provisioning inbound traffic on a downstream
8 node.
9 Q. Right. But that inbound traffic, it refers
10 to as being inbound from an upstream node to a
11 downstream node, correct?
12 A. Once the inbound traffic comes, it will come
13 from the upstream node to the downstream node.
14 Q. Okay. So the upstream node is the sending
15 node, and the downstream node is the receiving node
16 in this example, correct?
17 A. The claim is broadly contemplating a
18 sequence of LSRs, and it's talking about what's
19 going to happen from one inbound -- from one
20 upstream to one downstream, and it can repeat, yes.
21 Q. So if you're sending the inbound traffic
22 from an upstream node to a downstream node, then
23 the upstream node would be the sending node and the
24 downstream node would be the receiving node, right?
25 A. That's one way to characterize it.

1 Q. So the portion we read, it says that the --
2 it says, quote, Subport assignments are provisioned
3 by the downstream node and then transmitted to the
4 upstream node, correct?
5 A. I mean, we just read it. I don't want to
6 characterize it more narrowly than what it says.
7 Q. So I just want to make sure we're
8 understanding it correctly. When it says,
9 "Transmitting resultant subport assignments to an
10 upstream node," it's referring to the subport
11 assignments that were done by the downstream node
12 being transmitted to the upstream node, right?
13 A. I would not read it so narrowly. It could
14 be the downstream node that did the assignment, it
15 could be some other entity that has a global view
16 of what's free on the network, but certainly one of
17 the examples would be that the downstream node does
18 the provisioning, and the resultant provisioning
19 with a label that is sufficient would be
20 transmitted to the upstream node.
21 Q. The next clause starting at Line 15 says:
22 "Forwarding each outbound packet to be transmitted
23 to a subport in said upstream node in accordance
24 with the label associated with said outbound packet
25 previously assigned by said downstream node,"

1 correct?
2 A. That's what it says, yes.
3 Q. So here this says that the label is assigned
4 by the downstream node, right?
5 A. That's correct.
6 Q. And then it also says that an outbound
7 packet is transmitted to a subport in the
8 upstream -- within the upstream node, right?
9 A. It says more than that, but that's part of
10 the sentence.
11 Q. Okay. The third clause then starting at
12 Line 19 says: "Aggregating the output of a
13 plurality of subports at said upstream node into a
14 high-speed packet stream and forwarding said
15 high-speed packet stream over said communications
16 link," correct?
17 A. That's what it says.
18 Q. So this is saying that a single high-speed
19 packet stream is sent from the upstream node to the
20 downstream node, correct?
21 A. It says there is a high-speed packet stream
22 that can be sent from the upstream node to the
23 downstream node.
24 Q. Okay. I'm sorry. I think you said "can,"
25 but in this instance it says that it is reciting

1 that method of a single -- or excuse me -- said
2 high-speed packet stream is sent from the upstream
3 node to the downstream node, right?
4 A. Again, let's not, you know, paraphrase so as
5 to lose connotation or meaning here. It literally
6 says: "Aggregating the output of a plurality of
7 subports at said upstream node into a high-speed
8 packet stream and forwarding said high-speed packet
9 stream over said communications link."
10 Q. Okay. And it's forwarding that high-speed
11 packet stream over the said communications link to
12 the downstream node, right?
13 A. I would agree with that, yes.
14 Q. So the next clause starting at Line 23 says:
15 "Forwarding inbound packets transmitted by said
16 upstream node and received over said communications
17 link by said downstream node to a subport in
18 accordance with the label associated with said
19 inbound packet," correct?
20 A. That is correct.
21 Q. So this is referring to the downstream node
22 receiving the inbound packet, right?
23 A. It's referring to the said downstream nodes
24 receiving said inbound packets.
25 Q. Correct. Yes. Thank you.

1 And then this says that the downstream node
2 forwards the inbound packet to a subport, correct?
3 A. I mean, it says more, right?
4 Q. But it does include the description that the
5 downstream node forwards the inbound packet to a
6 subport, correct?
7 A. It says: "Forwarding inbound packets
8 transmitted by said upstream node and received over
9 said communication link by said downstream node to
10 a subport in accordance with the label associated
11 with said inbound packet."
12 Q. Okay. So here it's referring to inbound
13 packets that have been transmitted by the upstream
14 node and received by the downstream nodes, right?
15 A. I think that's fair.
16 Q. And it's saying that those packets are
17 forwarded to a subport in accordance with the
18 labels associated with those packets, right?
19 A. That's correct.
20 Q. And so the subport that those packets --
21 sorry. Strike that.
22 So these inbound packets are received by the
23 downstream node and forwarded to subport and that
24 subport is in the downstream node, right?
25 A. That's correct.

1 Q. Okay. Let's go to Column 9, starting at
2 Line 29.
3 A. Okay.
4 Q. So this is discussing Raz's Figure 3,
5 correct?
6 A. Yes.
7 Q. And are you familiar with Raz's Figure 3?
8 A. I am.
9 Q. So starting at Line 33 of Column 9, it says:
10 "LSR A 51 compromises 1G port 52, switching
11 fabric 54 and module 56 comprising 10 subports," a
12 "layer 2 switch and 10 GE PHY," correct?
13 A. That's correct.
14 Q. And this calls the module 56 just a module,
15 correct?
16 A. I don't know exactly what you're asking.
17 Q. It doesn't call it specifically a subport
18 forwarding module, right?
19 A. In the sentence says what it says. It says
20 "module 56."
21 Q. So if we go down to Line 41, it says:
22 "Consider an LSP to be setup through LSR A to
23 LSR C," correct?
24 A. It does say that.
25 Q. So if we glance at Figure 3, you see that

1 LSP goes from LSR A to LSR B and then LSR B to
2 LSR C, right?
3 A. That's correct.
4 Q. And Figure 3 shows that the packets are sent
5 from LSR A to LSR B using subport 0, right?
6 A. That's correct.
7 Q. In Column 9, at Line 51 --
8 A. Okay. Wait. Let me find Column 9 again.
9 Sorry.
10 Q. Yeah.
11 A. Okay.
12 Q. So at Line 51 of Column 9, the sentence
13 starting there says: "The CAC in LSR B determines
14 that the best subport for receiving the LSP is on
15 subport 0 on the inbound link and therefore assigns
16 a label 0x40005. This label indicates line
17 interface card 2, subport 0 and label 5. The label
18 is communicated to LSR A, who then knows by the
19 output label that it is to assign the LSP to
20 subport 0." Is that correct?
21 A. That's correct.
22 Q. Okay. So for those communications from
23 LSR A to LSR B using subport 0, it's LSR B that
24 assigns subport 0 and generates the label that
25 identifies subport 0, right?

A. In this example, that's correct, yes.

Q. So if we look back to Figure 3, it shows that packets are sent on the next link from LSR B to LSR C using a different subport, specifically subport 1, correct?

A. Yeah, that's just this example. It could have used 0, but presumably the admission control in C decided to use 1, but nothing would have stopped it from using 0.

Q. Okay. But here this Figure 3 shows that the packet sent from LSR B to LSR C are sent using subport 0 -- or excuse me -- are sent using subport 1, correct?

A. That's correct. Example, subport 1 is being used between B and C.

Q. Subport -- or LSR B had assigned subport 0, correct?

A. Again, the subports are chosen based on bandwidth availability. And, as I said, nothing in the specification precludes the same subport being used, but different ones may be used between different pairs.

Q. In this example, though, the subport that LSR B assigns is subport 0, right?

A. That's correct.

1 Q. Back in Column 9 at Line 42.
2 A. Okay.
3 Q. It says: "When the LSP is signaled, the CAC
4 in LSR C decides to provision the LSP on subport 1
5 and therefore assigns the label 0x22003," correct?
6 A. That's correct. That's just a choice LSR C
7 had. If it had chosen 0 and the same main port, it
8 would have been the same label, but in this case
9 the label does change.
10 Q. In this case LSR C assigned subport 1,
11 correct?
12 A. That's correct. LSR C presumably had a
13 choice. It could have chosen 0, it chose 1,
14 depending upon some other assignments.
15 Q. At Line 49, it says: "The label generated
16 by LSR C is communicated to LSR B which tells LSR B
17 that the outbound subport (to LSR C) should be
18 subport 1," correct?
19 A. That's correct.
20 Q. So here it's saying that for the
21 communication from LSR B to LSR C, the label is
22 generated by LSR C, correct?
23 A. That's correct.
24 Q. So in this example for packets sent from
25 LSR A to LSR B and then on to LSR C, the subport

1 used for the hop from LSR B to LSR C is chosen by
2 LSR C; is that right?
3 A. That's correct.
4 Q. So let's talk about the data path within the
5 LSR.
6 So if we look at Column 9, starting at
7 Line 59, it says: "The data path for this LSP is
8 as follows. When a packet for this LSP is received
9 on the 1G port 52 of LSR A, it is sent out on the
10 10G link 60 with the destination MAC address of the
11 next LSR (i.e. LSR B)," correct?
12 A. Correct.
13 Q. And then skipping a sentence and starting at
14 Line 64, that sentence says: "At LSR B, the
15 layer 2 switch forwards the packet to subport 0,"
16 correct?
17 A. It does say that.
18 Q. So this means that when LSR B received a
19 packet, it forwards it to subport 0 within LSR B,
20 right?
21 A. That's correct. The MAC address and the
22 label that's on the packets is indicating that
23 subport 0 should be used.
24 Q. And then in Column 10, Line 2 talks about
25 the next link. It says: "Upon receipt, LSR C

1 examines the label and according to the source MAC
2 address, forwards the packet to subport 1,"
3 correct?
4 A. Correct. The packet, again, has a label and
5 has a MAC address, and the MAC address and/or the
6 label is being used to select the subport.
7 Q. Gotcha.
8 And so using that label then, when LSR C
9 received a packet, it forwards it to subport 1
10 within that LSR C, correct?
11 A. That's correct, I mean, it could have been
12 subport 0, but I think C chose 1, and so that's
13 where it's going, the packet is going.
14 Q. Okay. Let's see. Let's look at Figure 1
15 again, if you could go to Figure 1.
16 A. Yes.
17 Q. Okay. In Figure 1, LSR 10 contains port
18 forwarding module 22, correct?
19 A. That's correct.
20 Q. And so when an inbound packet is received by
21 LSR 10, the port forwarding module 22 forwards that
22 inbound packet to one or more of subports 14,
23 correct?
24 COURT REPORTER: For? For 10? For T?
25 MR. HOLT: Excuse me, 14.

1 COURT REPORTER: 14.
2 THE DEPONENT: Would you mind repeating
3 the question again?
4 BY MR. HOLT:
5 Q. No trouble.
6 So looking at Figure 1, when an inbound
7 packet is received by LSR 10, the port forwarding
8 module 22 forwards the inbound packet to one or
9 more of subports 14, correct?
10 A. When an inbound packet is received, based
11 upon the label and the packet, a subport is chosen
12 and the piece of hardware that is doing the
13 inspection and forwarding is 22, the port
14 forwarding module.
15 Q. Okay. So the port forwarding module 22 is
16 going to forward that inbound packet to one of the
17 subports 14, right?
18 A. That's my recollection, but we can take a
19 look at the description of Figure 1 to be just more
20 precise.
21 Q. So let's go to Column 7, starting at
22 Line 49.
23 A. Okay.
24 Q. There it says, "The port forwarding module
25 functions to receive the 10G packet stream from the

1 10G PHY and examine the label in each received
2 packet. The packet is then forwarded to one of the
3 subports in accordance with the label," correct?
4 A. Correct.
5 Q. So then as that says in Figure 1, the port
6 forwarding module will receive an inbound packet
7 from the 10G PHY 24 and then forward that inbound
8 packet to one of the subports 14, correct?
9 A. So in this particular embodiment, the port
10 forwarding module is looking at the label choosing
11 the subport.
12 Q. Okay. So the port forwarding module is
13 choosing the subport 14 for the inbound packet and
14 sending that inbound packet to the subport?
15 A. Yeah. The way to think about it is that the
16 LSR itself has chosen which subport should be
17 processing this packet, and once the packet is
18 received, the port forwarding module then forwards
19 the packet based upon the label which encodes the
20 subport on to that subport.
21 Q. And the subports 14 are within LSR 10,
22 correct?
23 A. Yes, I believe so.
24 Q. So if we go to Figure 6 now, Figure 6 shows
25 a network device 100 that contains subport

1 forwarding modules 126 and 132, correct?
2 A. That's correct.
3 Q. So here if subport forwarding module 132
4 received an inbound packet, it's going to forward
5 the inbound packet to one of the subports or
6 processors 130, right?
7 A. I mean, I don't know if there's a disclosure
8 of a -- well, there's some kind of processing in
9 130, but 132 will choose to forward to elements in
10 130.
11 Q. So we can look at Column 12, starting at
12 Line 66.
13 A. Okay.
14 Q. There it says, "The subport forwarding
15 module 132 directs the inbound packets to one of
16 ten 1 GE network processors 130," correct?
17 A. That's correct.
18 Q. So then Figure 6 -- that matches what
19 Figure 6 shows in that the subport forwarding
20 module 132 will send an inbound packet to the
21 network processors 130 within the network device
22 100, correct?
23 A. That is the specific implementation that is
24 being discussed or described in that figure and
25 discussed in the text.

1 Q. So at the top of Column 13, it discusses the
2 other port forwarding module 126 in Figure 6 and
3 says, starting at Line 2, "Similarly, outbound
4 means is also provided -- compromising ten 1 GE
5 network processors 128, subport forwarding module
6 126, 10GE line interface 122, coupled to link 102,"
7 correct?
8 A. That's correct.
9 Q. So as Figure 6 shows then for an outbound
10 packet, the packet will go from the subport
11 processors 128 to the subport forwarding module 126
12 which then sends the outbound packet to the 10G PHY
13 122 and out over link 102; is that right?
14 A. That's fair.
15 Q. Let's go back up to Figure 1. So in
16 Figure 1, the port forwarding module is sending out
17 an outbound packet, the port forwarding module
18 forwards that outbound packet to the 10G PHY 24 to
19 be sent out over link 28, correct?
20 A. That's one direction, that's correct.
21 Q. So we're discussing specifically outbound
22 packets. So for outbound packets, that's the
23 direction that the port forwarding module would
24 send an outbound packet, correct?
25 A. Can you describe your situation again and --

1 Q. Yes, of course.
2 A. -- the units just for outbound packets?
3 Q. Yes. So for an outbound packet only, after
4 being processed by the subports 14, the outbound
5 packet will then be sent by the port forwarding
6 module 22 to the 10G PHY 24 to be sent out over the
7 link 28, correct?
8 A. That's correct. It's just important to
9 understand that this is a very high-level
10 schematic. I mean, obviously, if you're going to
11 have an LSR, you'll have more than one interface,
12 so, but yeah.
13 Q. Okay. Dr. Bhattacharjee, I've now uploaded
14 another exhibit to the shared folder that was
15 previously marked as 1007 in this proceeding.
16 Do you see it?
17 A. Yes.
18 COURT REPORTER: Would you let me know
19 when you're marking exhibits, please?
20 MR. HOLT: Yes.
21 COURT REPORTER: Thank you.
22 BY MR. HOLT:
23 Q. So this document was previously marked as
24 Exhibit 1007 in this IPR, now being marked as
25 Exhibit 4 in this deposition, and this is

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1 U.S. Patent Number 7,277,386 to Ferguson, correct?
2 A. That's correct.
3 (EXHIBIT 4, previously marked Exhibit
4 1007, U.S. Patent Number 7,277,386 to
5 Ferguson, was marked for
6 identification.)
7 BY MR. HOLT:
8 Q. So during this deposition when I refer to
9 "Ferguson," I'm referring to this exhibit, okay?
10 A. Okay.
11 Q. Have you seen this exhibit before?
12 A. Yes, I have.
13 Q. And when was that?
14 A. When I did my analysis of the '602 patent.
15 Q. About how long did you spend reviewing
16 Ferguson for that analysis?
17 A. My guess is several hours.
18 Q. Were you familiar with Ferguson before this
19 proceeding?
20 A. I'm not sure that I was.
21 Q. So just a quick question just to clarify.
22 The Raz reference is not cited anywhere in
23 Ferguson, right?
24 A. I don't know that I know the answer to that.
25 Q. Okay. So you don't know whether Ferguson

1 cites or discusses the Raz reference; is that
2 right?
3 A. That's correct. I didn't do that specific
4 analysis.
5 Q. So let's go to the first column of Ferguson
6 starting at Line 28.
7 A. Okay.
8 Q. It says there that "The term 'link
9 aggregation' refers to a technique by which
10 multiple physical interconnects are logically
11 associated and treated as a single, aggregated
12 link," correct?
13 A. That is correct.
14 Q. So this says that a LAG includes multiple
15 physical interconnects, correct?
16 A. That's correct.
17 Q. And this says that for a LAG, "the multiple
18 physical interconnects are logically associated and
19 treated as a single, aggregated link," correct?
20 A. That's correct.
21 Q. This doesn't say -- strike that.
22 This does not say to combine the streams on
23 those multiple physical interconnects into a single
24 stream, correct?
25 A. I don't know. What do you mean by "streams"

here?

Q. So the LAG includes multiple physical interconnects, right?

A. That's correct.

Q. So this description here does not say to combine the streams on those multiple physical interconnects into a single stream; is that right?

A. I don't know what you mean by "stream" here.

Q. So data can pass -- strike that.

A data stream can pass on one of the multiple physical interconnects, correct?

A. A data stream can pass on one of the physical interconnects. It can also pass over any subset including all of them. That's the whole point of the LAG.

Q. So you could have two separate streams on two separate physical interconnects of the LAG, correct?

A. The way to think about the LAG is just as a single logical link, and the underlying hardware is supposed to take care of how the physical interconnects are being used unless something else is being done. And so just like I can send two different logically separate streams of packets over a single link, I could send two separate

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1 logically -- two logically separate streams of data
2 over a LAG.
3 Q. Okay. So you could send those two separate
4 streams over two different interconnects of the
5 LAG, correct?
6 A. Depending upon how the LAG is configured,
7 the packets of a stream may go over a single
8 physical link, or they may go over multiple
9 physical links.
10 Q. So you can have two data streams each of
11 which is going over a separate physical
12 interconnect of the LAG.
13 A. If that's how a LAG has been configured,
14 then that is a possible way to use the LAG.
15 Q. This description here doesn't say anything
16 about combining different data streams on different
17 physical interconnects into a single stream,
18 correct?
19 A. I cannot understand your question. I'm
20 sorry.
21 Q. There's no mention in the sentence here
22 regarding link aggregation in Ferguson of a data
23 stream, correct?
24 A. I mean, first, this is not linked
25 aggregation in Ferguson. This is background on

1 link aggregation, which is also in the '602 patent.
2 Link aggregation was a well-known and almost
3 generic technology by this time. And this
4 particular sentence is giving us a high-level
5 description of the technique called link
6 aggregation, and it's just talking about link
7 aggregation is a technique by which multiple
8 physical interconnects are logically associated and
9 treated as a single, aggregated link.
10 The paragraph goes on to give you the IEEE
11 working group that has developed a specification
12 and how such logical links can be used.
13 Q. The word "stream" is not used in this
14 paragraph in Ferguson, correct?
15 A. I don't know that I see the word "stream" in
16 this paragraph, but it's not something I looked
17 for. It's -- I mean, it's just describing what a
18 LAG is.
19 Q. This paragraph says, starting at Line 28,
20 that "The term 'link aggregation' refers to a
21 technique by which the multiple physical
22 interconnects are logically associated and treated
23 as a single, aggregated link."
24 The word "stream" doesn't appear in that
25 sentence, correct?

1 A. As you read, the word "stream" does not
2 appear in that sentence.
3 Q. The next sentence says, "In particular, the
4 IEEE 802.3ad working group recently developed a
5 link aggregation specification."
6 That sentence doesn't include the word
7 "stream," correct?
8 A. That sentence does not include the word
9 "stream," that's correct.
10 Q. It then goes on to say, "This approach may
11 provide for increased link availability and
12 bandwidth between the two devices. For example,
13 bandwidth can be increased in linear increments,
14 example, for adding individual interconnects to
15 increase the bandwidth between the two devices. In
16 addition, the multiple physical interconnects
17 provide a degree of redundancy in that a failure in
18 a single physical interconnect no longer inhibits
19 direct traffic flow between the two devices. With
20 link aggregation, traffic on a failed physical
21 interconnect can be directed to one of the other
22 physical interconnects in the aggregated link."
23 So the word "stream" is not stated in any of
24 that portion that I just read, correct?
25 A. You read incorrectly.

1 MR. BLAKE: Objection, asked and
2 answered.
3 THE DEPONENT: There was a minor
4 mistake in your recitation. The last
5 sentence is: "With link aggregation,
6 traffic on the failed physical" --
7 COURT REPORTER: I'm sorry. Could you
8 repeat that?
9 THE DEPONENT: Sure.
10 "With link aggregation, traffic on a
11 failed physical interconnect can be
12 redirected to one of the other physical
13 interconnects in the aggregated link."
14 I heard "directed," but regardless, the
15 work "stream" is not in what you recited.
16 BY MR. HOLT:
17 Q. So to confirm, the word "stream" is not
18 included in this paragraph in Ferguson, correct?
19 A. The word "stream" --
20 MR. BLAKE: Objection.
21 THE DEPONENT: -- does not appear in
22 this paragraph that we have just read into
23 the record of -- from Ferguson.
24 BY MR. HOLT:
25 Q. And that Paragraph is Column 1, Lines 28

1 through 42, correct?
2 A. That's the background paragraph in Ferguson,
3 Column 1, Line 28 through 42, that's correct.
4 Q. Okay. Let's look at Figures 2A through 2C.
5 A. I'm there.
6 Q. Okay. So it's your opinion that these
7 links, 12A and 26, between the router shown in
8 Figures 2A through 2C constitute link aggregate
9 groups; is that correct?
10 A. I mean, it literally says "aggregate
11 interface," and it is my understanding and opinion
12 that these individual physical links are part of a
13 LAG.
14 Q. So Ferguson teaches a technique involving
15 these aggregated links between routers, right?
16 A. Ferguson discusses the fact that routers can
17 have LAGed links between them.
18 Q. Right. Ferguson teaches an invention that
19 involves these aggregated links between the
20 routers, right?
21 A. As I said, LAGs were commonplace technology
22 by 2005, and Ferguson uses LAGs in some of them --
23 in some of its embodiment. It certainly teaches
24 using LAGs in some of the embodiments.
25 Q. And specifically, Ferguson teaches

1 embodiments that involve LAGs between routers,
2 correct?
3 A. So I think we have to be a little bit
4 careful. You know, the term "router" is overly
5 broad.
6 In general, as we are getting label switch
7 packets, these would also be LSRs because they are
8 working with label-switched paths. But yeah,
9 Ferguson uses the use of LAGs in context of MPLS.
10 Q. Okay. And it's your opinion that Ferguson's
11 technique can also be applied within a router; is
12 that right?
13 A. The technique -- I mean, it depends upon
14 what you mean by "Ferguson's technique." It is a
15 long specification with a lot of disclosures and so
16 on, but the idea that one can distribute packets
17 across multiple physical links within a router or
18 across the router can be used interchangeably.
19 Q. So it's your opinion that Ferguson's
20 invention applies both between routers and within a
21 router; is that right?
22 A. I think at this point you need to point me
23 to a specific invention in Ferguson. But what
24 Ferguson says is the techniques that it is
25 describing can be used across routers, within

1 routers. And in general, these types of techniques
2 could have been used and would have been well-known
3 to have been used in context of an invention within
4 a router and also using LAGs between routers.
5 Q. So are you familiar with the invention
6 disclosed in Ferguson?
7 A. I'm not sure I would say "the invention,"
8 because Ferguson has multiple claims and the
9 specification has multiple disclosures.
10 Q. So you're familiar with the inventions in
11 Ferguson?
12 A. I am familiar with Ferguson --
13 MR. BLAKE: Objection.
14 THE DEPONENT: -- yes.
15 BY MR. HOLT:
16 Q. And it's your opinion that those inventions
17 apply to both between routers and within a router?
18 MR. BLAKE: Objection.
19 THE DEPONENT: It depends. You know,
20 depending -- the -- Ferguson's inventions
21 can apply between routers, within routers.
22 And also the techniques described in
23 Ferguson and in Raz, for that matter, can be
24 applied within a router and also across
25 aggregate interfaces between routers.

1 BY MR. HOLT:
2 Q. You said "it depends." What do you mean by
3 that?
4 A. As I said, there are multiple inventions in
5 Ferguson. Right? I don't know off the top of my
6 head all of the claims, but certainly the claims
7 that have to do with distributing packets across
8 LAGs or selecting individual links in a LAG, those
9 could have been applied to LAGs, those could have
10 been applied in context of devices within a router.
11 And similarly, inventions that select individual
12 data paths within a router could also be applied to
13 a LAG.
14 Q. So in your answer you are distinguishing
15 between a LAG versus within a router, correct?
16 MR. BLAKE: Objection.
17 THE DEPONENT: Ideal -- the LAG is a,
18 let's say, series of parallel paths, right?
19 If they are between routers, then they're
20 called a LAG. If it's within a router, they
21 may be called subports. But basically the
22 idea in the inventions in Raz can be applied
23 to both. And for Ferguson, for that matter.
24 BY MR. HOLT:
25 Q. So you mentioned that it depends on which

1 invention in Ferguson we're referring to. Are some
2 inventions in Ferguson for LAGs between routers and
3 other inventions for within a router?
4 A. I'd have to --
5 MR. BLAKE: Objection --
6 (Indiscernible crosstalk.)
7 COURT REPORTER: I'm sorry. I didn't
8 get your objection.
9 MR. BLAKE: I said, objection,
10 mischaracterizes.
11 THE DEPONENT: So everything that
12 Ferguson talks about LAGs, and I think
13 there's some text in Ferguson that which we
14 can take a look at, can be applied equally
15 within a router, and also the techniques of
16 distributing packets within parallel paths
17 within a router are logical -- logical paths
18 such as subports, can be applied to LAGs.
19 Now, off the top of my head, I don't
20 know if Ferguson has some invention that has
21 not -- that is not to do with a LAG, and in
22 that case, it is not clear to me how one
23 would necessarily translate that into
24 something within a router.
25 BY MR. HOLT:

1 Q. So is it fair to say that you don't know if
2 Ferguson includes an invention that would apply
3 between routers but not within a router?
4 MR. BLAKE: Objection.
5 THE DEPONENT: I think I can go through
6 Ferguson's specification with you, but I
7 think what is fair to say is Ferguson's
8 disclosures with respect to a LAG can apply
9 to the notion of subports in Raz, and
10 inventions to do with the subports in Raz
11 can apply to LAGs in general. That's my
12 opinion.
13 BY MR. HOLT:
14 Q. Let's go to Paragraph 75 of your
15 declaration.
16 A. Okay.
17 Q. In the second sentence, it says: "Although
18 the techniques have been described in reference to
19 distribution of MPLS packets across parallel
20 physical interconnects of an aggregated link, the
21 techniques may be applied in a variety of
22 environments. For example, the techniques may be
23 readily applied to internal parallel data paths
24 within a" reference -- or excuse me -- "within a
25 device." Correct?

A. Yes.
Q. And that's quoting from Ferguson, correct?
A. That's correct.
Q. So there it's referring to techniques in Ferguson that have been described for communicating packets across physical interconnects of an aggregated link and saying that -- that those may be readily applied to internal data paths within a device, correct?
A. I think you just reread that, but that's correct.
Q. So this here distinguishes between the parallel physical interconnects of an aggregated link and internal parallel data paths within a device, correct?
A. If anything, it's saying that the techniques that can be applied to one can be applied to the other, they're different physical things but the inventions can be co-applied.
Q. Okay. So the inventions that -- it's saying that the inventions that can be applied to the physical interconnects of an aggregated link may also be applied to the internal parallel data paths within a device, correct?
A. I think you're just quoting Ferguson again,

1 right, where it says, for example: "The techniques
2 may be readily applied to internal" data paths --
3 the "internal parallel data paths within a device,"
4 because parallel data paths within a device is akin
5 to a LAG, and inventions that apply to a LAG can be
6 applied to internal parallel data paths within a
7 device and vice versa.
8 We've been going for an hour, so, you know,
9 when you are at a good time, perhaps we could take
10 another break.
11 MR. HOLT: Sure. We can do a break.
12 Let's go off the record.
13 VIDEOGRAPHER: This ends Media Unit
14 Number 3 in the deposition of Dr. Samrat
15 Bhattacharjee. The time is 11:16 a.m.
16 We're going off the record.
17 (A recess transpired from 11:16 a.m.
18 through 11:26 a.m.)
19 VIDEOGRAPHER: This begins Media Unit
20 Number 4 in the deposition of Dr. Samrat
21 Bhattacharjee. The time is 11:27 a.m.
22 We're back on the record.
23 BY MR. HOLT:
24 Q. So we were discussing Ferguson,
25 Dr. Bhattacharjee. Could you please go to Figure 1

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of Ferguson?

A. Yes, I'm here.

Q. So I'm going to be discussing some disclosure in a specification, but it's going to refer to this Figure 1. Specifically you see that the CE router 8A is connected to PE router 10A which is then connected over provider network 6 to PE router 10B which is then connected to CE router 8B.

Do you see that?

A. Yes.

Q. Okay. So we look at Column 3, at Line 53.

A. Okay.

Q. Sentence begins, it says, "For example, CE router 8A receives network traffic originating from devices within customer network 4A, and pre-pends MPLS labels to the network traffic to form outbound MPLS packets. CE router 8A communicates the outbound MPLS packets to PE router 10A via aggregated link 12A"; is that correct?

A. That's correct.

Q. So this is saying that the CE router 8A pre-pends an MPLS label to the packet and then sends the packet via the aggregated link 12A, correct?

1 A. I don't recall the -- I guess it's 12 -- I
2 don't remember what 12A is, but it is saying CE
3 router 8A communicates outbound MPLS packets to PE
4 router 10A via the aggregated link 12A, I guess
5 that's correct, yes.
6 Q. Okay. And before it sends those outbound
7 packets across the aggregated link 12A, CE router
8 8A pre-pends labels to the packets, correct?
9 A. That's correct.
10 Q. So for the next step, we can look at Line 59
11 in Column 3. It says, "PE router 10A receives the
12 MPLS packets and forwards the MPLS packets to one
13 or more intermediate routers (not shown) within
14 provider network 6 for communication to PE router
15 10A via one of LSPs 14."
16 That's what it says, correct?
17 A. That's correct.
18 Q. I believe that's a typo in the second
19 reference to 10A. I believe that should say for
20 communication to PE router 10B.
21 Do you agree?
22 A. I believe that's correct.
23 Q. So it doesn't say anything about PE router
24 10A adding packets. It just uses the packet -- or
25 excuse me. Strike that.

1 This here doesn't say anything about PE
2 router 10A adding a label; it just uses the label
3 that's already with the MPLS packet.
4 Do you agree?
5 A. I would disagree with that characterization
6 because the very next sentence says, "PE router 10A
7 may, for example, pre-pend additional MPLS labels
8 to the traffic to form MPLS packets having multiple
9 MPLS labels."
10 Q. Yes. Yes, you have -- sorry, I was headed
11 there next.
12 So as you see -- or as you recited, the next
13 sentence says that the PE router 10A may pre-pend
14 additional MPLS labels, correct?
15 A. That's correct.
16 Q. So then the PE router 10A receives the
17 packet from the CE router 8A and either passes it
18 along using the existing label or pre-pends an
19 additional label and then passes it along, correct?
20 A. That's fair.
21 Q. So for the next step, if we look at
22 Column 4, at the top of Column 4, it says, "PE
23 router 10B receives the MPLS packets from provider
24 network 6 and forwards the MPLS packets to CE
25 router 8B via aggregated link 12B," correct?

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1 A. That's correct.
2 Q. And in the next sentence, it says that "PE
3 router 10B may, for example, remove one or more
4 MPLS labels from each of the inbound packets and
5 distribute the packets across the physical
6 interconnects that are logically associated to form
7 aggregated link 12B," correct?
8 A. That's correct.
9 Q. So here PE router 10B received the packet
10 through the provider network 6 and then either just
11 sends the packet via aggregated 12 -- aggregated
12 link 12B or removes the label and then sends the
13 packet via aggregated link 12B, correct?
14 A. It may remove one or more labels but other
15 than that --
16 COURT REPORTER: Other than that, what?
17 BY MR. HOLT:
18 Q. Okay. So at each of these routers described
19 in Figure 1, CE router 8A, PE router 10A, and PE
20 router 10B, the router either pre-pends its own
21 label or uses a label that was already added by an
22 upstream node, correct?
23 A. It is not clear to me that the disclosure
24 was necessarily saying 12B adds a label, but I
25 mean, it wouldn't stop it from adding it. But in

1 general, yeah, it may use the label -- routers may
2 use the existing label, may remove a label, may add
3 a label, depending upon how the MPLS LSPs are
4 provisioned.
5 Q. Okay. There's no discussion in the portions
6 we looked at of any of these routers getting a
7 label from a downstream router, correct?
8 A. The -- okay. So getting a label from a
9 downstream router happens in the signaling phase,
10 and in general, for an RSVP or MPLS path to be set
11 up, there is a connection admission control
12 protocol that will be run, and the labels can come
13 from the downstream or a -- that's a manager node
14 on the network.
15 This is talking about what's happening on
16 the data path, not on the control path.
17 Q. So there's no discussion here about the
18 control path, correct?
19 A. These disclosures are discussing what
20 happens after the control path has been set up or
21 after the control has happened, and then this is
22 what's happening when the data is flowing.
23 Q. As for what is described, there's no
24 description of the labels being applied by router
25 8A or router 10A being received from a downstream

1 router, correct?
2 A. The point is, this is when the labels have
3 already been set up. This is not the place to look
4 for how the labels are set up. That's well
5 understood in MPLS. This is talking about the data
6 flow, not the setup of the LSP.
7 Q. So, again, my question was, as for what is
8 described in these portions that we've looked at,
9 there's no description of the labels being applied
10 by router 10A or 10A being received from a
11 downstream router, correct?
12 MR. BLAKE: Objection, asked and
13 answered.
14 THE DEPONENT: Again, you know, you're
15 asking about a phase of data transfer that's
16 simply not being discussed here. So, you
17 know, this is talking about what happens
18 when the packets are following on MPLS, and
19 this is saying how labels may be pre-pended,
20 stacked, removed while the data is
21 following.
22 BY MR. HOLT:
23 Q. So you said that I'm asking about a phase of
24 data transfer that's not being discussed here.
25 So you agree there's no discussion here of

1 the labels described being received from a
2 downstream router, correct?
3 A. Can you be a bit more precise by what you
4 mean by "here"? If you mean these specific lines,
5 these are talking about data transfer. And by this
6 time, the labels have already begin associated with
7 the LSP, and the routers are just doing what they
8 would normally do during the data transfer phase.
9 Receipt of labels happens prior to this phase.
10 Q. So by "here," I'm referring to the portions
11 of Column 3 and Column 4 that we discussed in
12 Ferguson.
13 Can you agree that in those portions there's
14 no express description of a label being received
15 from a downstream router, correct?
16 A. Column 3, Line 59 on to Column 4, that's at
17 Line 8 or 9 is talking about data flow, and it's
18 not talking about label assignment.
19 Q. So again, my question is, in Column 3,
20 Line 53 through Column 4, Line 8, there's no
21 express description of a label being received from
22 a downstream node, correct?
23 A. Sorry. You said Column 3, Line 53 now?
24 Okay. That's what we're looking at. Yeah. So
25 those lines are talking about data flow and what

1 the routers do while the -- after the labels have
2 already been associated with the LSP, and it's not
3 talking about how the labels were assigned.
4 Q. So you said it's not talking about how the
5 labels are assigned, but my question is more
6 specific.
7 My question is specifically Column 3,
8 Line 53 through Column 4, Line 8 contains no
9 express description of receiving a label from a
10 downstream router, correct?
11 A. So these lines are talking about MPLS, and
12 of -- one of ordinary skill would understand that
13 there is the usual MPLS signaling using the, for
14 instance, RSVP path messages and so on. And that
15 happens prior to this step, and it's during that
16 step that the downstream may assign a label to the
17 upstream.
18 Q. So, Dr. Bhattacharjee, you're not answering
19 my specific question, which is about the express
20 disclosure in the sections.
21 So again, Column 3, Line 53 through
22 Column 4, Line 8 of Ferguson, yes or no, does not
23 contain any express description of receiving a
24 label from a downstream router?
25 MR. BLAKE: Objection, asked and

1 answered.
2 THE DEPONENT: These -- the description
3 here and the disclosures here are post when
4 label assignment happens. And so, I mean,
5 you know, I've been trying to answer your
6 question as well as I can. This is after
7 label assignment, and so this is just saying
8 what happens in the data path. It is not
9 concerned with how the label was assigned.
10 BY MR. HOLT:
11 Q. You understand whenever I say "express
12 description," I mean via the expressed or explicit
13 words contained in the disclosure portions we're
14 referring to, correct?
15 A. I have an understanding of what you mean by
16 "express disclosure," correct.
17 Q. And you're familiar with the expressed
18 disclosures we just read from Column 3, Line 53
19 through Column 4 Line 8 of Ferguson, correct?
20 A. That's correct.
21 Q. So you agree that there is no express
22 description of a downstream node in those portions?
23 A. I would disagree with that characterization.
24 Q. You would agree that there is no express
25 description from Column 3, Line 53 through

1 Column 4, Line 8 of a label being received from a
2 downstream node?
3 A. Look, the specification has to be read in
4 light of the knowledge of a person of ordinary
5 skill at the time of the priority date. And here,
6 one of ordinary skill would understand that this
7 express disclosure is talking about a phase of
8 communication that happens after the labels have
9 been assigned. And -- and so it's not concerned
10 with how the label was assigned. It's talking
11 about the data flow phase, not label assignment.
12 Q. So, Dr. Bhattacharjee, you're referring to
13 how a person of ordinary skill would read this
14 section. I'm asking a different question.
15 I'm asking instead, more specifically, about
16 the express words used in the description. Do you
17 agree, yes or no, that the express description from
18 Column 3, Line 53 through Column 4, Line 8 does not
19 expressly and explicitly describe receiving a label
20 from a downstream node?
21 A. The specification always has to be read in
22 light of the knowledge of one of ordinary skill in
23 the art. And, you know, the fact of the matter is
24 one of ordinary skill reading this would understand
25 that the question you're asking does not apply to

1 the excerpts that we have read into the record.
2 This is talking about a different phase of
3 communication.
4 Q. So if it's talking about a different phase
5 of communication, then it cannot be describing
6 receiving a label from a downstream node, correct?
7 A. This part is talking about data transfer.
8 The label assignment has already happened and one
9 of ordinary skill would understand that given that
10 this is using MPLS, downstream nodes could often
11 assign labels. That's not precluded here at all.
12 Q. So at Column 3, starting at Line 53 says:
13 "For example, CE router 8A receives network traffic
14 originating from devices within customer network 4A
15 and pre-pends MPLS labels to the network traffic to
16 form outbound MPLS labels."
17 This sentence does not expressly state that
18 the pre-pended MPLS labels are received from a
19 downstream node, correct?
20 A. Can you read that again, because I don't
21 believe that's what the specification says.
22 Q. So looking at Column 3, Line 53, the
23 sentence starting at the line that says: "For
24 example, CE router 8A receives network traffic
25 originating from devices within customer network 4A

1 and pre-pends MPLS labels to the network traffic to
2 form outbound MPLS packets. CE router 8A
3 communicates the outbound MPLS packets to PE router
4 10A via aggregated link 12A."
5 So that portion does not expressly and
6 explicitly state that the pre-pended MPLS labels
7 are received from a downstream node, correct?
8 A. This portion has to do with the data
9 transfer and is not concerned with how the labels
10 were assigned.
11 Q. So this portion does not expressly state
12 that the pre-pended MPLS labels are received from a
13 downstream node, correct?
14 A. This portion has to do with data transfers
15 and is not concerned with how the labels were
16 assigned or from where they were received.
17 Q. So you're not answering my specific
18 question, Dr. Bhattacharjee, which is the expressed
19 words of this disclosure do not expressly state
20 that the pre-pended MPLS labels are received from a
21 downstream node, correct?
22 A. This is, I guess, where we are having our
23 issue. You're asking me what would one of ordinary
24 skill understand as to where the labels were
25 received given the statements that we have.

1 Given the statements that we have, we're not
2 talking about how the label was assigned. One of
3 ordinary skill would understand that they could
4 have been assigned by a downstream node. As far as
5 what the sentences themselves say, they stand by --
6 they stand on their own.
7 Q. So I'm not asking what a person of ordinary
8 skill would understand from the words. I'm asking
9 what the words themselves expressly state.
10 You said earlier that you understand the
11 meaning of express and explicit disclosure. So I
12 asked you this portion from Column 3, Line 53
13 through 58 does not expressly state that the
14 pre-pended MPLS labels are received from a
15 downstream node, correct?
16 A. Again --
17 MR. BLAKE: Objection. Asked and
18 answered multiple times.
19 THE DEPONENT: You're asking me about
20 something that is not related to this
21 particular sentence.
22 Now, if you ask me about something
23 related, I would have to take into account
24 what one of ordinary skill would have
25 thought, given this disclosure.

1 And so if you somehow are asking me to
2 say this disclosure here precludes
3 downstream label assignment, I would have to
4 disagree. But as to what the expressed
5 disclosure is, we read it multiple times and
6 it's talking about a different phase of data
7 transfer.
8 BY MR. HOLT:
9 Q. Earlier you referenced the inventions in
10 Ferguson and said that there are multiple
11 inventions in Ferguson, correct?
12 A. I believe there are multiple claims, yes.
13 Q. Have you analyzed which of those claims
14 apply within a router?
15 A. I would have to analyze a specific claim.
16 If you were to point me to a specific claim, I can
17 think about it.
18 Q. I'm asking, have you assessed all of the
19 inventions in Ferguson and analyzed which of them
20 apply to within a router?
21 A. In general -- and, again, without going
22 through a specific claim, I will just say this:
23 Ferguson's techniques that apply to a LAG can apply
24 to within parallel paths within a router and vice
25 versa.

1 Q. So my question was different. My question
2 was, have you assessed each of the inventions that
3 you identified in Ferguson to see which of them
4 would apply within a router?
5 A. So my answer is, again, twofold. If we look
6 at a specific invention or claim or disclosure from
7 Ferguson, I can give you my opinion. My general
8 analysis is when Ferguson is teaching techniques
9 that apply to a LAG, it can also apply to parallel
10 data paths within a device, and also vice versa.
11 Beyond that, I think I don't want to
12 overgeneralize, so we should take a look at either
13 a claim or parts of the specification.
14 Q. So whether or not an invention would apply
15 to within a router depends on the specifics of the
16 embodiment or the invention -- the specifics of the
17 invention as described in the claim of the
18 specification.
19 Is that what you're saying?
20 MR. BLAKE: Objection.
21 THE DEPONENT: I'm saying that
22 generally inventions that apply to a LAG can
23 be applied to internal data paths within a
24 device and also inventions to do with
25 techniques that apply to internal data paths

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Patent Owner Corrigent Exhibit 2008-0088

1 within a device can also be applied to a LAG
2 in general.
3 But if you want me to analyze something
4 more specific than that, then we should find
5 something more specific to talk about.
6 BY MR. HOLT:
7 Q. So you're referring to inventions in the
8 abstract. My question is about specifically the
9 inventions of Ferguson.
10 It's fair to say that you haven't done an
11 invention-by-invention analysis to see specifically
12 which inventions of Ferguson are compatible to be
13 applied within a router; is that correct?
14 A. I would disagree with that characterization.
15 Q. So is it fair to say that you have done an
16 invention-by-invention analysis to see specifically
17 which inventions of Ferguson can be applied within
18 a router?
19 MR. BLAKE: Objection to form.
20 THE DEPONENT: First, my analysis is
21 whether the combined system of Raz and
22 Ferguson renders the '602 patent obvious.
23 That's the opinion that I've given.
24 Beyond that, I have looked at Ferguson
25 and as I've said, in general, as far as I

1 know, the techniques in Ferguson that apply
2 to a LAG can be applied to internal data
3 paths within a device and also vice versa.
4 Beyond that, if there is a specific one
5 that you think may not apply, then I can
6 look at it again.
7 BY MR. HOLT:
8 Q. You said that your analysis is whether the
9 combined system of Raz and Ferguson renders the
10 '602 patent obvious. Did you rely on any
11 particular embodiment of Ferguson, or just Ferguson
12 generally?
13 A. I relied on the teachings of Raz and the
14 teachings of Ferguson and what one of ordinary
15 skill in the art would understand from those
16 teachings.
17 Q. Did you rely on any particular embodiment in
18 Ferguson?
19 A. I believe all of the embodiments in Ferguson
20 that concern a LAG are relevant and can be used in
21 the combined system of Raz and Ferguson.
22 Q. So you don't rely on any particular
23 embodiment, but rather, all of the embodiments in
24 Ferguson that involve a LAG; is that correct?
25 MR. BLAKE: Objection.

1 THE DEPONENT: I don't want you to
2 mischaracterize or misunderstand what I'm
3 trying to say.
4 Ferguson has multiple embodiments, and
5 the idea of LAG is in, I believe, all of the
6 embodiments, and any of those embodiments in
7 combination with Ferguson would render the
8 '602 patent obvious.
9 BY MR. HOLT:
10 Q. Some of Ferguson's embodiments are applied
11 to LAGs between routers, correct?
12 A. At least some, yes, that's correct.
13 And just so we're clear, I don't want to use
14 the term "router" to preclude MPLS.
15 Q. I'm going to publish the next exhibit.
16 (EXHIBIT 5, previously marked Exhibit
17 1001, U.S. Patent Number 9,118,608 to
18 Solomon, was marked for
19 identification.)
20 BY MR. HOLT:
21 Q. This is -- I've now uploaded into the shared
22 exhibit folder a document that was previously
23 marked Exhibit 1001 in this proceeding.
24 If you could let me know when you see it.
25 A. Yes.

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Patent Owner Corrigent Exhibit 2008-0091

1 Q. So this is a document that was previously
2 marked as Exhibit 1001 in this IPR, now marking it
3 Exhibit 5 of the deposition, which is U.S. Patent
4 Number 9,118,608 to Solomon, correct?
5 A. That's correct.
6 Q. During this deposition, if I refer to the
7 60 --
8 A. I don't know if there are two inventors or
9 just one.
10 Q. There's only one named inventor.
11 A. Okay.
12 Q. So during this deposition, if I refer to the
13 '602 patent, I'm referring to this exhibit. Okay?
14 A. Okay.
15 Q. And have you seen the '602 patent before?
16 A. Yes, I have.
17 Q. And when was that?
18 A. When I was asked to work on this IPR.
19 Q. Were you familiar with the '602 patent
20 before being asked to work on this IPR?
21 A. Not to my knowledge.
22 Q. And how long did you spend reviewing the
23 '602 patent for purposes of this IPR?
24 A. Several hours.
25 Q. Let's look at Claim 1 in Column 9.

1 A. Okay.
2 Q. Claim 1 recites a method for an MPLS
3 network, correct?
4 A. The -- you're referring to the --
5 (inaudible).
6 COURT REPORTER: I'm sorry?
7 (Indiscernible crosstalk.)
8 THE DEPONENT: Yeah, in general,
9 Claim 1 is talking about MPLS/LAG switches
10 both in the body and preamble, that's
11 correct.
12 BY MR. HOLT:
13 Q. Okay. So specifically, Claim 1 recites a
14 method for an MPLS network with a LAG included,
15 correct?
16 A. The preamble says: "A method for assigning
17 and utilizing an Ethernet physical data port in an
18 Ethernet Link Aggregation Group (LAG) in a
19 Multi-Protocol Label Switching (MPLS) network,"
20 that's correct.
21 Q. The body of the claim as well refers to
22 MPLS/lag switches and a LAG, correct?
23 A. The body does refer to MPLS and LAG.
24 Q. So Claim 1 is directed to a method for an
25 MPLS network that includes a LAG, correct?

1 A. Specifically --
2 MR. BLAKE: Objection. Asked and
3 answered.
4 THE DEPONENT: Specifically an Ethernet
5 LAG, but, yes.
6 BY MR. HOLT:
7 Q. And Claim 15 similarly recites an apparatus
8 for an MPLS network with a LAG, correct?
9 A. An Ethernet LAG, but, correct, yes.
10 Q. So looking at Claim 1, you recognize that
11 Claim 1 recites a LAG, correct?
12 A. That's correct, and it says LAG is an
13 Ethernet Link Aggregation Group.
14 Q. And the LAG is between the claimed first and
15 second MPLS LAG switches, right?
16 A. I don't know that Claim 1 talks about a
17 second switch. Can you point me to a second
18 switch?
19 Q. Yes, in the last clause --
20 A. Oh, okay, yeah. And there's a typo, but,
21 yes.
22 Q. So Claim 1 includes a LAG between the
23 claimed first and second MPLS/LAG switches, right?
24 A. That's correct, yes.
25 MR. BLAKE: Objection.

BY MR. HOLT:

Q. So in the first clause of Claim 1 regarding assigning, it says -- it refers to a single physical tunnel port of the LAG, correct?

A. It does, yes.

Q. So the claimed single physical tunnel port is part of the LAG, correct?

A. That is correct.

Q. In the last clause of Claim 1 regarding sending it says, "Sending said data packet from first MPLS/LAG switch to a second MPLS/LAG switch via said single physical tunnel port," correct?

A. It does, except -- at least my copy says second MSPLS/LAG switch.

Q. Correct. You understand that to mean an MPLS/LAG switch, correct?

A. If you make that representation, I will accept it.

Q. Okay. I'll make that representation and just repeat the question which was, in the last clause of Claim 1 regarding sending, it says, "Sending said data packet from said first MPLS/LAG switch to a second MPLS/LAG switch via said single physical tunnel port," correct?

A. It says more, but it does say that.

1 Q. Okay. So the data packet, according to
2 Claim 1, is sent from the first MPLS/LAG switch to
3 the second MPLS/LAG switch via that single physical
4 tunnel port, correct?
5 A. That -- I mean, it says more, but that is
6 part of what it says.
7 Q. So you agreed earlier that the physical
8 tunnel port is part of the LAG, and the LAG is
9 between the first and second MPLS/LAG switches. So
10 when this clause says that the data packet is sent
11 via that single physical tunnel port, it's part of
12 the LAG, it means that that data packet is sent via
13 that physical tunnel port between the first and
14 second MPLS/LAG switches, correct?
15 MR. BLAKE: Objection to form.
16 THE DEPONENT: I mean, the claim says
17 what it says, and you know, there is a an
18 antecedent basis, so --
19 COURT REPORTER: A, what, basis?
20 THE DEPONENT: I'm sorry. I'm saying
21 the claim says what it says, and there is an
22 antecedent basis, and I don't want to
23 characterize the claim more than what it
24 says.
25 BY MR. HOLT:

1 Q. That last clause of Claim 1 says that "the
2 data packet is sent from said first MPLS/LAG switch
3 to a second MPLS/LAG switch," right?
4 A. It does say that, and more.
5 Q. So the first MPLS/LAG switch is the sending
6 switch, and the second MPLS/LAG switch is the
7 receiving switch in this scenario, correct?
8 A. It appears to be, yes.
9 Q. Claim 1's first clause regarding assigning
10 says "assigning by a first MPLS/LAG switch, a
11 single physical tunnel port," correct?
12 A. Among other things, yes.
13 Q. So the claimed single physical tunnel port
14 is assigned by the first MPLS/LAG switch which is
15 the sending switch, correct?
16 A. It's --
17 MR. BLAKE: Objection to form.
18 THE DEPONENT: Yeah, it's the first
19 MPLS/LAG switch.
20 BY MR. HOLT:
21 Q. And the first clause says that the claimed
22 single physical tunnel port is assigned by that
23 first MPLS/LAG switch, correct?
24 A. The first --
25 MR. BLAKE: Same objection.

1 THE DEPONENT: The first clause says
2 assigning by a first MPLS/LAG switch, a
3 single physical tunnel port of a LAG to a
4 network tunnel, and it goes on.
5 BY MR. HOLT:
6 Q. So the first MPLS/LAG switch assigns the
7 single physical tunnel port, right?
8 MR. BLAKE: Objection.
9 THE DEPONENT: You know, I don't want
10 to characterize the claim, but we can just
11 read it -- we're just reading the words from
12 the claim, and if we just read the whole
13 thing, then I would just say yes. I don't
14 want to --
15 BY MR. HOLT:
16 Q. Did --
17 A. Yeah. Go ahead, please. Sorry.
18 Q. The next clause says, "Dedicating a subset
19 of bits in a data packet label prepared by the
20 first MPLS/LAG switch to encode said port serial
21 number of said single physical tunnel port of the
22 LAG into the data packet label," correct?
23 A. It does say that.
24 Q. So this clause says that the data packet
25 label is prepared by the first MPLS/LAG switch,

1 right?
2 A. Again, you're characterizing what the claim
3 says. And, yeah, among other things, it says
4 "dedicating a subset of bits in the data packet
5 label prepared by the MPLS/LAG switch to encode
6 said port number of said physical tunnel port of
7 the LAG into the data packet label."
8 Q. Let's go up to Column 2. Starting at the
9 top of Column 2.
10 Will you let me know when you're there?
11 A. Yes.
12 Q. So here it says, "Link aggregation (LAG) is
13 a technique by which a group of parallel physical
14 links between two endpoints in a data network can
15 be joined together into a single logical link
16 referred to as a 'LAG group')," correct?
17 A. Right.
18 Q. So this says that a LAG joins together
19 parallel physical links, correct?
20 A. It says what it says, which is "LAG is a
21 technique by which group of parallel physical links
22 between two endpoints in a data network can be
23 joined together into a single logical link."
24 Q. The term "stream" is not mentioned in this
25 sentence in Column 2 regarding a LAG, correct?

MR. BLAKE: Objection.

THE DEPONENT: We just read it. I don't believe the word "stream" is in there.

MR. HOLT: Let's go off the record.

VIDEOGRAPHER: This ends Media Unit Number 4 in the deposition of Dr. Samrat Bhattacharjee. The time is 12:12 p.m. We're going off the record.

(A recess transpired from 12:12 p.m. through 12:19 p.m.)

VIDEOGRAPHER: This begins Media Unit Number 5 in the deposition of Samrat Bhattacharjee. The time is 12:19 p.m. We're back on the record.

MR. HOLT: Patent owner has no further questions for the witness.

MR. BLAKE: Thank you, Ben.

The petitioner has no questions for the witness.

MR. HOLT: Thank you, Dr. Bhattacharjee.

We can go off the record.

VIDEOGRAPHER: This ends the deposition of Dr. Samrat Bhattacharjee. The time is 12:20 p.m. We're going off the record.

(Off video record.)

COURT REPORTER: I need y'all to state your orders on the record, please.

MR. BLAKE: Do you want to go first, or do you want me to go first?

MR. HOLT: Madonna, I believe the details for order --

COURT REPORTER: I have yours. You have a standing order.

MR. HOLT: Yes.

COURT REPORTER: And it's expedited.

MR. BLAKE: Madonna, I'd just like a copy of the transcript on a regular timeframe. I do not need it expedited, and I do not need a rough.

COURT REPORTER: Okay. Thank you.

(The deposition concluded at 12:20 p.m.)

1 CERTIFICATE OF REPORTER

2 I, Madonna M. Farrell, Registered
3 Professional Reporter and Notary Public in and for
4 the State of South Carolina, do hereby certify that
5 the deponent, SAMRAT BHATTACHARJEE, PhD, was
6 remotely sworn by me to testify to the truth, under
7 the penalty of perjury and that the above
8 deposition, Pages 1 through 101, inclusive, was
9 recorded stenographically by me and transcribed
10 through computer-aided transcription by me to the
11 best of my ability.

12 I FURTHER CERTIFY that the foregoing
13 transcript is a true and correct transcript of the
14 testimony given remotely by the said witness at the
15 time and place specified.

16 I FURTHER CERTIFY that I am neither attorney
17 or counsel for, nor related to or employed by any
18 of the parties to the action in which this
19 deposition is taken, or financially interested in
20 this action.

21 IN WITNESS WHEREOF, I have set my hand and
22 seal this 13th of November, 2023.

Madonna M Farrell

23 Madonna M. Farrell
Registered Professional Reporter
24 Notary Public
My commission expires
25 August 20, 2025

1 VERIFICATION OF DEPONENT

2 CASE: Corrigent Corporation vs. Cisco Systems,Inc.

3 I, SAMRAT BHATTACHARJEE, have read the

4 foregoing deposition consisting of 104 pages which

5 was reported by Madonna M. Farrell, Registered

6 Professional Reporter and notary public in and for

7 the State of South Carolina on November 13, 2023.

8 I find the transcript of this deposition to

9 be a true and accurate transcript according to my

10 testimony on that date with the exception of

11 corrections as listed on the attached correction

12 sheet, which was filled in by me.

13

14

15

16 SAMRAT BHATTACHARJEE, PhD

17

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1 ERRATA PAGE
2 PAGE # - LINE # CHANGE AND/OR CORRECTION
3 (AND EXPLANATION)
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21 PAGE FOR MY RECORDS, AND THE COURT REPORTER IS TO
ATTACH THIS PAGE AND MY VERIFICATION TO THE
22 ORIGINAL TRANSCRIPT.
23
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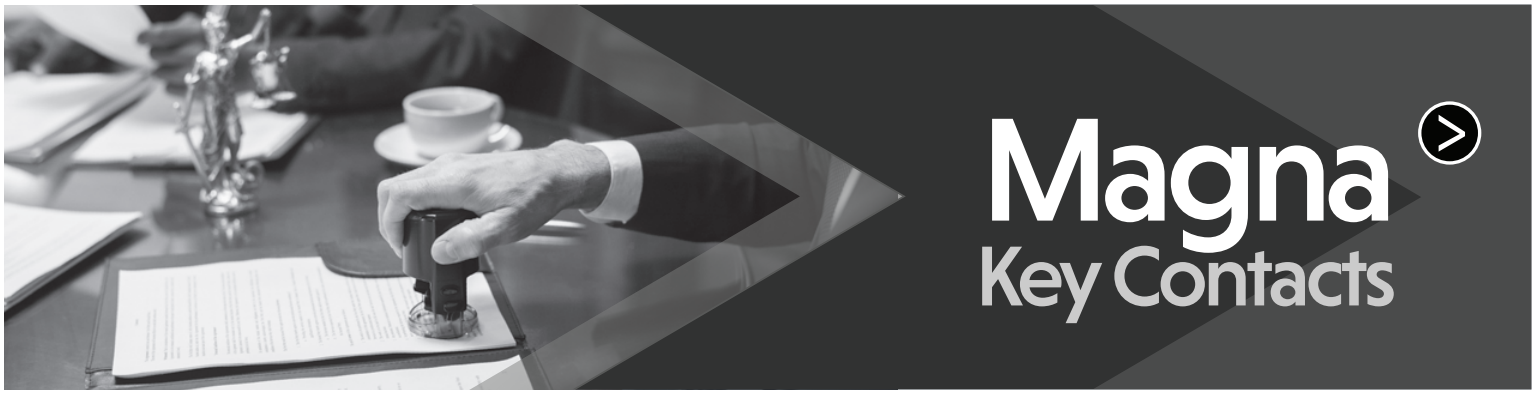
24 SAMRAT BHATTACHARJEE, PhD
25



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