UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.,	)	
Petitioner,	)	IPR2024-01450
vs.	)	Patent No. 7,596,088
PORTSMOUTH NETWORK CORP.,	)	
Patent Owner .	)	

ZOOM DEPOSITION OF JAMES OLIVIER, Ph.D.

(Taken by Petitioner)

October 3, 2025

10:56 a.m.

Deposition held via Zoom Videoconference

Reported by:

F. Renee Finkley, RPR, RMR, CRR, CLR, CCR-B-2289

(Via Videoconference)

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I N D E X

WITNESS: JAMES OLIVIER, Ph.D. (Via Videoconference)

EXAMINATION Page

By Mr. Clements 4

(The witness was sworn.)

JAMES OLIVIER, Ph.D.,

having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. CLEMENTS:

Q. All right. Good morning, Dr. Olivier.

A. Good morning.

Q. Can you please state your full name for the record?

A. James Lawrence Olivier.

Q. And you've been deposed before, correct?

A. Correct.

Q. About how many times?

A. More than 20.

Q. Okay. So you generally know how depositions work then, correct?

A. Correct.

Q. And you know that you must provide verbal answers to my questions so that the court reporter can make an accurate transcript?

A. Yes.

Q. And because we're forming a record here, it's important that we don't talk over each other. So if you can let me finish my question, I'll let you

finish your answers. Agreed?

A. Agreed.

Q. And you understand that your counsel might object to a question, but you still must provide an answer to that question unless instructed otherwise, correct?

A. That's my understanding.

Q. And if you're confused as to a question I ask, please let me know so that I can perhaps ask it a different way. And you're connecting to this deposition today on a personal computer, correct?

A. Correct.

Q. And aside from the Zoom application, are there any other applications running on your computer?

A. Yeah. I have SMU e-mail running on it.

Q. Are there any documents open on your personal computer?

A. No.

Q. Any web pages or messaging programs?

A. Well, the e-mail is a -- I guess a messaging program and also there's a Zoom app opened on my web browser.

Q. Okay. Do you have any other electronic devices in the room with you?

A. I have a cell phone with me.

Q. Is it turned off?

A. No. I could turn it off though.

Q. Okay. Are there any other people in the room with you today?

A. Nope.

Q. Do you have any handwritten notes with you?

A. No.

Q. Is there any reason you cannot provide full and accurate testimony today?

A. No.

Q. And you understand that the testimony you are providing today will be used in Inter Partes Review Proceedings IPR 2024-01450, correct?

A. Yeah. I don't know the exact number off the top of my head, but that sounds correct.

Q. And you understand that your testimony will be publicly available if filed in these proceedings, correct?

A. Yes.

Q. And this IPR, IPR 2024-01450, it concerns U.S. Patent 7,596,088, correct?

A. Like I said, I have no documents in front of me. I call it the '088 patent so that sounds

correct.

Q. Okay. So for today's deposition, we'll be talking about your declaration and the exhibits. Do you have a physical copy of those exhibits with you?

A. No.

Q. Do you have them open on your computer?

A. No.

Q. Do you have copies of them so that you can open them up on your computer?

A. Maybe. I thought usually people drop them in the chat and I load them, but do you want me to look for them?

Q. If you have them readily available, yes. If not, I can put them in the chat when we start talking about them. Either way works for me.

A. Okay. I think I have -- and what do you --

Q. I suppose we can wait 'til we get there, but it's going to be your declaration. It's going to be a copy of the '088 patent and the two main references, Exhibit 1005 and Exhibit 1006, which are the Dziong and Sathyanath references.

A. Okay. Yeah, I've got those in a folder here.

Q. Okay. So we'll get to those in a minute,

but I guess you can just open them up when we --

[Cross-talking.]

Q. And how many IPRs have you worked on?

A. I think probably more than 20.

Q. Okay. And just so for definitions today, if I use the acronym POSITA, you'll understand I'm talking about a person of ordinary skill in the art as of January 2006, which is the earliest alleged priority date of the '088 patent, correct?

A. Well, if you say a POSITA of that date yes. POSITA just means person of ordinary skill in the art, as I understand it.

Q. Yes. And in the context of this patent, it will be the -- a POSITA as of January 2006.

A. Okay.

Q. Have you provided expert consulting services for Portsmouth prior to this case?

A. Expert consulting services, what do you mean by that?

Q. Your expert consulting services for this IPR.

A. So I have -- I don't quite understand your question. Your question was have I provided expert consulting services, and when I ask what that is, you say expert consulting services for this IPR.

Q. Yeah. The type of consulting services that you're doing for this IPR, have you done this type of work for Portsmouth before?

A. Yes.

Q. And when did you begin working on this matter for Portsmouth?

A. This particular matter?

Q. Yes.

A. I have no idea.

Q. Who wrote your declaration?

A. I did.

Q. Were you provided with a first draft?

A. Nope.

Q. Who came up with the positions in your declaration?

A. I did.

Q. Approximately how long did you spend preparing your declaration?

A. Like I say, I can go back and look at my records. I don't really know. Greater than 20 hours, less than a hundred hours if I had to guess.

Q. Are there any errors in your declaration that you're aware of?

A. I don't know. I'd have to look through it. Not that I'm aware of as I sit here.

Q. Do you still stand by all of the opinions that you've provided in your declaration?

A. Absolutely.

Q. Have you reviewed any documents to prepare for this deposition?

A. Yes.

Q. Have you reviewed the petition?

A. Nope.

Q. Have you reviewed the '088 patent?

A. Yes.

Q. And did you review the '088 patent in its totality?

A. Did I review the '088 patent in its totality, yes.

Q. Did you review the cited exhibits?

A. In preparation for this deposition, the exhibits cited in the '088 patent? I guess I don't understand your question.

Q. Cited in this IPR.

A. Cited in this IPR. You have to let me know what you mean when you say "exhibits cited in this IPR."

Q. So the IPR has several exhibits including Exhibit 1005, which is the Dziong reference, also Exhibit 1006, the Sathyanath reference, but there are

many other references that have been cited. Are you familiar with all of those references?

A. Again, what is the listed references you're referring to? And I can give you an answer.

Q. The petition lists a certain number of references, but you said you have not reviewed the petition?

A. Correct.

Q. Have you reviewed Dr. Mir's expert declaration?

A. Yes, in preparing my declaration, not in -- I may have reviewed it a little bit, portions of it in preparation for this. I thought this was all in regard to preparation for this deposition.

Q. Yeah. And so -- but we're talking about which exhibits you've reviewed that are of record in this case.

A. I've got to admit, I've lost the train of your question. Could you rephrase it?

Q. Did you review the cited exhibits for this case?

A. Did I review the cited exhibits for this case, and by "this case," you mean for any time during this case?

Q. These exhibits would have been identified

in Dr. Mir's expert report.

A. Okay. I guess if you could ask it just a little more plainly, I think we can get to some understanding.

Q. Give me a second to bring up Dr. Mir's report and I can tell you which page. Do you by chance have a copy of Dr. Mir's expert report?

A. Yes, I can find it. Hold on one sec. Declaration, correct?

Q. Yep, Exhibit 1003.

A. Okay. I've got it.

Q. All right. On page 5 -- well, starting on page 4, it starts listing the exhibits, pages 4 through 5.

A. Okay. So what is your question?

Q. So do you see that there's exhibits here starting with paragraph 4, it states, "In preparation of this declaration, I've studied the '088 patent, the prosecution history, the Dziong reference," and the next page I see it begins listing other references.

A. Uh-huh.

Q. Do you see that?

A. Yes.

Q. Have you reviewed those references listed

on pages 4 and 5?

A. So I listed -- I reviewed the references in my declaration it says in paragraph 16. I pulled it up. The ones I reviewed are documents listed in paragraph 4 of Dr. Mir and then any other references that I've cited in the declaration, if that clarifies it.

Q. Yes. Thank you. Did you review the Board's institution decision in preparing for this deposition?

A. No, not in preparing for this deposition.

Q. Did you review the Board's institution decision in preparing your expert report?

A. Yes.

Q. Did you review any other documents in this case?

A. Did I review any other documents in this case? I -- the documents I relied on for my declaration are in my declaration. I didn't keep a list of all the other documents I may or may not have reviewed during the understanding of this case.

Q. All right. Let's turn to your declaration, Exhibit 2008. On page 10, there's a heading of Level of Ordinary Skill in the Art.

A. Can you give me the paragraph number?

Q. Sure. We're going to start with paragraph 31.

A. Gotcha. Okay. Hold on one second. Yes.

Q. There it says that you agree with Dr. Mir's opinion on the qualifications of a POSITA, and then you say, "Based on my experience, I'm more than qualified as a POSITA." Is that correct?

A. Correct.

Q. And what do you mean by that statement?

A. That I have more qualifications than the one listed -- that Dr. Mir said a POSITA would have a Bachelor's Degree in Computer Science or Computer Engineering, Electrical Engineering equivalent and four years experience. I have a Ph.D. in Computer Engineering. I teach computer engineering in college. I have many more than four years experience in the field of network communications starting with my time at Bell Labs. It's probably, what, at least ten years at the time of this so. That's why I say, "Based on my experience, I'm more than qualified as a POSITA."

Q. Okay. Do you consider yourself an expert as to the subject matter of the '088 patent?

A. Absolutely.

Q. And when did you have sufficient

qualifications and experience to qualify as an expert for the '088 patent?

A. When did I have sufficient -- you mean when did I have a Bachelor's Degree in Electrical Engineering and four years of Networking Communication including MPLS and Tunnels?

Q. Sure.

A. Probably around 2000.

Q. Okay. So as of January 24th, 2006, you would have been a POSITA at that time?

A. Absolutely.

Q. Were you an expert in ring networks as of January of 2006?

A. Yes, absolutely. At Bell Labs I worked a lot on ring networks.

Q. So can you explain at a high level what a ring network is?

A. Typically, though, they're not required to be, they're counter rotating -- let's start with they're a ring topology with counter-rotating links. That's a typical ring network.

Q. As of January 2006, were you an expert in protection paths?

A. Yes.

Q. And what is your understanding of a

protection path?

A. It depends on the context, but I was working at Bell Labs in full tolerance of the AT&T networks or the concept. What we said protection paths were was something I worked on. You have to -- protection paths can mean different things in different contexts. So in MPLS, they can mean one thing, in a SONET, they can mean another thing. So if you give me some context, I would understand what you're talking about.

Q. Well, let's give MPLS as an example. What would be a protection path in MPLS?

A. There can be many different types of protection paths in MPLS. You can have a -- a protection path is usually thought of as a disjoint path between the main path in a MPLS labeled switch path in LSP. So usually in MPLS, you try to do a disjoint path and call that a protection path, but again, it can depend on context. There's sometimes -- in the patents that we talk about here, people have made their own definitions.

Q. So if there was a primary path that had let's say a hundred units of bandwidth and we wanted to provide protection for that in case of failure, we would need a protection path that also has the

capabilities of a hundred units of bandwidth; is that correct?

A. No.

MS. MISBAH: Objection, form.

THE WITNESS: No. That's incorrect. You don't have to make a protection path with a hundred units of bandwidth. That's one of the interesting things about teaching MPLS.

Q. (By Mr. Clements) So you could have a protection path that doesn't protect for the full amount of bandwidth, correct?

A. Absolutely. Matter of fact, we typically don't do that cause it leads to extremely inefficient networks.

Q. So as of January of 2006, were you an expert in bandwidth sharing?

A. Yes.

Q. What is your understanding of bandwidth sharing?

A. It depends on the context.

Q. Can you give me an example?

A. Can I give an example of bandwidth sharing? You can share the bandwidth of the link by having two connections on a link.

Q. Have you ever designed systems that used

bandwidth sharing?

A. Yes, and POTS systems that do bandwidth sharing in college.

Q. Are there different types of bandwidth sharing that you're familiar with?

A. Sure.

Q. Can you give me an example?

A. I just gave you a type of bandwidth sharing.

Q. Are there other examples?

A. Probably, but it's not something I studied or opined on for this IPR.

Q. Have you ever designed systems in which the protection paths share bandwidth?

A. What do you mean --

MS. MISBAH: Objection, form.

THE WITNESS: Yeah. What do you mean by protection path sharing bandwidth?

Q. (By Mr. Clements) Well, we talked about protection paths are a path that is a backup path in case a primary path fails; is that correct?

A. Yes.

Q. Can those backup paths or protection paths share bandwidth?

MS. MISBAH: Objection, form.

THE WITNESS: I guess I need an example to understand your question of what you're talking about.

Q. (By Mr. Clements) Do any examples come to mind?

A. No.

Q. Would you agree that backup paths can share bandwidth?

MS. MISBAH: Objection, form.

THE WITNESS: Yeah. I don't understand what type of backup paths you're talking about and what you're talking about sharing bandwidth. Like you said and I said, there's many different types of sharing bandwidth. So if you specify the question, I can probably answer it for you.

Q. (By Mr. Clements) Have you ever designed systems that share bandwidth among active paths?

A. Yes. And by active, you mean actively sending packets? We have to be pretty clear on what we're talking about terms here because they definitely need context to understand them.

Q. So does the term active typically mean actively sending packets?

A. It can or it can be the state of a link. It can be active, it can be administratively active

or administratively not active. There's a lot of different ways of defining an active -- did you say link or connection? I forgot.

Q. Path.

A. Path. Oh, so yeah, path is even more general. So -- so I guess I was just a little confused as to your question. What do you mean by path?

Q. Path, like you said, is kind of a broad term. And I'm using it broadly.

A. Yes, to answer your question I need to understand in what specific way you're using it.

Q. So if we get more specific and talk about active links versus active connections, would there be a distinction there?

A. You're asking me --

MS. MISBAH: Objection, form.

THE WITNESS: You're asking me if there's a distinction between active link and active connection?

Q. (By Mr. Clements) Yes.

A. The answer is yes.

Q. And what would be that distinction?

A. There's a lot of different distinctions between a link and a connection. One is a link

is a -- it can be virtual, but typically it's a physical device that's transmitting packets from one output port to one input port where a connection is a concept more logical that has to do with a -- an entire path through a network from what we call a source to what we call a sync or what we call a source to a destination. So they're two entirely different ideas.

Q. Let's turn to paragraph 32 of your declaration.

A. Okay.

Q. You say that the '088 patent teaches in its embodiments improved methods and systems for establishing a connection through a communication network taking into account the ability to share allocated bandwidth between the new connection and existing connections.

When you say "new connection" there, or when the '088 patent says "new connection" there, is that referring to a protection path?

A. Is it referring to a protection path or referring to a new connection, one that you're trying to establish.

Q. So where it says "new connection" there, is that new connection a new protection path?

MS. MISBAH: Objection, form.

THE WITNESS: Is a new connection a new -- it's just a new connection. It just says new connection. It doesn't say anything else other than new connection.

Q. (By Mr. Clements) So it could be a protection path, correct?

MS. MISBAH: Objection, form.

THE WITNESS: Yeah. I -- it doesn't -- all it says it's establishing a new connection. It's not talking anything about a protection path.

Q. (By Mr. Clements) And then when it says "existing connections," is that talking about a protection path?

MS. MISBAH: Objection, form.

THE WITNESS: So the word protection path doesn't appear in the '088 patent. So I guess I'm confused on your question again.

Q. (By Mr. Clements) Well, you'd agree there's a distinction between a primary path and a protection path, correct?

A. Absolutely.

Q. So when it's talking about a new connection or an existing connection, is that

referring to a primary path or a backup path?

A. It's referring to a new connection and an existing connection.

Q. So it's not limited to either a primary path or a backup path, correct?

A. It's talking about new connections and existing connections. It's not telling us the type of new connection or existing connections.

Q. So in the next paragraph, paragraph 33, it talks about candidate routes. What is your understanding of the candidate routes in the '088 patent?

A. What paragraph are you on?

Q. Paragraph 33.

A. Gotcha. Okay. So the candidate routes are routes that are ones that could be used for the -- '088 is for establishing connections and its possible routes. It could be this establish -- this new established connection. You can see at the end there it says "which would be allocated to the new connection if it were established through this route." So the claims of the '088 patent are directed to establishing new connections.

Q. And the '088 patent also talks about a sharing definition. What is your understanding of

that sharing definition in the '088 patent?

A. So a sharing definition is a way of describing if and what type of sharing can occur between an existing connection and the one that you're trying to establish.

Q. So in paragraph 34, you recite Claim 1 as an example of one of the claims of the '088 patent, and under limitation 1.3, it mentions a total bandwidth allocated jointly. Do you see that?

A. Yes.

Q. Was it your understanding of the total bandwidth allocated jointly?

A. So the claim says, "A total bandwidth allocated jointly to the new connection and any other connections in a given segment." So it's the bandwidth that's allocated between the new connection and the other connections along a given segment.

Q. And then it says that that total bandwidth allocated jointly is equal to a maximum of the requested bandwidth and of the bandwidths of the other connections in a given segment. Do you see that?

A. Yes.

Q. So if I give an example of this, if we have a requested bandwidth for the new connection of

20 units and these other connections are 30 units and 40 units, the maximum would be 40, correct?

MS. MISBAH: Objection, form.

THE WITNESS: Sorry, could you do it again?

Q. (By Mr. Clements) Sure. So if we have a request for a new connection that is 20 units of bandwidth and the other connections have 30 units and 40 units respectively, the maximum of all of those is 40, correct?

A. Correct.

MS. MISBAH: Objection, form.

Q. (By Mr. Clements) So if the maximum is 40, would that be the total bandwidth allocated jointly to the new connection and to the other connections?

MS. MISBAH: Objection, form.

THE WITNESS: So yeah, let's break this down. You're saying you have a segment, right, that has different bandwidth allocations for different existing connections across that segment and those -- the two existing ones have a bandwidth of 20 and 40 megabits per second allocated across that segment?

Q. (By Mr. Clements) Correct.

A. So I think I may have been incorrect. So it may have been that those two existing bandwidths couldn't share, so the bandwidth allocation to the other connections would have been 60 in that case. That's why it's hard to do these hypotheticals. So it kind of depends -- the answer to it kind of depends on those existing connections, what was the bandwidth allocated to those existing connections to that set, not on an individual basis.

Q. So when the claim says "equal to a maximum of the requested bandwidth and that the bandwidths of the other connections in a given segment," you're saying that if we have the new connection is 20 and the other connections are 30 and 40, the maximum would be 60?

MS. MISBAH: Objection, form.

THE WITNESS: Yeah, just slow down one bit. So it says the bandwidth of the other connections, the difference. So you have a bandwidth of those other connections and those depend on the sharing definition of how much they can share that gives you the amount of bandwidth that you allocated to those other connections.

So it doesn't have to be just the maximum.

That would be that each other's other connections were -- were able to share bandwidth, but if they're not able to share bandwidth, then you have to sum both of them. You have to reserve a certain amount for -- and I forget what your numbers were for that, 20 and 30 I think. So you'd have to reserve 20 and 30, so 50. So it would be the maximum of 50 whenever the new connection was.

Q. (By Mr. Clements) And if they were all allowed to share bandwidth, the maximum would be 40 since that's the maximum needed by any of the three connections?

A. Correct.

MS. MISBAH: Objection, form.

Q. (By Mr. Clements) Okay. Let's move on to the next limitation here in 1.4. It recites, "For each of the two or more candidate routes calculating a cumulative additional bandwidth reservation to be allocated to the new connection in a segment along the candidate route." Do you see that?

A. Yes.

Q. What is that bandwidth reservation additional to?

A. I don't understand your question.

Q. So the claim says, "We're calculating a cumulative additional bandwidth." Do you see that?

A. Yes.

Q. What is that bandwidth in addition to based on your understanding of the '088 patent?

A. So the additional bandwidth is for the new connection.

Q. So my understanding, and correct me if I'm wrong, is that that means if we were to request 50 megabits -- or let's just say 50 units, and the other connections were 40 units, the additional bandwidth would be 10 because that's the difference between 40 and 50. Is that a correct understanding?

A. It depends on your sharing definition.

Q. Assuming that all of these were allowed to share.

A. And they all were allowed to share a hundred percent?

Q. Yes.

A. Then that would be correct. You would have to add additional 10 units of whatever you're calling bandwidth to that.

Q. So limitation 1.5 recites, "Selecting a preferred route having a minimum value of the cumulative additional bandwidth reservation out of

the two or more candidate routes." What is your understanding of that limitation?

A. That you select a preferred route based on what the minimum -- which one of those two candidate routes gave you the minimum additional bandwidth along the candidate route.

Q. So, for example, if one candidate route would require 20 units of bandwidth -- additional bandwidth and the other candidate route required no additional bandwidth reservation, we would prefer that second route?

MS. MISBAH: Objection, form.

THE WITNESS: So if you had those two candidate routes and you performed the calculations and one candidate route was smaller than the other candidate route for the new connection, you would take the minimum as your route and then go on to establish connection over that route.

Q. (By Mr. Clements) Let's turn to paragraph 58 of your declaration. Let me know when you're there.

A. Sure. Okay.

Q. You say in paragraph 58 that "This is because the primary concern of the '088 patent is the

efficient distribution and sharing of resources between active existing connections so as to minimize additional bandwidth allocation rather than failure protection that draws on reserve bandwidth when an active link fails."

So that's -- as I understand it, that's your understanding of the '088 patent, correct?

A. Sorry. Where --

Q. So it's starting the last sentence on page 24, paragraph 58.

A. Okay. Okay. I was trying to read it. Right, correct.

Q. And you say --

A. It's probably better to say reserve bandwidth pool there, but that's what I was trying to say.

Q. And what is the basis for your characterization of the '088 patent in this manner?

A. The understanding of a POSITA upon reading the '088 patent.

Q. And you say that it relates to sharing bandwidth of an active connection. How does one share bandwidth in an active connection?

A. By sharing bandwidth with an active connection.

Q. So I'm trying to understand exactly what that means. So if -- let's say we have a link with a total capacity of a hundred units and we have two connections on that link, both of them requiring 80 units.

A. Right.

Q. Could they share bandwidth?

A. Yes.

Q. But they couldn't share a hundred percent, correct? If the total link capacity is a hundred and both of the connections require 80, that would 160, which would be too much. So it would be oversubscribed?

A. Yes, and oversubscription is incredibly common and probably more common than a total reserve bandwidth in network design. So it's a very common thing to do that.

Q. Okay. And you believe that the '088 patent is talking about sharing bandwidth in that oversubscription model.

A. Can you point to me where I said that in this declaration?

Q. Just that paragraph that we just talked about here with the paragraph 58 where you said that it relates to sharing of resources between active

existing connections.

A. So your question is -- one of the ways the '088 describes it is oversubscription, if that helps.

Q. Yeah. Let's move on to the Dziong reference. That's Exhibit 1005.

A. Okay.

Q. And you reviewed the Dziong reference in detail, correct?

A. Yes.

Q. And Dziong describes link-detour paths. Are these link-detour paths protection paths?

A. They're link-detour paths, so it depends on your definition. Sometimes we call these protection paths, sometimes we call them restoration paths. I think it's -- in the example cited in Dziong in Mir's -- Dr. Mir's declaration, we're talking about pulling it out of a pool.

Q. You say in paragraph 39 of your declaration that Dziong's link-detour paths are not established connections?

A. Yes.

Q. What do you mean by that?

A. So Dziong teaches a way of calculating link-detour path costs and then basing decisions based on those link-detour path cost, so those

link-detour paths are established. They're just, as you probably -- hypothetical.

Q. But these link-detour paths are never actually established?

A. But if they would, they wouldn't be sending traffic over to the other paths. And I think it's pretty clear in the description in Dziong that they're not established. They can potentially hypothetic some of them could be established in the future and then you'd go through the establishing of these paths, but they're not established in what's taught in Dziong.

Q. So you're saying that they're not established in the sense that they're there for backup, but unless they're needed, they're never established, is that --

A. No, they're not even there for backup because you don't even know which one is going to be the backup. You're calculating what could potentially happen in a backup. I think Figure 4 Dziong makes that kind of clear.

So Dziong sets up a certain reserve bandwidth pool that you can use in case of a failure to establish another connection if you ever need to. It doesn't even know which one would be established

because you don't know which failure may occur. There may be no failures that occur.

Q. In paragraph 39 you quote some of Dziong that talks about a crank back.

A. Correct.

Q. What is the purpose of talking about the crank backs here?

A. To show the process that you need to go through in order to even establish a connection. So these -- even if you've already calculated a path and you've decided to use that path, you still don't even have an established path because there's this problem of having crank back. So we're not even talking about established paths in Dziong. We're just talking about calculating pools of the bandwidth that we can use in case of a failure.

Q. So I'm trying to understand what the purpose of calculating these link-detour paths are if they're never actually established. Can you elaborate on that?

MS. MISBAH: Objection, form.

THE WITNESS: So they're a way of, in Dziong, teaching how to select a primary path. So these primary paths have this link-detour path, the cost of those link-detour paths

calculated. So the potential link detours for each potential primary, you calculate those costs and then you select a primary based on a function of those link-detour costs.

So it's a way of selecting a primary path. It's a way of calculating some attribute about paths of -- candidate paths in order to calculate which primary path you would choose for that candidate path.

Q. (By Mr. Clements) So Dziong is talking about calculating primary paths -- or it's talking about establishing primary paths but looking at the costs of the protection paths for those primary paths?

MS. MISBAH: Objection, form.

THE WITNESS: Sorry, yeah. Sorry. Yeah, can you rephrase that again?

Q. (By Mr. Clements) So if I understand correctly, you're saying that Dziong is calculating protection paths -- or Dziong is determining protection paths based on the cost of the backup paths for those primary paths?

MS. MISBAH: Objection, form.

THE WITNESS: Yeah, so did you say backup path? If you say link-detour paths or all the

possible link failures associated with it, then you're -- they're giving some sort of metric for these candidate paths and selecting a primary from this metric that's derived from calculating cost of hypothetical link detours.

Q. (By Mr. Clements) In paragraph 41, you say that because this bandwidth is not actually allocated to any active connection, it exists in a fluid state and can be shared between connections in the event of a failure. And so when you say "this bandwidth," are you referring to a pool for protection paths?

A. It's a reserve pool that can be tapped into in the event of a connection failure.

Q. So it's a reserve pool that could be used for a protection path if needed?

A. Well, you say protection path. It's link-detour path in Dziong.

Q. Okay. Is a link-detour path different than a protection path?

A. In general, in MPLS, yes.

Q. And what would be the distinction between those?

A. So a protection path is in MPLS from the source router to the destination router is a path to

protect another LSP. A link-detour path is only -- and it depends on whether it's a bypass path or not. It's only a quick hop around the link. It's not an actual protection path. It has to stitch itself back into the original path until the head end LSR calculates another protection path to switch over to. It's what we call fast reroute in MPLS.

Q. I'd like to talk about Dziong Figures 6A and 6B.

A. Okay. Hold on.

Q. Let's go there. Let me know when you're looking at Figure 6.

A. Okay. Could I rotate it so I can see it better?

Q. Yeah.

A. Okay.

Q. All right. So in Figure 6A we have several shared risk link groups, correct?

A. Yes.

Q. And the connection between node A and node B -- or I guess we should say the link between node A and node B, that's SRLG 1, correct?

A. So there is a shared -- there is a link there between A and B that's part of shared risk link that's been given the attribute of shared risk link

group one.

Q. And that link includes various connections, correct?

A. The link can -- or in this figure it does include various connections.

Q. And my understanding based on Figure 6B is that the total link capacity is 96 units based on what we see in Figure 6B; is that correct?

A. Correct, which is typical on a SONET brain.

Q. And then we've got 12 units that are reserved for a particular path, correct?

A. We have 12 unit. So this is a cross-connect table and the 12 units -- where are you seeing the 12 units?

Q. So I see the 12 units along that link on SRLG 1. You see the number 12 there on that solid line?

A. Oh, okay. I've got to go find out what those are in the spec. What was the 12? Cause I'm looking at cross-connect table and I don't see the 12 units there.

Q. So my understanding of the cross-connect table is that far left line there's the solid line on top that looks to be about 12 units.

A. Oh, 12 OC3s. Okay. That's the -- so you mean the one that represents 96, right?

Q. So we see the -- like on the far right of Figure 6B, we see there's a solid black line that seems to indicate the entire bandwidth --

[Cross-talking.]

THE WITNESS: Right.

Q. -- is 96. That solid line is only -- is much smaller on the far left where we're talking about the AB cross-connect, and it looks to me to be about 12.

A. Okay.

Q. And I'm also basing it off of the number 12 put on the solid line in Figure 6A.

A. Okay. Now, I understand what you're talking to -- talking about. So that's 12 units of bandwidth that's been allocated on this cross-connect table.

Q. Yeah. 12 units to some path or some connection, correct?

A. Correct.

Q. And would that be an active connection?

A. Yes, it could be an active connection. It's assigned to the cross-connect table.

Q. And Figure 6B illustrates how SRLG 1 also

serves as a protection path for other connections, correct?

A. It serves as a segment of an entire connection path for failures that could occur in other links. So it's not a protection path as it is just a link from A to B.

Q. And then it's got protection bandwidth there as we see from Figure 6B. There's that bracket that says protection bandwidth?

A. Correct.

Q. SRLG 3, SRLG 4 and SRLG 5.

A. So what was your question?

Q. And so my understanding is is that SRLG 1, or more particularly the link between A and B, is providing protection bandwidth to connections on those other shared risk link groups; is that correct?

A. So it has, as we've talked before, a pool that can be used in the case of a failure to then establish a connection across there in the case of a different failure.

Q. And that pool would at least be 48 units, correct?

A. Yes. There's a reserve pool you see over here, reserve bandwidth is 48 units.

Q. And that's because that's the maximum of

those three SRLGs over here, 3, 4 and 5, correct?

A. It could be or it could be a reserve pool, could be larger than that. The reserve pool is just what's left over. It's just what's assigned to a pool for failures.

Q. And so these other SRLGs have protection bandwidth requirements of 48, 15 and 36. Do you see that?

A. Yes.

Q. And so Dziong is reserving in this pool as you describe it at least 48 because that's the maximum of those three; is that correct?

A. Right, at least 48 is available for these nonexistent connections here.

Q. And so if SRLG were to fail, then the 48 units of bandwidth used by the connection on SRLG 3, could then be assigned to SRLG 1 or more particularly the link between A and B, correct?

A. Your question made no sense. Sorry.

Q. So if SRLG were to fail or more specifically the link between A and C -- do you see that?

A. Right.

Q. If that were to fail, then those 48 units of bandwidth would be moved to SRLG 1 or the link

between A and B?

A. So you could then establish a connection between A and B.

Q. From that reserve bandwidth, correct?

A. Right. So these are not established connections, and you can see that because they overlap each other. And you can't overlap in SONET in a cross-connect. So I know that these links are not established where it says protection bandwidth.

Q. And similarly, if the link associated with SRLG 5 were to fail, those 36 units of bandwidth could be applied to that reserve pool?

A. You could establish on the link from A to B those 36 -- I think these are coming out as OC -- DS1s, so these 36 DS1s could be established, and a new connection could be established to route around the failure of shared risk link group, shared risk link group 5.

Q. And these 48 units of bandwidth that are reserved in this pool as you describe it, they cannot be used by other connections on SRLG 1, correct?

A. I mean, they could be. There's nothing to say you don't do that, but the intention is to have a pool that in the worst case allows you to establish a connection.

Q. So it's reserved in the sense it's taken off the table for use by other connections; is that right?

A. Right. It's not any connection of themselves, and I think Dr. Mir was a little uncertain of that. So it's just an attribute for this link, shared risk link group 1, and the attribute is that the link group 1 and we're associating with that a pool of bandwidth for failures that's got 48 units.

Q. Turning back to your declaration paragraph 43.

A. 43. Okay. Hold on a second. Okay.

Q. You say in that paragraph that Sathyanath draws an expressed distinction between reserving bandwidth and allocating bandwidth in a protection path. Would you say that Sathyanath uses the term allocate and reserve differently than the '088 patent does?

A. I think they're using them in a similar way.

Q. And then in paragraph 38 of your declaration, you cite to Sathyanath's statement that bandwidth is not allocated until after the detection of a failure and in such implementations because the

protection bandwidth is only reserved and not allocated, sharing can be supported. Do you see that?

A. Yes.

Q. So does that mean that under Sathyanath's definition of reserved and allocated, bandwidth that is allocated cannot be shared?

A. Sathyanath's way of sharing bandwidth is to reserve it, not allocate it.

Q. And Sathyanath says that because the protection bandwidth is only reserved and not allocated, that's why sharing can be supported. So does that mean that if it were to be allocated, sharing could not be supported?

A. No. I'm talking about Sathyanath's idea of bandwidth sharing, which is different than the idea of bandwidth sharing in the '088 patent cause in the '088 patent we allocate and share, but Sathyanath is talking about something different about having reserving and then sharing it.

Q. Right. But if Sathyanath were to allocate it, does that mean it could not be shared?

MS. MISBAH: Objection.

THE WITNESS: I'm not quite sure

I -- Sathyanath seems to be teaching about

reserving it and not allocating it. And they're pretty clear about that. So that's what they're teaching.

Q. (By Mr. Clements) And then Sathyanath says that because the protection bandwidth is only reserved and not allocated, sharing can be supported. Do you see that?

A. Yes.

Q. So I'm asking if the bandwidth were to be allocated rather than reserved, does that mean that sharing could not be supported?

MS. MISBAH: Objection, form.

THE WITNESS: The answer is no because the '088 teaches a way of allocating and sharing.

Q. (By Mr. Clements) So when Sathyanath says that the reason that sharing can be supported is because it's only reserved and not allocated, wouldn't that mean that allocating it means that it can't support sharing?

MS. MISBAH: Objection, form.

THE WITNESS: In Sathyanath's view of the world, it seems be saying that, yes. In Sathyanath's view of sharing, you can't allocate. They're kind of -- that's what they're saying in their view of the world. So

their definition of how you share bandwidth works along the principles of reserving it, not allocating it. That's not to say that's the only way to do it. That's just Sathyanath's way of doing it.

Q. (By Mr. Clements) In your declaration, you talk about various protection schemes, for example, in paragraphs 46 and 47?

A. Correct.

Q. You talk about a one-plus-one protection scheme and a one one protection scheme; is that correct?

A. Correct.

Q. Can you explain what you mean by one-plus-one or a one one protection scheme?

A. So it's actually -- in a one-to-one protection scheme the same traffic is carried in two different directions and the receiving nodes selects the best. And a one-to-one protection scheme refers to transmitting along the working path, and when the sender detects a failure, it sends it along the other path, the protection path.

Q. Is the '088 patent directed to either of those schemes?

A. I don't see why it would be precluded.

Q. Is the Dziong reference directed to either one of those schemes?

A. No.

Q. Why not?

A. Dziong's incorporating Sathyanath and Sathyanath is talking about that these are the types of schemes they're using.

Q. It's not a one-to-one protection scheme?

A. Not in the way that Sathyanath is -- that we're talking about here, that Sathyanath's describing where two copies sent, one on a primary and one on a protection path or detecting failures and having already established protection paths so we can switch over fast. So no.

Q. So you're saying that Dziong or Sathyanath are neither a one-plus-one or a one-to-one protection scheme, correct?

A. No. What I'm saying is just what I said, which is describing the one-to-one protection scheme as I did or one sent over a primary path and one sent over a protection path and you selected that the receiver know neither Dziong or Sathyanath, Sathyanath especially explicitly teaches a way that that's what they're doing.

And then the same for the one-to-one

protection scheme. And in neither of those cases, as I say in 47, that we have an existing connection, either one-to-one or one-plus-one or one-for-one protection because both references are using reserve bandwidth and not allocated.

Q. So because Dziong uses reserve bandwidth and not allocated bandwidth, it's neither a one-to-one or one-plus-one scheme as I understand it. So how would you define Dziong's scheme? Is there a term for that type of scheme?

A. There's a lot of teaching in Dziong. So what scheme are you talking about?

Q. The one that you mentioned just now that has a pool of reserved bandwidth.

MS. MISBAH: Objection, form.

THE WITNESS: So is there a name of -- is there a term of art for this type of thing that's discussed in Dziong?

Q. (By Mr. Clements) Yeah.

A. I mean, it's a form of redundancy, but I don't know of a particular term for this type of thing that's taught in Sathyanath or Dziong. They're kind of a reserve pool allocation scheme probably because it's not used in MPLS networks or SONET networks, in my understanding, but I don't know of

anything other than it's a redundancy scheme.

MS. MISBAH: Counsel, we've gone for a bit over an hour. Whenever you launch into the next section, before that, can we just take a five-minute break?

MR. CLEMENTS: Yeah. Actually, I'm just looking at my notes here real quick. I may just be done, maybe quicker than expected.

I don't think I have any further questions for you, Dr. Olivier. Thank you for your time.

THE WITNESS: Thank you.

MS. MISBAH: I have no further questions either.

(Discussion off the record.)

(After being asked, off the record, if counsel would like an expedited copy of the transcript, counsel replied with the following:)

MS. MISBAH: Normal turn around is fine. Thank you.

(Deposition concluded at 12:06 p.m.)

E R R A T A S H E E T

Pursuant to Rule 30(e) of the Federal Rules of Civil Procedure and/or Official Code of Georgia Annotated 9-11-30(e), any changes in form or substance which you desire to make to your deposition testimony shall be entered upon the deposition with a statement of the reasons given for making them.

To assist you in making any such corrections, please use the form below. If supplemental or additional pages are necessary, please furnish same and attach them to this errata sheet.

* * *

I, the undersigned, JAMES OLIVIER, Ph.D. do hereby certify that I have read the foregoing deposition, and that to the best of my knowledge, said deposition is true and accurate (with the exception of the following corrections listed below).

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HENRY COUNTY) JAMES OLIVIER, Ph.D.

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Georgia CCR-B-2289

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STATE OF GEORGIA:
COUNTY OF HENRY:

I, F. Renee Finkley, a Certified Court Reporter in and for the State of Georgia, do hereby Certify:

That prior to being examined, the witness named in the foregoing deposition was by me duly sworn to testify to the truth, the whole truth, and nothing but the truth.

That said deposition was taken before me at the time and place set forth and was taken down by me in shorthand and thereafter reduced to computerized transcription under my direction and supervision, and I hereby certify the foregoing deposition is a full, true and correct transcript of my shorthand notes so taken.

I further certify that I am not of kin or counsel to the parties in the case, and I am not in the regular employ of counsel for any of the said parties, nor am I in any way financially interested in the result of said case.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 3rd day of October, 2025.

_____ _____
F. Renee Finkley, RPR, RMR, CRR, CLR
Georgia CCR-B-2289

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