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UNITED STATES. PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC. AND JUNIPER NETWORKS, INC.,
Petitioner
v.

ORCKIT CORPORATION,
Patent Owner.

IPR2023-00554
Patent 10,652,111 B2

Record of Oral Hearing
Held: July 9, 2024

Before KRISTEN L. DROESCH, NATHAN A. ENGELS, and
BRENT M. DOUGAL, Administrative Patent Judges.

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The above-entitled matter came on for hearing Tuesday, July 9, 2024, commencing at 11:07 a.m. EDT, via videoconference.

P-R-O-C-E-E-D-I-N-G-S

11:07 a.m.

JUDGE DOUGAL: This is a hearing for IPR 2023-00554. So, let's start off with appearances, make sure we have everybody here. So who do we have here for Petitioner?

MR. BLAKE: Good morning, Your Honor. This is Jeffrey Blake, from the firm of Merchant & Gould for Petitioner, Cisco Systems, Inc.

JUDGE DOUGAL: Okay, thank you, and who do we have for Patent Owner?

MR. YANG: Good morning, Your Honors. This is Mitch Yang of Carmichael IP on behalf of Patent Owner Orckit. With me is George Stamatopoulos of Kobre & Kim, who will be presenting.

JUDGE DOUGAL: Okay, thank you. So as I said, I am Judge Dougal and I have with me Judges Droesch and Engels and we would apologize for the slight delay in getting things started. So let me go through a few administrative things, to remind, as I'm sure you are all very aware. First of all, this is a remote hearing or a video hearing, please make sure to mute yourself when you're not speaking, unmute when you are, make sure to refer to what slide you're on each time you change your slides. For your own reference, we have the slides here on our computers as well as the entire record before us, and so -- but if you do want us to refer to an exhibit or paper in the file, please give us a minute to be able to pull that up to the right place.

We have -- the parties have requested and we've proved 60 minutes of interview time, or argument time for both sides, starting with Petitioner.

Petitioner, would you like to reserve any time for rebuttal?

MR. BLAKE: Yes Judge Dougal, may I reserve 15 minutes for rebuttal?

JUDGE DOUGAL: And Patent Owner, would you like to reserve any time for rebuttal?

MR. STAMPATOPOULOS: Yes Your Honor, 20 minutes.

JUDGE DOUGAL: Okay. As far as objections go, we ask that counsel not interrupt during the presentation of the other party, hold your objections until your time to present. That is it, are there any questions before we start?

MR. BLAKE: No, Your Honor.

MR. STAMPATOPOULOS: None here, Your Honor, thank you.

JUDGE DOUGAL: Okay. Well, then, with that, I have on my clock 11:11, and we'll go for 45 minutes. Or 60, if you'd like.

Mr. Blake, go ahead.

MR. BLAKE: Thank you, Judge Dougal. I'd like to start by addressing Ground 1 of the petition, which Your Honors will remember, in the Institution Decision in this case, at least with respect to Claim 1, it was found that the Ground 1 argument, which relates to the combination of the Lin and Swenson references, presented an argument that satisfied the compelling merits test under the Fintiv factors that have been provided by the PTAB. And while that is not definitive, as the Patent Owner has presented additional arguments like that, I will focus my argument today on Ground 1. And the arguments made there will rest on the papers with respect to Ground 2, unless some of the judges have questions for me on Ground 2, in which case I am more than happy to address those questions, whatever you may have about Ground 2, if you do have any.

But, turning to Ground 1, and focusing on -- I think the issues have crystallized significantly through the briefing from the respective parties, and so

I'll try to discuss, with reference to Patent Owner's sur-reply, the major issues that seem to be existing between the parties.

And the first of those relates to the Lin reference. And Patent Owner's argument, at the sur-reply, pages two through seven, that the Lin reference does not disclose or render obvious the possibility that the claimed security service could be implemented as part of the claimed controller, and that the controller, under the constructions -- there are two competing constructions here; Patent Owner's is broader than that proposed by the Petitioner -- but the arguments don't turn on the construction that's argued. But, in any event, it would be at least that the controller has to be capable of controlling a security function.

And the Patent Owner argues that the controller and the security service disclosed in Lin are simply separate components, but this is not really a point that's challenged. It's been acknowledged from the point of the petition by the Petitioner that if you look, for instance, at Figure 6 of Lin, which is shown on our slide 20, the claimed controller that we had identified is separate from the security service 630. The point of it is not whether they are actually shown to be separate or the same, the point is what a POSA would have understood from Lin.

Lin teaches that the security service 630 that performs the DPI can be connected to the switch via a physical link, a virtual link, or a software tunnel, in the same exact ways that the claimed controller can be connected to the switch, and I would reference to Lin column five lines 51 to 58 that's shown on our slide 36. And given that Lin can have the same connections with the security service versus the controller, what a POSA would understand is that there are a limited number of design options for where you might put this security service. It could be a separate component, but it could just as easily have been implemented as part of the

controller that is disclosed in Lin and connected to the SDN switch in the same way, using the same hardware or software as the controller.

That's been our argument and position from the beginning with respect to Lin. And I understand the Patent Owner would point to the concept that Lin does disclose that network security vendors -- this is column three, lines 11 through 12, which is shown on our slide 26 -- that network security vendors may provide the security service that is recited in Lin, but that's just one option that the idea that you might have a separate network security vendor providing a separate component of software in this implementation, that's just one way it could be done. That could just as easily have been implemented as part of the controller. If I were to look to the reasons that the Patent Owner -- yes?

JUDGE DOUGAL: I have a question. So, on this argument, when I read through the petition, I viewed your position, Petitioner's position to be, essentially that, because there's some similarities here, it's capable, you know, one of skill in the art would be capable of putting these two functions together, and that then looking at Swenson and the combination was more about the reasons to combine and modify, but then Patent Owner makes some arguments that this was a reason to combine, or that you're asserting this was a reason to combine the fact that they were capable of being put together.

So can you clarify that? Are you saying that because they are capable of being put in the same computing functions, you know, combine, that that's the reason to combine you're relying on, or is this more of a, it's capable, but let's look at that whole combination, and then here's our reason to combine based on Swenson or other teachings? So could you just clarify that, please?

MR. BLAKE: Sure, I'll do my best to clarify it, and if I don't, please follow up with me. The argument is twofold. First, that if you look at Lin, while it explicitly discloses a separate controller and security service, given Lin's teachings about the implementation and how it can be connected to each of the network nodes, it would have been obvious to a POSA that you could have combined them strictly on Lin itself and presented them as one component, and that that would have been obvious that you could do it.

Separately, if you say that there's no teaching in Lin, if you look to the combination of Lin and Swenson, the pertinent point in Swenson is that there is a controller that incorporates within it the ability to perform deep flow inspection, which we say discloses deep packet inspection, and that Swenson discloses that you could have that capability as part of a controller, and a POSA reading that would understand that similarly in Lin you could have that as part of the claimed controller, the deep packet inspection or deep flow inspection could be part of a controller, that's what Swenson teaches, and that there would be a motivation to combine Lin and Swenson given that they're similarly talking about monitoring network packet flows and how you're handling flows of information and redirecting certain types of packets for inspection, that there would have been a motivation for that.

And we talk in there about the fact that it would have been an efficient way to operate to have it at the controller. And the Patent Owner says, well, wait a minute, you can't talk just at general levels about efficiencies; you have to talk more specifically about efficiencies. But we did do that, we did point that out. For example, we identified two specific efficiencies, one is that using a security component in a central location such as at the controller for packets allows all the

packets from different nodes to be examined or analyzed or inspected by the same security component, if I put the security component in a central location.

Separately, when you have a security component like this, obviously it is going to be frequently updated, even if it's by a third party that provides this security software, even if it's implemented, you take third party software and implement it into the controller, it's going to have to be updated, and it's more efficient for that security component to be in one central location, like the controller, to allow for that update.

So, in this way, the motivations to combine are more than just saying at a blanket level it's more efficient, there are specific efficiencies we have identified that would differentiate this situation from a case like the Forest Labs case that was cited in the Patent Owner's response, page 33. In that case, it was a drug case, and the stated motivation to combine was basically look, you always need more drugs, so there would be a motivation to combine references, you know, that all you need is a little more drug options, and that doesn't provide an effective motivation to combine, here we've identified specific reasons why there would be efficiencies to combine Swenson's concept of having the inspection security capability at the central controller and implement that also in Lin.

Does that address your questions, Judge Dougal?

JUDGE DOUGAL: Yes, thanks.

MR. BLAKE: Turning back to the controller point, I want to address some of the specific responses in the sur-reply made by Patent Owner, and one of those, three and four of the sur-reply, where the Patent Owner makes the argument that in Lin the controller is an OpenFlow controller, and it argues that OpenFlow does not support a mechanism to allow DPI of packets through the various network layers

of the OSI model, and the Patent Owner cites the '111 patent, it's '111 patent column one, lines 50 to 67, to argue that if the controller is an OpenFlow controller it can't perform DPI.

Well, first, this is a new argument on the sur-reply, and so it should not be considered by the Board, but second, even if it is considered, the point they're making has flaws. It fails because the '111 patent says that traditional open protocol doesn't support DPI, but that doesn't mean necessarily as a logical matter that the controller can't be modified to implement a security function that performs DPI. Just because the controller starts by using an OpenFlow protocol does not mean that it is limited in a way such that you could not implement a security function that performs DPI.

As a matter of fact, that's what the '111 patent does. The '111 patent implements a security function in a controller to perform DPI even though the controller itself is OpenFlow, they discuss their controller as being OpenFlow, for instance, in the '111 patent column four, lines 61 to column five line one. Or claim 25 of the '111 patent, it's controller is an OpenFlow controller, but in that situation the Patent Owner still says well, that type of an OpenFlow controller can still perform a security function. So this argument that's raised for the first time on the sur-reply would require more of Lin than the Patent Owner even said in the '111 patent itself.

The sur-reply, going to another point, raises another bunch of arguments about --

JUDGE ENGELS: This is Judge Engels, if I may ask a question here. So my understanding, Patent Owner is arguing that OpenFlow is -- and I think like you said, would be changed in the '111 patent, but the argument is that Lin does

not disclose changing an OpenFlow specification, so help me understand why a person reading Lin would understand that change to the OpenFlow controller.

MR. BLAKE: Yes Judge Engels. First I would say, while Lin discloses that its controller can be OpenFlow, I do not understand Lin to say that its controller is restricted to being an OpenFlow controller, it is a type of controller that is discussed in Lin. Secondly, as I would understand it, the OpenFlow protocol is a protocol that is used for communication, establish communication flow lines back and forth for instance, between the controller and the network nodes that are discussed in Lin, the SDN switch that it is. That doesn't mean that a controller that uses OpenFlow protocol couldn't have separate software implemented on it that implements a security service, I mean there is nothing that limits that controller from being modified in a way that, even though it uses OpenFlow protocol it could also separately have a security function added to it on top of it through software.

I think that's my point with the '111 patent. The '111 patent uses an OpenFlow protocol controller as an example, but it implements the security service as part of its controller, even though it's an OpenFlow controller, and it makes no reference to the fact that you would have some difficulty doing this.

JUDGE ENGELS: I still don't quite understand how you're suggesting a person of ordinary skill looking at Lin's OpenFlow controller would've had reason to make these changes. You're saying it's possible, they could have done it, but perhaps this goes to the motivation, but I'm not seeing you explain why it would be done or how Lin suggests that it's done.

MR. BLAKE: I think that a POSA looking at Lin would not understand that you have to necessarily change the OpenFlow protocol usage of the communication in the controller of Lin. First of all, as I stated again, I don't

necessarily agree that Lin's controller is limited to being an OpenFlow protocol controller, it's an example that's certainly given in Lin of the type of controller, but in any event, I don't understand it to mean that you have to change the OpenFlow protocol in order to separately implement the security function as part of the controller. The fact that open flow itself does not perform DPI, for example, does not mean that the controller couldn't have a separate software added to it that would perform security inspection.

JUDGE ENGELS: Okay, thank you.

MR. BLAKE: Turning back to this controller issue and a couple of other points made in the sur-reply that I'd like to address. A few reasons that Patent Owner tries to string cite, I would say, reasons why you wouldn't add security functions to the controller that are not supported, one, Patent Owner argues that it would be prohibitively expensive to do so, but the idea that implementing DPI or some other security service that the controller would be prohibitively expensive is unsupported by Patent Owner's argument. There's no concept of it being prohibitively expensive in the '111 patent or in Swenson, there's no concept that it was prohibitively expensive to implement its inspection capabilities in its controller, that's simply not supported.

The concept that the Patent Owner points to column two, lines 1 through 10 as arguing that there are drawbacks that were known in the art to routing packets to a security component, but those drawbacks in column two of the '111 patent that I referenced refer to when you are routing all traffic to a central controller for some type of an inspection, not when you're routing only certain packets.

Obviously, if you're routing all traffic there can be problems with traffic delays or overflowing the controller's capabilities, but that's a different situation

than Lin, because Lin discusses the concept that you're only routing some packets, those packets that meet specific criteria, the packet applicable criteria that we have identified, which are the one or more conditions, for example identifying a packet as an HTTP packet, in the example that's referred to in Table 3 of Lin. You're only routing in that situation some packets, not all packets to the controller, so you're not going to have these type of drawbacks that were referenced that were of concern in the art that the Patent Owner raises.

If there are no more questions on that, I'd like to turn quickly, as our time is getting on, to talking about Swenson. So Swenson is a separate part of the combination, as we have discussed. The pertinent part of Swenson is that its flow analyzer 312 of its network controller performs deep flow inspection to determine if the flow is worth bandwidth monitoring, if there are security concerns, these discussions are found in paragraph 59 and 60 of Swenson.

And the immediate response that the Patent Owner refers to, and the Patent Owner is correct in saying that the real issue is that Swenson talks about deep flow inspection, and the '111 patent refers to deep packet inspection, though DPI is not actually recited in Claim 1, but to the extent you're talking about differences, I would make a couple of points as far as saying yes, that is the argument between the parties, what if any are there that would be differences between deep flow inspection, deep packet inspection that are relevant to the patent. I would submit that there are not relevant differences between deep packet inspection and deep flow inspection for the purposes of analyzing what's obvious in the claims in the '111 patent. For example, the '111 patent itself seems to conflate the terms.

If you look, for example, at Figures 3 and 4 of the '111 patent, when it's talking about the DPI flow detection unit 311, so there the detective unit, what

does the inspection as part of the controller, it refers to it as a DPI flow detection unit 311. So there it's referring to DPI and flow detection as related concepts.

Similarly, the Patent Owner cites an extrinsic article in support of its argument at page eight of the sur-reply, and that article, while it is extrinsic evidence, it actually supports the Petitioner's argument, as was explained in paragraph 31 of Dr. Bhatterjee's reply declaration, because the article explains that there's a comparison that is made between DFI and DPI detection to determine "if the fingerprints of DFI protection is the same with that of DPI." That's page two of that article, Exhibit 2025. Excuse me, yeah, it's Exhibit 2025. The point being that even third party articles are not drawing the distinctions between DFI and DPI that the Patent Owner draws.

But even assuming that those distinctions exist, I would say that if you take a closer look at Swenson, what Swenson discloses is actually that is analysis is a DPI analysis, it's looking at individual packets. At paragraph 31 of Swenson it explains that a flow is a series of packets having a specific signature, and then paragraph 65 is the key paragraph of Swenson, where it discusses that Swenson's analysis includes the analysis of the response payload of an HTTP packet, and the parties have a disagreement about what that means when referring to the analysis of a response payload. Dr. Bhatterjee has explained that a POSA would have understood this discussion of the analysis of a response payload of an HTTP packet to be DPI, by a DPI controller.

And one example, and I don't understand this example to have been rebutted by Mr. Gomez, Patent Owner's expert, one example is that an HTTP get request, or an HTTP response can be accomplished in a single packet. I don't understand the Patent Owner to have ever challenged the fact that it can be encompassed in a

single packet, and in that situation, if the response is in a single packet, then Swenson's disclosure of the analysis of the response payload of an HTTP packet, in paragraph 65, would be DPI, by DPI capable controller. So in that situation, there is a specific disclosure in Swenson of the performance of DPI.

JUDGE DOUGAL: Well, Counsel, one question I had on this, as I was going through the arguments, is it seemed like your declarant at times said it's possible, it could be, and that Patent Owner essentially came back or came from the start and said, hey, if you look at the context, the disclosure of Swenson, Swenson is talking about flows, is talking about large groups, and there's nothing in Swenson that is specific to a particular packet or a single packet. And essentially everything that your declarant says is, it's possible. But then I didn't see a response to, like, well, in the context of the disclosure as a whole, talking about these flows in general, you know, where are you getting -- you know, even if it's possible, is there any evidence that it was a single one, is there anything in Swenson that distinguishes between large flows and small flows? I'm a little still up in the air, I guess, as to how exactly we're getting to packets, and so let me ask that first.

MR. BLAKE: Absolutely, Your Honor. The number one example is in paragraph 65 of Swenson. This is that example that Dr. Bhatterjee has cited as a disclosure from the very beginning in his declarations of talking about, you're looking at a portion of the response payload of the HTTP message. And his point has always been simply when a person of ordinary skill in the art reads that, you're looking at that says that Swenson's inspection is a portion of the response payload, what does a person of ordinary skill in the art understand that to mean? What would have been understood at the relevant time? And that is, because a POSA

knows that HTTP messages can be encompassed in a single packet, and that when you say you're looking at a portion of the response payload, that would have been understood by a POSA to indicate that you're performing deep packet inspection as part of the flow analysis, that you're looking at a single packet, and the payload of that single packet, the payload of that HTTP message. Does that answer your question?

JUDGE DOUGAL: Would you mind going to his declaration, I believe that's Exhibit 1015, and kind of explaining and walking through, I think maybe you're talking about paragraph 31, maybe, of his declaration.

MR. BLAKE: I'll check it, I believe it was 35, let me pull his declaration up.

JUDGE DOUGAL: Okay.

MR. BLAKE: So give me just one moment, I don't have it open so I just need to open it. Okay, let me share it. Just one moment, it's trying to connect to the share. Has it connected such that you can see?

JUDGE DOUGAL: I don't see it.

MR. BLAKE: Okay, do you have it in front of you?

JUDGE DOUGAL: I do.

MR. BLAKE: Okay, maybe I'll just try to talk through it, as it seems the share is stalling on my end for some reason. So if we, on page 14 of Exhibit 1015 is where the section starts talking about Swenson's capable of performing DPI. And if I go down starting in paragraph 30, which is on page 16, about halfway through the paragraph it reads, as previously explained, a flow is a series of packets having a specific signature. Paragraph 65 of Swenson discloses analysis of the response payload of a packet. A POSA would have understood the analysis of

a response payload to be DPI, and then as we go to paragraph 31 -- I'm trying to find the specific discussion where we refers to -- I believe it was paragraph 35.

Yes, in paragraph 35 he talks about, Mr. Gomez appears to understand that Swenson discloses the DPI controller, as he argues even assuming that Swenson's controller was analyzing the header and payload of a packet, a POSA would understand that this analysis is not at the packet level but at the flow level. He disagrees, and he provides the example, and this was an example of how he would have understood the portion of the payload response. An HTTP get request message and an HTTP response, each can be encompassed in a single packet, and that situation, the inspection of the packet containing the request or the response, including a portion of the response, would be DPI.

So that's where he's discussing the fact that he would understand, and the previous paragraphs are discussing that when you look at it, and you talk about deep flow inspection, you would understand that it's possible that that would be deep packet inspection, and he provides a specific example that that response payload, which a POSA would understand could be encompassed in a single packet, that the interpretation of paragraph 65 of Swenson where it talks about looking at a portion of the response payload, that if it's in a single packet, you're looking at a packet by a packet analysis.

JUDGE DOUGAL: So Counsel, this kind of shows some of the struggle I'm having. So like I mentioned, Patent Owner's declarant talks about in the context of Swenson you have this flow analysis, and I don't see anything -- like for example, in this paragraph 35, anywhere where your declarant says in the context of Swenson someone would understand this as being a single packet. He does say it's possible that it can be encompassed in a single packet, like there's a possibility,

but I'm not sure for certain whether he's saying that in the context of Swenson they would understand it to be a single packet or multiple packets in a flow.

And then you talked about paragraph 30, and that kind of shows another place where I'm struggling, is that he says that one of skill in the art would understand it to be DPI by a DPI capable controller, and I see the citations, right, to Swenson, but I'm still not understanding the next step. Like, well, you say it is, but why? Why is it DPI, why? Is it just because it doesn't make any difference whether you're saying deep flow or deep packet, you know, I'm just missing a step between, you know, here's all the evidence of the different things it teaches, your declarant says it is, I'm just still not -- and again, this may be a semantics issue, it doesn't make a difference, but I'm not 100% sure right now whether it's just semantics or whether there's not enough here to say this is deep packet versus an inspection of the entire flow.

MR. BLAKE: I hear your question, Judge Dougal. I think a hook, or the thing tying it together may be at the end of paragraph 30, in Dr. Bhatterjee's reply declaration where he says, moreover, even if the analysis involves reviewing the response payload of multiple packets, a POSA still would have considered this to be DPI, because Swenson is explicitly disclosing the analysis of the payload of individual packets in a flow.

And I think it's the word payload that is the key, because what Swenson is saying is you have to go look at the payload of a packet, and that means you're going within a flow and going to the payload portion of an individual packet within that flow. Maybe you're looking at multiple payloads within the flow of multiple packets, but it's still deep packet inspection because you're getting to the point of looking at the payloads. So that will be looking at the individual packets.

He goes on later in paragraph 35 to say, an example of where you're doing it at, where it's definitively one packet is if your HTTP get request or response is in a single packet, which is frequently the case, then you definitely are looking at just one packet. But he's tying it together at the end of paragraph 30 by saying look, even if it's multiple packets, the point here is that you're looking at the payload, and the payload means you have to go down to the packet level and perform deep packet inspection, even if it's inspection of multiple packets within the flow.

Does that address your question?

JUDGE DOUGAL: Yeah. Look, I'll have to do some more studying up on the word payload throughout, but that gives me some more depth to review.

MR. BLAKE: Okay, and if you have any further questions I'm happy to try to follow up on it. I'll address a few more things about Swenson, and then I want to turn quickly to the motivation to combine arguments, I believe I have about seven or eight minutes in my time remaining.

I will say that one of the arguments made by Patent Owner in the sur-reply is that there are some type of different technical challenges to applying DPI versus a DFI. The Patent Owner argues, I believe at page eight of the sur-reply that DPI presents certain "unique challenges," because it requires significant processing power and may struggle with high bandwidth with their encrypted network. I would say that these types of unique challenges, while they're been identified now in this IPR proceeding were not disclosed in the claims of the '111 patent or its discussion of DPI, there was never a discussion of these unique challenges of implementing DPI, which even Patent Owner and its expert recognizes and acknowledges that DPI is well known in the art and is used in any number of contexts.

Lin, for example, obviously discloses DPI, but there's no discussion of any unique challenges in using DPI in Lin, as there was nothing like that in the '111 patent. The PO also speculates that DPI tools may have limited visibility into overall traffic patterns. Again, this isn't something that is in the '111 patent, isn't something that you find in Lin or any of the discussions, so these are arguments that seem not to be supported by either Patent Owner's patent or the relevant art. Further, the Patent Owner in the sur-reply separately talks about the fact that Swenson is focused on the collection of statistical information and bandwidth monitoring, as opposed to security inspection.

I would note that that analysis is misplaced, it doesn't matter whether Swenson's inspection is for security purposes versus bandwidth monitoring purposes, the inspection is not necessarily delineated like that, at least in the independent claims.

Moreover, as Dr. Bhatterjee explained, when you look at Swenson, paragraph 39 talks about that its controller does have conventional components, including security inspection, and also, even more importantly, the bandwidth monitoring that is discussed in Swenson has a security application, that's why Swenson discloses that it says components like security functions, because in bandwidth monitoring you can use that for the detection of, for instance, DoS attacks that occupy significant bandwidth in a network. And so this bandwidth monitoring does have security applications, it does make the pertinent disclosure from Swenson, which is the disclosure ultimately that the inspection can be implemented at the controller, relevant when a person of ordinary skill in the art is considering the Lin reference.

I'll turn quickly to the motivation to combine argument, and some of the points raised on pages 11 to 16 of the sur-reply, our petition sets out more than five pages of reasons why there would have been a motivation to combine these two references, Lin and Swenson. As I referenced earlier, the Patent Owner says that the Petitioner needs to do more than just point to efficiencies that would have come from combining these two references, I think we have more specific efficiencies than you may have seen in other situations, again for example the fact that putting the security function at the central controller allows you to send all the analyzed packets to one central location, in order to have them analyzed, and to the extent you need to update the security software, you can go to one central location.

The Patent Owner argues that there would have been no motivation to combine, because DPI is more taxing on a controller than for instance the DFI disclosed in the controller in Swenson, but neither Swenson nor the '111 patent states that performing either DFI or DPI, one or the other, is more taxing than the other. That DPI is somehow more taxing than DFI, that's a rationale that has come up in the context of this proceeding, but is not something that is discussed in the art as to whether or not you could implement the well-known function of DPI.

Patent Owner also says that, while it acknowledges that Swenson talks about conventional components, included security systems in the controller, it says if you look at Figure 3 of Swenson, Swenson explains that those components are not shown in the controller. Well, paragraph 39 of Swenson explains simply that those components are not shown so as not to obscure the details of the system architecture, it was effectively just saying look, we're not going to show those security components, but that doesn't mean that paragraph 35 doesn't disclose that those are present.

And finally, as I'm coming to the end of my time, I'd like to take just one moment to talk briefly about the separate argument, turning back to Lin, where the Patent Owner argues in the sur-reply and in its Patent Owner reply that Lin does not disclose the element of sending the packet to a second entity or another second entity based on a single packet applicable criterion. The Patent Owner points to the fact, for example, looking at the example that involves Table 3 of Lin, this would be columns seven line 64 to column eight line 18 in Table 3, Patent Owner says well that talks about a bypass flow rule and a redirect flow rule.

Table 3 can be seen on slide 45 of our demonstratives, and that you're using two separate criterion, one to look at whether the packets are HTTP packets and then re-direct them if you have to, and then a separate criterion of what to do if the packets are not HTTP packets. Respectfully, this is too fine a distinction. It's a single criterion, the criterion disclosed in this example in Table 3 is whether the HTTP packet -- whether the packet is an HTTP packet. That's the criterion. It can be indicated by the TCP source port, the TCP destination port, and if the single criterion indicates that it is an HTTP packet, the packet's redirected to the security service. If the single criterion says it's not an HTTP packet, the packet's forwarded to the original destination.

This is basically an if/then/else statement that you see implemented in Table 3. If it is based on this criterion, you take this step, this action. If it is not based on this single criterion, than you take a separate action, and all the different possibilities are covered by this if/then/else statement. The Patent Owner would argue that this does not cover all the possibilities, but that's respectfully not true, because this Table 3 indicates if the TCP source port or the TCP destination port is port 80 then you would redirect the packets to the security service. In any other

circumstance, and that's what the stars are indicated by in Table 3, any other circumstance that it's not an HTTP packet, the packet is forwarded to the destination, all the examples are covered. With that, I'm going a little over my time, so I will cede and reserve what time I have left.

JUDGE DOUGAL: Thank you, Counsel. Let me confirm, but I think you have about 13 minutes left. Okay, Patent Owner, we'll turn it over to you.

MR. STAMPATOPOULOS: Thank you, Your Honor. So what I'd like to do is perhaps cover some of the issues that Petitioner's counsel went over in his presentation. Rather than give you a full sort of presentation of every single issue that was covered in our papers, because I think our papers lay out our arguments pretty clearly. And from your questions, it sounded like the Board is focused on exactly the issues that Patent Owner has identified in its papers.

So point number one is about Lin, and as Petitioner's counsel stated in his presentation, Petitioner essentially concedes that Lin discloses performing DPI in a separate security service. The question is whether the separate security service can be implemented as part of the same controller as Lin, or whether there is a reason why a person of ordinary skill in the art would take that separate security service and implement it as part of the same controller. That's one potential adaptation that Petitioner is proposing, the other one has to do with Swenson, so I'll cover both separately.

So with respect to that first argument, whether a person of ordinary skill in the art would take the separate security service in Lin and implement it as part of the same controller as Lin. Respectfully, Lin teaches a separate device, it actually teaches outsourcing the function of DPI to a separate device, it teaches an OpenFlow controller. Petitioner's counsel stated that Lin gives an OpenFlow

controller as just one example. Respectfully, that's the only example that's taught in Lin. Lin teaches an OpenFlow controller and a separate security service.

And if you look at the '111 patent, the '111 patent -- and I'll point you to the pertinent disclosure. If you look at slide 10 of Patent Owner's deck, you'll see side by side Lin's example of an OpenFlow controller, and on the right hand side you will see an excerpt highlighted from the '111 patent that talks about the limitations of the OpenFlow protocol. The OpenFlow protocol is the same protocol that's utilized by Lin's controller, and you will see in the disclosure of the '111 patent there is not only a definitive statement that the OpenFlow does not support any mechanism to allow DPI of packets through the networking layers, the various networking layers, but it goes on and it talks about why. There's no support for DPI. The reason there's no support is because you can't go above layers two to four in the OSI model, you can't go up to layer seven. Layer seven is an additional layer of information of the type of information that is conveyed by a packet that a DP capable device, as testified by Mr. Gomez in his declaration, needs to be capable of looking at in order to perform DPI. There's no ability to extract non-generic or arbitrary information, and that's pertinent.

For example, in the event of utilization of DPI against security threats. That doesn't mean that DPI's only function is for security threats, it doesn't mean that you can't use other techniques against security threats. What it does mean is that this particular capability is particularly useful to security threat detection. And Lin's controller simply doesn't possess the capabilities to perform DPI as disclosed in the '111 patent, because it's an OpenFlow controller and the OpenFlow protocol does not support that capability. So that's point number one. Lin's controller does not -- please.

JUDGE DOUGAL: Really quickly, Petitioner stated that this was an argument first made in your sur-reply, and I see your slides cite your sur-reply. Is that correct, did you raise this before or is this an issue that we shouldn't address or we should allow Petitioner to more formally respond to?

MR. STAMPATOPOULOS: You should address this issue for a couple reasons. First of all, this is a responsive argument to arguments made in the reply. That's point number one, point number two, Mr. Gomez -- and I can probably find the relevant part in the Patent Owner response, but if you look at Mr. Gomez's declaration, you will see that he talks about the capabilities of DPI capable devices, and particularly which OSI model layers they can probe. In his declaration, I can find the right spot for you if you give me one moment.

And obviously, Your Honor, the declaration, these parts of the declaration are pertinent to the argument that DPI is different from deep flow inspection, and they were cited in the Patent Owner response. If you go to paragraph 58 of Mr. Gomez's declaration, you will see that DPI -- he says, DPI is a thorough inspection process --

JUDGE DOUGAL: Just to clarify, is this Exhibit 2025?

MR. STAMPATOPOULOS: Correct, paragraph 58. And I'm not going to read the whole paragraph, it's a long one, but it says DPI devices are capable of looking at layer two and beyond layer three of the OSI model, and can even analyze up to layer seven. DPI thus offers control of network traffic that goes beyond classification of packets based on pattern -- and it goes on.

The bottom line is, this mirrors what's in the patent. It's not an argument that was raised for the first time. This is in our papers, in our opening papers.

And, on top of that, it's a responsive argument to arguments made in the reply as to whether Lin's controller discloses DPI or not.

So, respectfully, I think that this is something that the Board should consider. But I don't know if you have further questions on this topic. Or if you need me to give you a specific citation to the Patent Owner response, I'm happy to do that, too, but this is a portion that's been cited in the Patent Owner's response.

In any event -- so, number one, this is a responsive argument in response to your question. Number two, if the Board chooses to consider this argument, which respectfully, it should, Lin only discloses an OpenFlow controller. I don't think there's any way to dispute that the OpenFlow protocol based on what's in the patent only goes up to -- the OpenFlow protocol does not support DPI. I don't think that Petitioner's actually disputing that, frankly. I haven't heard anything from Petitioner disputing that.

What I have heard from Petitioner is that it would be possible to tie or to connect or implement the security service as part of the controller. Respectfully, that is a new argument, as we put in our papers. That argument was not really raised in the response, that a DPI capable controller is simply a controller that contains a security service and a controller in the same box, I don't think that that's a construction that was formally proposed in the petition, therefore I think it would be untimely and improper.

But even assuming that the Board were to consider such an argument, I don't think there's any motivation or there's any reason why a person of ordinary skill in the art would just simply take the security service and based on the disclosures in Lin and put it in the same controller. In fact, Lin expressly discloses outsourcing the security service, that's point number one. Second, it's directed to a

networking pipe between an external network switch and the security service, it doesn't contemplate using the security service as part of the controller as a potential option. It expressly teaches a system in which it is assumed that it is not possible to integrate the security service and DPI as part of the controller.

And the '111 patent gives a number of reasons, and this is certainly not a new argument, as to why that would not be desirable. It would not be desirable because as Petitioner's counsel said in his presentation, that very likely would overwhelm the controller. It would overwhelm the controller, that is on column two, and you can find the relevant column two, lines one through 10, and you can find that on slide 12 of Patent Owner's deck, where you will see on the bottom excerpt from the '111 patent that it says, the straightforward approach of routing all traffic from network nodes to the central controller introduces some significant drawbacks, such as increased end to end traffic delays between the client and the server, overflowing the controller capability to perform other networking functions, and the single point of failure for rerouted traffic.

That's in line, if you look at the top excerpt, with Lin's disclosure, which by the way is directed to a system in which you have a separate security service, so that's in line, that disclosure from the '111 patent is in line with Lin's solution, which is take DPI, take security services, and outsource them. It doesn't even talk about the implementation of that component, Your Honor, it talks about vendors. It talks about a completely separate component to which the Lin system is connected through this pipe. That's what Lin is about, it's not about DPI, it's about connecting a separate component to a software defined network, it's providing a different type of solution than the '111 patent.

Which brings me to my next point, Petitioner says that there's no changes proposed to the OpenFlow controller in the '111 patent. Respectfully, that is a new argument. We haven't read that argument in Petitioner's papers before, that is that the '111 patent doesn't teach something about how to change the OpenFlow controller, nor do I think that that's required, because the '111 patent teaches a way of filtering data into the controller such that the controller is not overwhelmed. Are there other distinctions between the OpenFlow controller and the '111 patent controller?

Perhaps, that's -- frankly Your Honor, that's an issue I haven't analyzed, it's the first I've heard about this issue and I haven't looked into it and I'm not an expert, I'm not prepared to give you an opinion on the fly as to whether there are differences or not, but the bottom line is that the '111 patent, unlike Lin, is directed to this particular problem. That is, how do you get the controller in the mix of controlling or performing DPI? And that's what the '111 patent is directed at, whereas Lin is directed at creating a pipe that allows these separate devices, the controller and the security service, to cooperate efficiently, and an entirely different architecture.

Now Petitioner's counsel said that there is nothing supporting the argument that Patent Owner has raised that it would be prohibitively expensive to put DPI in the controller, for example in Swenson or Lin. We agree, there's nothing suggesting that it would be prohibitively expensive to put the DPI in the controller in Swenson, because Swenson doesn't talk about DPI at all, and there's nothing about that in Lin -- well, there's something about that in Lin, but there's no explicit statement that it would be prohibitively expensive to put DPI in the controller in Lin, because Lin is directed to an entirely different solution.

Now, with respect to disclosures about whether it would be expensive to put DPI in the controller, perform DPI or control DPI in the controller, there is a disclosure to that effect in the '111 patent. And I just pointed Your Honors to it, it's column two, one through 10. It doesn't use the words prohibitively expensive, I don't think it's a requirement that Petitioner's expert parrot everything that's in the patent, but I think the gist of it is that it would overwhelm or overflow controller capability to perform other networking functions and it would create a single point of failure if you were to place the DPI or the locus, whether control locus or performance locus of DPI in the SDN controller. So I think there's ample support for that.

Unless there are any questions about Lin, I think it's very clear that Lin doesn't disclose the claim controller, I think it's very clear that Lin is directed to an altogether different solution, which does not include performing DPI in the controller.

I'd like to turn to Swenson, and I would like to start from Petitioner's second argument with respect to Swenson, remember there are two arguments here. One is that there is a specific embodiment in Swenson where you have inspection of a particular packet, and the second argument that Petitioner makes, although an inverse order, is that Swenson teaches DPI because it discloses deep flow inspection. Both of these arguments are wrong, but I'd like to start from the second argument. The second argument is that an HTTP request or response can be embodied by a single packet. First of all, that's a new argument, that the first time we've heard that argument was actually in the reply, that you could have a single packet embodiment. That you could, not that you do, you could have a single packet embodiment of an HTTP request or response.

Respectfully, if you look at paragraph 69, I know that Your Honor struggled a little bit earlier with gleaning Petitioner's argument from Dr. Bhatterjee's reply declaration. If you look at paragraph 69 of Mr. Gomez's declaration, he's pretty unequivocal. He says, in the context of an HTTP get request and response as disclosed in Swenson, the message does not constitute a single packet but a flow of packet. And he gives a reason, it's a little bit later in the same paragraph, HTTP does not pertain to individual packets, whereas packet transmission is governed by the TCP protocol. That's why an HTTP get request and response are not single packet messages, they're flows. So that's point number one, they're flows, not individual packets.

Even if they were packets, however, even if they were packets, that alone does not suffice, though it is necessary for the HTTP get request and response to be a single packet for Petitioner's argument to be true. That's a necessary condition, it's not sufficient. You would need to have some deeper level of analysis of that HTTP get request and response in order to have DPI. You can't just look at the payload of an individual packet and say oh, that's DPI, you'd need to go -- and remember we talked earlier about paragraph 58 and 59 of Mr. Gomez's declaration, actually paragraph 58. You'd need to go beyond layer two and three, you'd need to go potentially up to layer seven. There's no disclosure of that in Swenson.

So let's recap what Swenson says. It talks about an HTTP get response and request, it doesn't say anywhere that these can be embodied in a single packet, it doesn't say anywhere at what level these are inspected, it doesn't really say anything. All you have is Petitioner's expert saying this might be a single packet embodiment, and if it is, then perhaps it could signal to a person of ordinary skill in

the art that it's deep packet inspection. Respectfully, you have definitive testimony from Mr. Gomez here that it isn't. And I think that's the testimony that the Board should credit, respectfully.

Now, this leads me to the next argument, which I think conclusively shows that Swenson is not directed to deep packet inspection. If you look at the pertinent disclosure, and if you bear with me for one moment, I will find it in Swenson, which Petitioner relies for its argument about HTTP get requests and responses. You will see, and that's laid out in the sur-reply, you will see that the HTTP get request response inspection is only a first step for flow monitoring. In other words, it's a very limited precursor to beginning deep flow inspection. It doesn't make sense to say that I'm going to perform deep packet inspection in order to perform a more coarsely focused method such as deep flow inspection. And Swenson respectfully is directed to deep flow inspection, not deep packet inspection.

The question therefore is, for the Board to determine, and if the Board finds for Patent Owner, then the Board should reject Petitioner's arguments about obviousness, is whether deep flow inspection is the same as deep packet inspection. Respectfully, the two are not the same. And if you go to Petitioner's slide 98, that shows the disclosure in Swenson about the HTTP response and request, and you look at the highlighted phrase right below the block, 140 performs a deep flow inspection.

JUDGE DOUGAL: Sorry, Counsel, what slide?

MR. STAMPATOPOULOS: It's slide 98 in the Petitioner's slides.

JUDGE DOUGAL: I only have 93.

MR. STAMPATOPOULOS: It's possible that -- well, let me take you then to paragraph 59 of Swenson, I may be using the wrong slide deck from Petitioner's

slides. So if you go to paragraph 59 of Swenson, which is Exhibit 1007, and let me know when you're there.

JUDGE DOUGAL: And also just for your reference, it looks like maybe this is slide 92 in our version of Petitioner's slides.

MR. STAMPATOPOULOS: Well, I think that will be my last reference to Petitioner's slides, but in any event, thank you. So if you look at this paragraph in Swenson, paragraph 59, you'll see that it says in relevant part, after receiving the request and the portion of response at the ICAP server interface, the flow analyzer of the network controller performs a deep flow inspection.

As Patent Owner stated in the sur-reply, Swenson discloses inspecting an HTTP request response as a limited precursor step for performing deep flow inspection. It's not deep packet inspection. Even if this were a single packet, for which there's no disclosure by the way, even if Petitioner were right about that, whatever happens with respect to this HTTP get response request, which by the way is a flow, not an individual packet, it's done as a limited precursor step for deep flow inspection, which then leads us to the real issue between Petitioner and Patent Owner. That real issue is whether deep flow inspection encompasses deep packet inspection. Respectfully, it does not. It does not. And you have a lot of testimony from Mr. Gomez as to why it does not. There are swathes of testimony as to the differences between these two methods.

Normally, I would not even say you need to look at the testimony because the fact that there are two different terms of art used should suffice, that should be enough. One is deep flow inspection, there are several references to deep flow inspection, the other one is deep packet inspection. Semantics matter, Your Honor, semantics matter in these documents, in patents. They matter because they convey

terminology to the user, to the person of ordinary skill in the art. In here, the '111 patent and Lin use deep packet inspection, Swenson uses a different term of art, deep flow inspection. So that's point number one, different terms of art.

If you go to slide 16 of Patent Owner's demonstratives you'll see additional portions of Mr. Gomez's testimony as to how these two techniques differ, and he first discusses the technical details of deep packet inspection. He gives examples of the uses of deep packet inspection, but critically he talks about the specific functions that DPI performs in connection with analyzing the packet relating to the granularity to which deep packet inspection probes the different OSI layers. Now that's consistent with what was discussed in the '111 patent that we were talking about earlier, and whether it was a new argument. He states that DPI capable devices are capable of looking at layer two and beyond layer three and can even go up to layer seven, that's part of what a DPI capable device does, that's part of what the '111 patent talks about. Because of these capabilities, DPI offers granular control of network traffic that renders it suitable for various forms of enterprise security beyond just incidental use in network security.

Slide 17, there are excerpts of Mr. Gomez's testimony where he talks about the limitations of deep packet inspection that come from its granularity. DPI requires, because it is granular, it requires significant processing power and may struggle with high-bandwidth networks or encrypted traffic. DPI tools, because they are granular, may have limited visibility into overall or big picture traffic patterns, and in such scenarios, a person of ordinary skill in the art might want to use, either as a substitute or as a complement less granular, less taxing techniques. And one of these techniques is deep flow inspection.

Mr. Gomez provided detailed testimony about DFI, deep flow inspection, excerpts of which are shown paragraph six. This technique, deep flow inspection, that's the technique in Shieh, as well all know, focuses on higher level information pertaining to network flows rather than individual packets. This is information about the network state, it's more high level information, it's information that's not conveyed by individual packets or is not possible to glean by just inspecting deeply individual packets.

And the summary of all these differences is given for the Board's reference on slide 19. I'm not going to go over these differences, basically talks about how the different techniques have different challenges, different capabilities, and the use of these different terms of art would convey a different meaning to a person of ordinary skill in the art. To suggest otherwise is not only an oversimplification, it's not only wrong, it's also without basis. There's no basis other than Petitioner's say so. Because a flow is a series of packets, therefore a deep flow inspection is also the deep inspection of a packet. Respectfully, that doesn't make sense to me, and I don't think it should make sense to the Board either.

Now, Petitioner has argued that Mr. Gomez's testimony is unsupported. You have ample -- I see Your Honor might have a question? But I might be wrong. I think you're on mute, Your Honor.

JUDGE DOUGAL: I just wanted to make a point for the record that I think you're off by one on your slides as well.

MR. STAMPATOPOULOS: Is that right?

JUDGE DOUGAL: So you just referred to slide 19 and I believe it was slide 20, so just to clarify it for the record.

MR. STAMPATOPOULOS: Okay, so slide 19 in my deck, which if it's the incorrect version I apologize, that's entirely on me, Your Honor, but on slide 19, and what you seem to have as slide 20 is where it starts "Mr. Gomez also testified that."

JUDGE DOUGAL: That's correct.

MR. STAMPATOPOULOS: All right, so that's slide 20, I'll just version up my version in my head as I present to you.

JUDGE DOUGAL: No worries.

MR. STAMPATOPOULOS: So slide 19, slide 20, contains Mr. Gomez's testimony, and then Petitioner has argued that Mr. Gomez's testimony is unsupported. If you go slide 24, you'll see a summary of the support, which is also an excerpt from our sur-reply of the support for Mr. Gomez's testimony.

Your Honors, the support for Mr. Gomez's testimony comes first of all from the different terms of art used in the two techniques, it comes from Swenson's disclosure of DFI functionalities that are not performed with DPI and vice versa. The point here is not that you wouldn't combine Swenson and Lin because they support different functionalities, necessarily, that's not the point we're making.

The point we're making is that the functionalities disclosed in these two references, Swenson and Lin, provide context in which to understand the meaning of DFI and its differences with DPI if one were looking at the two references side by side. Swenson's principle purpose is not to perform security functions, it adds conventional components and it deliberately obscures the details of those conventional security components because they're not relevant to its architecture, they're adjuncts, they're not really parts of its disclosure. And Swenson's use of DFI really has very little if anything to do with security. It has different purposes,

and Mr. Gomez testified to those purposes, and those purposes inform the context in which a person of ordinary skill in the art would see DFI and DPI.

And importantly, as shown in slide 24, erstwhile slide 23 in my version, Mr. Gomez's testimony is also supported by extrinsic evidence. There's not a lot of it, because as Mr. Gomez testified, DFI is not a very well-known technique, but if you go to slide 21, you'll see an article that Mr. Gomez considered in connection with forming his opinions, you'll see that it says DPI and DFI, a malicious behavior detection method combining deep packet inspection and deep flow inspection, they're two different things, they're being combined in this article, and it says in the abstract, the fine grained DPI is suitable for plain text traffic, while BFI is a complementary for encrypted or emerging traffic.

And then if you go to slide 23, you'll see that it says a fine grained packet level inspection, e.g. DPI is conducted, the DPI is effective for unencrypted traffic and known protocols. And it says DPI is not suitable for the encrypted traffic and unknown protocols accordingly. In this work, it is coupled with a coarse grain BFI engine. They're different methods. These are consistent with Mr. Gomez's opinions. Mr. Gomez testified about having considered this article in his deposition. I don't see how this article -- which by the way, makes it very clear that these are different methods, could support the view that DPI is actually encompassed by BFI. I don't see how.

So we've talked about Petitioner's argument about Lin, we've talked about Petitioner's argument about the HTTP response and request, we've talked about, or I've talked about the difference between deep packet inspection and deep flow inspection, there were certain other arguments concerning a motivation to combine. One thing I want to make very clear here is the argument that we've

made in our sur-reply, as well as I believe in the Patent Owner response, that if the Board finds that Swenson does not disclose deep packet inspection, and I apologize that I'm blurry, I'll try to fix that.

If the Board finds that Swenson does not disclose deep packet inspection, and the Board also finds that Lin does not disclose deep packet inspection at the controller or render obvious deep packet inspection at the controller, then the Board also needs to find that Ground 1 fails. Even if a person of ordinary skill in the art would be motivated to combine these two references, Swenson and Lin, if they don't disclose a DPI capable controller or otherwise render obvious a DPI capable controller, which they don't, because Swenson really adds nothing to the combination if you think about it, it only does DFI, it doesn't do DPI, then the entire Ground 1 fails. That's why I'm leaving motivation to combine for less, because the two most important arguments in connection with Ground 1 are whether Swenson discloses DPI, which is doesn't, and whether Lin renders obvious DPI at the controller, which again, it doesn't.

Speaking about the motivation to combine, essentially the crux of Petitioner's argument is that a person of ordinary skill in the art would have combined Lin and Swenson because they share generic similarities, and because efficiency is increased. With respect to generic similarities, Your Honors, Patent Owner concedes that there are similar connections, there are similar buses and similar cable and similar other connections between the different components in Lin's architecture in Swenson's architecture. That does not provide a reason to combine two references, however, more is needed than that. You need a reason for which a person of ordinary skill in the art, beyond just generic similarities, would

decide that this makes sense fundamentally. That's what it's about, this makes sense, there's a reason why I want to combine these two references.

Petitioner has pointed to efficiency by placing certain capabilities such as DPI at the controller. What Petitioner has failed to do, however, Petitioner has failed to show a nexus between this combination and the reported efficiencies. And the '111 patent directly belies Petitioner's arguments that it would be more efficient to place the DPI in the controller, because it says that it was well known -- and again, I will point Your Honors to slide 13, column two, one through ten, where it talks about the straightforward approach of routing all traffic from network nodes to the central controller introduces some significant drawbacks and so forth. So as of the time, as of the priority date, a person of ordinary skill in the art would have known that it's not efficient to put everything at the controller as Petitioner proposes, and there's no disclosure anywhere to the opposite effect.

So there's really no nexus here between thee efficiencies that Petitioner asserts and the actual combination. In fact, the '111 patent talks about how it was well known that you should now perform DPI at the controller, and there are other disclosures in Lin as well as in Swenson that talk about how there were bandwidth issues associated with packet inspection. So for example, if you go to slide 27, and this is also covered in the sur-reply, you'll see a portion of Swenson that talks about the desire not to monitor every single packet, because it created issues, and it was more desirable to monitor flows of interest.

And if you'll bear with me for one moment. And if you go to Lin, Exhibit 1005, it talks about how reinjecting packets that pass inspection consumes bandwidth. A person of ordinary skill in the art would know that deep packet inspection and all the functions that go with deep packet inspection actually

impose or actually taxing on the network itself, and even more taxing on the controller, and therefore centralizing all of these functions within the controller presented real challenges that a person of ordinary skill in the art would have considered. Petitioner has not addressed these challenges at all, Petitioner hasn't analyzed these challenges. All the Petitioner has done is the Petitioner has asserted that there are certain efficiencies from centralizing a function without really explaining why. More is required here in order to provide a reason to combine.

But even if the Board were to find that there were reason to combine these two references, again, it wouldn't really matter because Swenson doesn't really disclose deep packet inspection, and as I stated earlier, Lin does not disclose deep packet inspection at the controller.

JUDGE DOUGAL: Counsel, you've got about two minutes left, if you want your 20 minutes rebuttal time. I don't know if you want to keep on going on this, but if you would like, I would like to hear a response to Petitioner's argument about the single criteria versus two different criteria, I believe that's like features 1.5 and 1.6 of Claim 1.

MR. STAMPATOPOULOS: Yes, Your Honor. I would like, and I don't think I'm going to need 20 minutes in response. So I'll just address that argument. So if you'll bear with me for one moment as I reorient myself. So if you go to slide 34, or sorry, it should be 34 in your version, in Patent Owner's deck, you'll see -- and let me know if you're seeing something different. You'll see Table 3 of Lin annotated. So Petitioner is asserting that the flow rules captured in these tables actually contain a single packet applicable criterion. Respectfully, what's shown in these flow roles is that there are two conditions, there's one condition in the top two rows, and there's another condition in the bottom two rows. A packet

applicable criterion is a condition, that's what it is, and here there's two conditions, not one.

The argument that these two conditions operate in tandem, first of all I think it was first asserted in the reply, but second, all that that argument does is it shows that there's two conditions operating together. Now, Petitioner hasn't really explained why these are a single criterion. I understand that there's been some reluctance to use the word criteria all throughout the petition, and instead Petitioner has argued criterion and these conditions are criterion. These are two criteria, these are two separate criteria that are shown here in Lin. And there's no evidence that a person of ordinary skill in the art would understand these two separate criteria to be a single criterion. And importantly, Lin does not teach what happens if either of these two conditions is not satisfied. Petitioner earlier stated that these cables capture all possible scenarios as to what might happen to a packet, and there's a reason for that.

The reason is because you don't just have a single criterion in Lin that reflects all possible scenarios, by sending to a second entity, we're sending to some other entity. You need two conditions, and these tables contain both of those necessary conditions. The fact that these conditions are both contained in Lin doesn't make them a single condition. It's another semantics issue. Similar to deep flow and deep packet inspection where Petitioner is trying to oversimplify the issues and saying that we're reading too much into certain things or not. The express disclosure of Lin is about two conditions, and there's no explanation as to why these should be regarded as a single condition, only an assertion that they are a single condition. And that's our response, Your Honor, and with that, I don't know if the Board has any questions, but I'll reserve time.

JUDGE DOUGAL: Okay, seeing no questions, I think you have about 18 minutes left. So Petitioner, if I go back I think you had 13 minutes left for your rebuttal, and I'll turn the time over to you.

MR. BLAKE: Thank you, Your Honor. I'll start where Patent Owner left off which is the discussion of the single criterion that's discussed for example in Table 3. Respectfully, it is a semantics argument, but it's Patent Owner who's trying to use the semantics here. All the situations are covered by Table 3. If in Table 3 the TCP source port or destination port is 80, so if it's been indicated it's an HTTP packet then you redirect. If it's not, which covers everything else in the conditions, then you don't.

It's a very simple if/then/else statement based on a single criterion, whether the packet is an HTTP packet. And this is not a new argument, in our petition, and the analysis of Elements 1.5 and 1.6 of Claim 1, we cited Table 3 and made this exact point. The single criterion which is one or more condition was only discussed in the reply because in the Patent Owner response Patent Owner raised this argument that it's really two conditions and not one, and we were entirely correct to respond to that.

Backing up to the motivation analysis. In the motivation analysis, what you find, and Patent Owner cites frequently to the discussion of Mr. Gomez as to whether or not there's a motivation, and respectfully, Mr. Gomez did raise a litany of arguments as to why there would not be a motivation, but very few of them cite any substantive evidentiary support. It's essentially throwing things at a wall to see what would stick as far as arguing that it would be prohibitively expensive, which I don't think relates to how much traffic it's routed to the controller as opposed to so much, how much would the cost have been as it was initially

presented, but it would be prohibitively expense or there would have been technical challenges or that it would have been taxing on the controller.

There's not support cited for these statements, they're just things that Mr. Gomez is listing, but if you look at them, they don't withstand scrutiny. The only particular portion, which my co-counsel specifically recited multiple times is column two lines one through 10 of the '111 patent which discussed the purported drawbacks of implementing security at a controller. That's the only particular evidentiary support that's cited with these motivation arguments, and if you look at that, what is it talking about? It talks about routing all traffic to the controller. That is a drawback when you try to route all traffic to the controller, because it could slow the controller down or cause the controller to overflow, but that is not what is taught in Lin and that is not what is taught in Swenson.

Lin and Swenson in their various ways, their respective ways, both talk about routing only certain packets that meet a criterion to the controller, so in that way implementing the controller, the security at the controller would be no more taxing than having the security at a separate component, because you're accounting for these problems by not routing all traffic, and that's not dependent on where you implement the controller. The pertinent point, again, is that for motivation purposes, Swenson teaches that the security function could be implemented at the controller, and the purported drawbacks would not be relevant in that situation because less than all packets.

Now stepping back to the DPI versus DFI argument that we have spent a significant amount of time on. A couple of points I'd like to address, one, the Patent Owner -- let me pick up the records, my copy of Swenson. The Patent Owner argues that Mr. Gomez in paragraph 69 of his declaration states that an

HTTP get or an HTTP response cannot be implemented as part of an individual packet. Mr. Gomez by the way in that paragraph cites no support for this argument, but moreover he contradicts himself in that argument, because he says "a POSA would know that despite common parlance references to HTTP packets," so he acknowledges that the common parlance is to talk about HTTP as packets, and he says then HTTP does not pertain to individual packets, whereas packet transmission is governed by the TCP protocol.

Respectfully, as Dr. Bhatterjee said, that's wrong. HTTP does relate to specific packets, and that's why in the common parlance it's talked about as HTTP packets. And when you look back at Swenson, in paragraph 65, again, what is Swenson talking about sending to the controller? A portion of the response payload and an HTTP get message, in paragraph 65. And even, it's talking about the response payload, which we said could be in one HTTP packet, there's even more there, because it's talking about a portion of the response payload, which could be implemented in one packet. That's what a POSA would understand that to mean.

Similarly, there's a similar reference in paragraph 59 to the steering device forwarding the HTTP request and a portion of the HTTP response to the network controller. Respectfully, when a POSA reads that language, the POSA would understand that what you're talking about is, you could be looking at individual payloads or a portion of the payload of individual packets. And again, I talk to Dr. Bhatterjee's declaration, at the end of that paragraph 30, which says look, even if you're looking at multiple payloads, the portion of the response payload across multiple packets, if you're looking at multiple packets and the payload of multiple packets, a POSA would still consider that to be DPI because Swenson is explicitly

disclosing analysis of the payloads of the various packets in the flow. And the point is not so much that -- I mean it is a good example that there could be one packet, but if there are multiple packets you're still looking at the payloads of the packets, that is deep packet inspection, because deep packet inspection is same gone on with looking at the payload of a packet.

Separately, I wanted to address a point that the Patent Owner raises about what's required for inspection, and this is on page 10 of the sur-reply where it says that DPI has a number of characteristics and capabilities beyond inspecting a single payload. Now I understand this to be a new argument, I know we've been talking a lot about DPI DFI from the beginning of the briefing in this proceeding, I don't understand them to have previously argued that DPI requires more than just inspection.

And now they say there are a number of characteristics and capabilities beyond inspection that would be required to constitute DPI. They're not particular about what these additional characteristics and capabilities purportedly would be, but I would say that, again, going back to paragraph 65 of Swenson, what does it say? It says that you're inspecting the message, or the portion of the payload, that's your inspection, and then you're determining what action to take in the future, as in, are you going to continue to monitor the flow? Do you need to try to optimize the video? Those are the actions to be taking. So to the extent, what they're saying is that you have to do an inspection to determine what actions to talk, I would say that paragraph 65 of Swenson does do that. So I think this is a new argument, but I'm happy to respond to it substantively.

A few additional points. The Patent owner raises -- as I back up to the discussion of Lin, and this controller, whether the controller is separate or the

controller is the same, I'll back up to finish with a few points there. One, Patent Owner seems to be making an argument now that we're somehow coming up with a new construction by saying that the security function and the controller should be in the same box. Respectfully, that's not a new construction, I think that's the argument that the parties have been discussing since the beginning of this, we've always said that it is our opinion that it would be obvious from Lin that you could implement a security function as part of the controller, that's not a new construction, that's just been the point of disagreement between the parties.

And then finally I'll finish with this point about Lin's controller and it being an OpenFlow controller, and the disagreement there between the parties. And I'll say a few things, one, respectfully, I mean this is a new argument. Again, the parties have been discussing does the controller have the capability to perform security functions since the beginning of this matter, since the time that the petition was filed. For it to come up now at this point, the argument that well, an OpenFlow controller cannot do that, I don't think is the time for us to bring up this new argument. But addressing it substantively, what I would say is two things.

One, Lin's controller is not limited to using OpenFlow. When OpenFlow first comes up in Lin, it's in column one in the context of discussing Figure 1, and Figure 1 talks about a prior art controller. So Lin is saying OpenFlow has been used in prior art controllers, and then when Lin goes on separately to talk about its controller, primarily it comes up in column three, lines 45 to 57, in discussion of Figure 6 where it talks about an OpenFlow controller being one embodiment, and the language starting around column three line 44 reads "accordingly, in the SDN controller 610 comprises an OpenFlow controller and the SDN switch comprises an OpenFlow switch."

It goes on down around column three line 55 to say that accordingly the SDN controller may comprise a virtual OpenFlow controller and the SDN switch may comprise an OpenFlow switch. These are languages of exemplary embodiments, and as the Board is no doubt aware, it is improper to try to limit the disclosure to these exemplary embodiments when the disclosure is broader than that, it could include other types of controllers that are disclosed in Lin.

And finally, I'll just say with respect to this, I think the biggest thing is that the Patentee can't have it both ways. In the '111 patent, the Patentee gives an example of an OpenFlow controller and then takes the position that you could add a security function to that OpenFlow controller, and that's what disclosed as their purported invention. And then we get over to Lin, they say Lin has an OpenFlow controller but you can't put security in an OpenFlow controller, because OpenFlow won't handle that at higher OSI levels.

We can't have it both ways. It can't be that in your patent you can have an OpenFlow controller as your example and say that you could add security to that OpenFlow controller, but in the prior art it's an OpenFlow controller and you can't add security to that OpenFlow controller. It's got to be one or both, the '111 patent did not restrict it in that way, Mr. Gomez I know wants to do that now, but it's not supported to that both ways. With that, I'll ask if the Board has any questions.

JUDGE DOUGAL: Okay, not seeing any. We appreciate your argument and we will conclude with Patent Owner.

MR. STAMPATOPOULOS: Thank you, Your Honor. So starting from this last point about an OpenFlow controller, I don't believe that the claims in the '111 patent are limited to an OpenFlow controller, the argument that the '111 patent is limited to an OpenFlow controller is one that I am hearing now for the first time.

If Petitioner had wished to construe the term controller as an OpenFlow controller, Petitioner had every opportunity to do so but did not. I think it's improper to raise this argument now for the first time in oral argument, that the '111 patent is limited to an OpenFlow controller such that we would need to have it both ways.

Related argument -- and I'll just pause there, because I want to make sure that this point is clear. If you have any questions about what our position is on this, I'm happy to take them up. If you don't, Your Honors don't, then I'd like to go to this question of whether this is a new argument. And respectfully, Your Honors, it's not a new argument, but even if it were a new argument, it doesn't really matter. The position of Patent Owner has been, from day one, that Lin doesn't disclose a DPI capable controller or a controller that's able to perform DPI. The question that came up -- it's configured to perform, sorry, DPI. So a claim controller under either construction, our position has been this is not disclosed by Lin.

The question that's come up now is whether we are for the first time in the sur-reply arguing that Lin is limited to an OpenFlow controller and therefore that's an additional reason for which Lin does not disclose a claimed controller. Respectfully, this is not the first time we're making this argument, we've made the argument that Lin discloses a DPI incapable controller, or not the claim controller, and then we've also made the argument that Lin discloses an OpenFlow controller, if you go to page 13 of the Patent Owner response specifically when the utilize an SEM controller 610 which may be an OpenFlow controller, we don't say it's limited to, we say it's an OpenFlow controller, and we also say on page nine of the Patent Owner response that the inventors of the '111 patent recognize that the

OpenFlow protocol used by prior art did not support DPI of packets, and the limited ability of the OpenFlow critical -- and it goes on.

So it's essentially what's described in the '111 patent, and we say that Lin discloses an OpenFlow controller, the '111 patent talks about how an OpenFlow controller could not perform DPI, Lin doesn't disclose a DPI capable controller. We haven't made the argument that Lin is limited to an OpenFlow controller in the Patent Owner response, that's a responsive argument made in the sur-reply, but if you take a look at Lin, you'll see that there's no other embodiment disclosed in Lin, there's no non-OpenFlow controller in Lin. And though it may be improper to limit the disclosure of Lin to things that Lin has not expressly limited its disclosure to, it's also improper to invent out of thin air embodiments that Lin doesn't disclose. And what Lin doesn't disclose here, very clearly, is a controller that is capable of performing DPI.

So whether you treat this as a new argument or not, the evidence is there, we've addressed the evidence in the Patent Owner response, and we've made substantively the same argument, the exact same argument, in the sur-reply that we made in the Patent Owner response. And if the Board chooses to treat this argument now as a new argument about Lin being limited to an OpenFlow controller, respectfully that's the only argument that the Board should treat as new. We don't think it's new, but if the Board thinks it's new, that's the only thing that we submit the Board should treat as new. And I haven't heard anything from Petitioner to the contrary.

Now, the question now, the other question I want to address is that the argument from day one has been about whether the controller implements DPI in the same box. Respectfully, that's not the argument we've been having.

Again, Petitioner proposed a construction of a controller that is configured to perform DPI. That's not the same as saying I'm taking a box, okay, and putting two components in it, one is a controller, the other one's a security service. If that's the argument they were making from day one, that was lost on us, that was not part of their construction, and we've made it very clear in our sur-reply that it's a new argument and that it should be rejected, that's on page six. Sounds like that's the argument they've been making from day one, though, as Petitioner's counsel just stated. If that's the case, that argument is not only incorrect, it's also untimely.

Respectfully, controller needs to be DPI capable controller or -- sorry, a controller that's capable of controlling DPI, or under Petitioner's construction, it needs to be a controller that's configured to perform it. Popping two unrelated components in the same box does not make a claimed controller, nor is that the construction that we've been talking about. So that's point number two that I wanted to address.

Point number three. There have been various suggestions by Petitioner's counsel that somehow Mr. Gomez's testimony is unsupported, because he said it was prohibitively expensive to perform -- yes, it was prohibitively expensive. Mr. Gomez has many, many years of experience in the networking space, his testimony is fully consistent, every single piece of his testimony that's laid out in our sur-reply is consistent with the record, there's support for it. The fact that he said prohibitively expensive and that's not discussed in the '111 patent is beside the point. The expert doesn't need to use the exact same words as the patent. The fact that Lin doesn't address the expense of situating DPI in the controller says nothing, it's also beside the point. That's because Lin discloses a different architecture.

And lastly, another red herring is that the fact that Swenson doesn't disclose the expense of performing DPI at the controller. And that's because Swenson doesn't disclose DPI whatsoever. So with that, I don't think I have any other points to address. If the Board has any other questions, I'm happy to take them up, otherwise I think this concludes my presentation.

JUDGE DOUGAL: All right, thank you both. We appreciate the preparation that you've taken for this oral hearing. We appreciate your arguments and demonstratives. So this concludes the hearing, we'll take your arguments under advisement.

(Whereupon, the above-entitled matter went off the record at 1:03 p.m.)

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