

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JUNIPER NETWORKS, INC.
Petitioner,

v.

MONARCH NETWORKING SOLUTIONS, LLC,
Patent Owner.

IPR2024-00485
Patent 8,451,844 B2

Record of Oral Hearing
Held: May 7, 2025

Before: THU A. DANG, ROBERT J. WEINSCHENK, and
JON JURGOVAN, *Administrative Patent Judges*.

APPEARANCES:

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The above-entitled matter came on for hearing on May 7, 2025,
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P R O C E E D I N G S

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JUDGE WEINSCHENK: All right, welcome everyone. This is an oral hearing for IPR2024-00485, Juniper Networks vs. Monarch Networking Solutions. I'm Judge Weinschenk. With me today are Judge Dang and Judge Jurgovan. Let's start with appearances. Who do we have for Petitioner today?

MR. SABBAGH: Good afternoon, Your Honors. My name is Chris Sabbagh, representing Petitioner, and with me is Todd Briggs, as well.

JUDGE WEINSCHENK: Thank you, Mr. Sabbagh. And do we have on the line for Patent Owner?

MR. COLLIER: Good afternoon, Your Honor. I'm William Collier of the law firm Heim, Payne & Chorush, representing Patent Owner, Monarch, and with me today is lead Counsel, Allan Bullwinkel.

JUDGE WEINSCHENK: Mr. Sabbagh, will you be doing the presenting for Petitioner today?

MR. SABBAGH: Yes, I will be.

JUDGE WEINSCHENK: Okay. And Mr. Collier, will it be just you for Patent Owner as well?

MR. COLLIER: Yes, Your Honor.

JUDGE WEINSCHENK: Okay, great. All right, before we get started, just a few preliminary matters. As always, our primary concern is your right to be heard. If at any time you're having any technical difficulties presenting your case, you could try to let the judges know. If for some reason you can't let us know, please reach out to the team member who

1 provided you with the connection information for the hearing today, and
2 they'll try to get it resolved for you. Please try to remember to mute your
3 microphone when you're not speaking so we don't have any crosstalk across
4 the hearing. And also, please try to remember to identify yourself each time
5 you start your presentation.

6 We have all the papers, exhibits, and demonstratives so just please
7 try to refer to slide numbers or page numbers so that we can follow along.
8 This hearing is open to the public. I don't believe there's any confidential
9 information at issue in this case, but if for some reason confidentiality
10 becomes an issue, please let us know and we can at least briefly close the
11 public line to address that issue.

12 As you know, from our Order, each side will have 60 minutes to
13 present today. I understand that Petitioner is participating in the LEAP
14 program so they will get an extra 15 minutes of time today, giving Petitioner
15 75 minutes. Before you present your arguments, please just let me know
16 how much time you would each like to reserve for your rebuttal times.

17 Before we get started, are there any questions from Petitioner, Mr.
18 Sabbagh?

19 MR. SABBAGH: No questions from Petitioner, Your Honor.

20 JUDGE WEINSCHENK: Any questions from Patent Owner, Mr.
21 Collier?

22 MR. COLLIER: Just one comment, Your Honor. I think I've
23 come down with a cold, so apologies in advance if I start coughing during
24 my presentation.

25 JUDGE WEINSCHENK: No worries, it's that time of year. I have

1 pretty horrible allergies myself, so if you see me blowing my nose, I totally
2 understand how you feel.

3 MR. COLLIER: Thanks, Your Honor.

4 JUDGE WEINSCHENK: All right, with that, let's get started. Mr.
5 Sabbagh, whenever you're ready, you can start. Just let me know how much
6 time you would like to reserve for rebuttal.

7 MR. SABBAGH: Thank you, Your Honor. My plan is to reserve
8 20 minutes for rebuttal. And if you don't mind, I'll share my screen so that
9 you can follow along on the slides, though, also, I'll obviously refer to which
10 slide that I'm talking about.

11 So, I want to start, Your Honors, by giving a quick preview of the
12 issues that I plan to go over in this presentation. I intend to start with the
13 claim construction issue, whether Li teaches the term domains, as it's used in
14 the '844 Patent. Then, then I plan to move on to Ground 2, which is a
15 combination based on Li alone, in view of a POSITA's knowledge of the art.
16 After that, I'll transition to Ground 3, which is the combination of Li and
17 Wu. I don't intend to cover Ground 1. I believe that our briefs sufficiently
18 cover the issues presented in that Ground, and so I plan to rest on the briefs
19 as to Ground 1, which is the combination of Li and Li-2.

20 So, I'll start on Petitioner's Slide 15, which is the beginning of that
21 Claim construction issue, whether Li teaches an --

22 JUDGE WEINSCHENK: Mr. Sabbagh, just so you know, we
23 can't see you. If you're trying to share your slides, I don't see them, at least.
24 I'm happy to follow along on my own, but if you're intending to share, I
25 don't believe we're seeing them.

1 MR. SABBAGH: Okay. I believe I'm sharing them, but if they're
2 not visible, then I'm fine just referring to the slide number if that works for
3 Your Honors.

4 MR. COLLIER: I can see your slides, Chris.

5 MR. SABBAGH: Okay, then I'll just plan to continue sharing
6 them and referring to the slide numbers as necessary. I think that should be
7 sufficient to allow Your Honors to follow along, but let me know if there's
8 any confusion that arises.

9 JUDGE WEINSCHENK: All right, sounds good.

10 MR. SABBAGH: Great, thank you. Moving on to Petitioner's
11 Slide 16, Your Honors already considered this claim construction argument
12 in the institution decision, and decided that on the preliminary record that
13 was present at that time, that Patent Owner's argument about whether Li
14 teaches an inter-domain environment was unavailing. And Your Honors
15 started with Figure 1 of Li -- I'm on Petitioner's Slide 17. Starting with
16 Figure 1 of Li, Your Honors noted that this figure depicts an intra-domain
17 environment, as described in the caption of Figure 1. And there are two
18 important details that I want to point out about Figure 1 that will come up a
19 few times over the next few slides.

20 As you can see, on Slide 17, Figure 1 has IPv4 subnets within it, so
21 that's the gray oval in the top left corner of Figure 1 and the top right corner
22 of Figure 1 as well. And it's critical to note that these are subnets, because
23 as we get into Figure 7 that terminology will change, and the change is
24 relevant to this claim construction issue.

25 Something else to note is that Figure 1 depicts these arrows freely

1 moving across the network that advertises routing information for different
2 hosts in different parts of the network. And to provide some context as to
3 what Figure 1 is showing, the way I like to think of this is, it's as if this is
4 simply a network of an internet provider, so you might think of a company
5 like AT&T that provides access to the internet. In this intra-domain network
6 in Figure 1, the only entity present is AT&T. AT&T might have an IPv4
7 subnet; for example, the one in the top left, that might be, let's say, a group
8 of servers or computers on one floor of its Houston office that serve one
9 purpose. And it might have another subnet; for example, the one in the top
10 right corner of Figure 1, that is on a different floor and serves a different
11 purpose. Maybe one is for engineering tasks and the other is for business
12 and sales. Regardless, these groups of computers are still on the same
13 domain. They're in the same common network, and there's only one entity
14 involved. And that's what's being depicted in Figure 1.

15 In the institution decision, Your Honors then moved on to Figure
16 7, and I'm moving on to Petitioner's Slide 18. And in Figure 7, Your Honors
17 noted that this was different than Figure 1. First, it was introduced in a
18 section titled Extensions to Inter-Domain Environment, and second, there
19 were some key differences between Figure 1 and Figure 7. Again, the same
20 two things I pointed out before: as you can see in Figure 7, rather than using
21 IPv4 subnets, these gray ovals are now referred to as ASes, or autonomous
22 systems. And I'll explain what that means further in a second. But suffice it
23 to say that Li explains these autonomous systems are now customer
24 networks of the provider.

25 So, referring back to our example, the way I like to think of this is,

1 let's say, the top left oval in Figure 7 could be the USPTO's Virginia offices
2 and the servers and computers in that Virginia office, whereas the gray oval
3 in the top right corner might be Quinn Emanuel's Houston office. These, in
4 this example, are both customers of AT&T, so although they establish a
5 network on their premises and put in computers and servers, they still
6 contract with a service provider here at AT&T, to actually access the
7 internet.

8 And the reason why this distinction is important is because the
9 USPTO, in this example, would not be sharing its networking information
10 freely with Quinn Emanuel's Houston office. For privacy and security
11 reasons, these are two separate domains that belong to two different entities.

12 Recognizing this distinction, Li's Figure 7 now uses a standardized
13 protocol in order to share relevant addressing information across the
14 network. So now, in Figure 7, unlike Figure 1, the addressing information is
15 no longer moving freely, now it has to use these protocols that are labeled
16 BGP, which refers to the Border Gateway Protocol, and these protocols must
17 be used in order to share the addressing information between domains. And
18 so, Your Honors looked at these distinctions between Li's Figure 1 and
19 Figure 7, and based on the preliminary record, decided that Patent Owner's
20 argument as to whether Li teaches domains was unavailing.

21 Moving on to Petitioner's --

22 JUDGE WEINSCHENK: Mr. Sabbagh?

23 MR. SABBAGH: Yes, Your Honor.

24 JUDGE WEINSCHENK: This is Judge Weinschenk. Patent
25 Owner points out that the caption below Figure 7 doesn't actually refer to it

1 as an inter-domain environment; whereas, for example, Figure 8 does use the
2 term inter-domain environment. Is there something to that distinction that
3 Figure 7 isn't actually inter-domain because they didn't use it in the caption
4 for the figure?

5 MR. SABBAGH: Thank you for your question, Your Honor. I
6 don't think there's anything significant in that difference. I think these
7 captions, you know, not a lot of thought was put into them, as far as
8 whether -- to specifically point out whether one figure is inter-domain or not.
9 I think that the section, as a whole, that's titled Extensions to Inter-Domain
10 Environment, very clearly explains that Li's Figure 7 is depicting an inter-
11 domain environment, whether or not the caption references that specifically.

12 And I think that if you turn to Slide -- Petitioner's Slide 22, and if
13 you'll look at the box on the bottom of the slide that's quoted here, this
14 comes in the section titled Extensions to Inter-Domain Environment. And
15 here, Li is saying that, in this section, the Inter-Domain Section, "We extend
16 the intra-domain scheme to two new models." And in this first model, it's
17 describing Li's Figure 7, where there are stub autonomous systems
18 connected to an IPv6 backbone. So here, Li is explaining that Figure 7 is an
19 inter-domain environment, notwithstanding the fact that the caption does not
20 say that.

21 Moving back to Petitioner's Slide 19, as I explained, the record has
22 only gotten stronger since Your Honors' institution decision. One key piece
23 of evidence that was introduced are these exhibits that are quoted on the
24 slide that teach that BGP, the routing protocol used in Figure 7, is an inter-
25 domain routing protocol. There are several pieces of evidence in the record

1 that explain quite clearly that whenever networks are set up to use multiple
2 independent domains, that they use BGP to communicate addressing
3 information between the domains. Because, unlike Figure 1, this addressing
4 information, is no longer commonly known across the entire network. So
5 that was one key piece of evidence that has only strengthened Your Honors'
6 initial position.

7 The second is on Petitioner's Slide 20, and that is related to the
8 term autonomous system. Again, there's new evidence in the record that
9 shows that autonomous systems were known in the prior art as domains, so
10 this is only further confirmation that Your Honors were correct in
11 concluding that Li's Figure 7 teaches domains.

12 And Patent Owner did not respond to these pieces of evidence in
13 its sur-reply so these stand unrebutted, and I think they're dispositive of the
14 issue, in addition to what Your Honors decided previously in your institution
15 decision.

16 Rather than responding to Your Honors' reasoning, Patent Owner
17 largely re-hashes the same arguments that it previously advanced. So, in
18 Petitioner's Slide 21, the top box shows Your Honors' institution decision,
19 where you explained what Patent Owner was arguing in its preliminary
20 response, and then the box below is a quote from Patent Owner's subsequent
21 response that word for word makes the exact same argument.

22 Moving on to Petitioner's Slide 22, Patent Owner did attempt to
23 distinguish Li from the '844 Patent in its Patent Owner response, by arguing
24 that the patent explains that the IPv4 domains are, for example, "domains
25 that are administered by a homeowner or business entity." But this

1 argument, in Petitioner's view, does not distinguish the '844 Patent from Li,
2 it in fact further confirms that both the patent and Li are one in the same.
3 Because as I referenced earlier, Li also teaches that it's IPv4 autonomous
4 systems are customer networks of the internet provider. Referring back to
5 our example, that would be the USPTO's Virginia office or Quinn Emanuel's
6 Houston office. These are business entities that contract with the provider in
7 order to gain access to the internet, but ultimately, they're the ones
8 establishing what computers and servers are present in the domain.

9 And that brings me to Petitioner's Slide 23, which shows that Li
10 and Your Honors' institution decision are consistent with what the '844
11 Patent teaches. The '844 Patent expressly provides an example of what a
12 domain is, and that's in that top box on Petitioner's Slide 23, where it says
13 that, "a domain is also referred to as a telecommunications network
14 administered by an operator." And that raises the question, well, what is an
15 operator?

16 The '844 Patent provides several examples of what an operator is.
17 In this middle box on the slide, you'll see that the '844 Patent explains that,
18 in certain embodiments, the service provider is the operator. And here, the
19 service provider, again referring to the example, would be AT&T.

20 So, to the extent that Patent Owner argues that in Li's Figure 7
21 there's only one entity, the service provider, AT&T, then that's still sufficient
22 under the '844 Patent definition of domain and operator. We obviously
23 disagree with that argument. We believe that Li explains clearly that Figure
24 7 includes customer networks, but to the extent the Patent Owner makes that
25 argument, and to the extent Your Honors agree with it, then that's still

1 sufficient according to the intrinsic evidence.

2 The '844 --

3 MS. GARCIA: Counsel? Excuse me, Mr. Sabbagh, please, could
4 you have a pause because Judge Weinschenk somehow was disconnected so
5 we are trying to reconnect him.

6 MR. SABBAGH: Yes, no problem. Thanks for letting me know.

7 MR. SLAY: Judge Weinschenk, can you confirm you're there and
8 you can hear me?

9 JUDGE WEINSCHENK: Yeah. Can you guys hear me?

10 MR. SLAY: Yes, sir. I can hear and see you.

11 JUDGE WEINSCHENK: Okay. All right. Mr. Sabbagh, are you
12 still there?

13 MR. SABBAGH: Yes, I'm here, Your Honor.

14 JUDGE WEINSCHENK: I apologize for that. I'm not sure
15 exactly what happened, but I got disconnected. I stopped your time while I
16 was offline, so you didn't lose any minutes here. I know that I lost you when
17 you were on Slide 20. So, I don't know how far you got after that or if you
18 were still there, but that's where I lost you, so

19 MR. SABBAGH: Okay. I can start back from Slide 20 if that
20 helps.

21 JUDGE WEINSCHENK: Yeah, even if you just do it briefly, that
22 would be great. Thank you.

23 MR. SABBAGH: Perfect. Yes, will do. So, starting back on
24 Petitioner's Slide 20, this slide shows that the autonomous systems in Li's
25 Figure 7 were known in the prior art to be domains. So, this is additional

1 evidence, additional exhibits, that explain that autonomous systems were
2 known by POSITAs prior to the priority date to be domains. And Patent
3 Owner did not respond to this additional evidence about the Border Gateway
4 Protocol or about autonomous systems, so they stand unrebutted, and we
5 believe that they're dispositive of the issue, in addition to the reasons set
6 forth in Your Honors' institution decision as well.

7 Moving on to Petitioner's Slide 21, rather than addressing Your
8 Honors' points in the institution decision, Patent Owner largely re-hashed the
9 arguments that it had already made. So, this slide shows in the top box a
10 quote from the institution decision in which Your Honors explained the
11 point that Patent Owner was making, and then in the bottom box it shows
12 Patent Owner making that same exact argument, word for word, in its
13 subsequent response.

14 A new argument that Patent Owner --

15 JUDGE WEINSCHENK: Mr. Sabbagh?

16 MR. SABBAGH: Yes, Your Honor.

17 JUDGE WEINSCHENK: This is Judge Weinschenk. Do we need
18 to do any claim construction here? I know the parties -- at least Patent
19 Owner's proposed the construction. Does it matter here? It seems like
20 you're arguing that even under their construction, Li teaches the domain in
21 the claims; is that right?

22 MR. SABBAGH: I think that's correct, Your Honor. I think no
23 matter how Your Honors construe this term, Li teaches domains. And I'm
24 happy to keep going through the construction of domains, but if you think
25 that's not necessary, I can also move on to the first ground.

1 JUDGE WEINSCHENK: Yeah. I think in the interest of time, I
2 think I understand your position on the domain issue. I am interested to hear
3 about the port number issue and how we get there.

4 MR. SABBAGH: Great, will do. So I will move on to Petitioner's
5 Slide 26. And once we get past this issue of claim construction and whether
6 Li teaches domains, then we get to this point in the IPR where Li, as
7 Petitioner argued, teaches everything in the '844 Patent's claims except for
8 including a port number. And Patent Owner doesn't rebut that Li teaches all
9 of these different elements. The only argument Patent Owner made as to Li,
10 which is the base reference for all these Grounds, is whether it teaches
11 domains. So, to the extent Your Honors agree that Li teaches domains, then
12 the only issue left to resolve is whether it would have been obvious to
13 modify Li to include a port number.

14 Moving on to Petitioner's Slide 27, Petitioner explains that Li
15 includes an IPv6 prefix in its constructed IPv6 address in the first 32 bits of
16 its address and includes an IPv4 address in the last 32 bits. Then Li goes on
17 to also include unused zero padding, which is highlighted in yellow on the
18 slide, and Petitioner explained that this unused padding would have invited a
19 POSITA to replace it with useful information that could benefit the system
20 in Li, which in this case would be a port number. So, for purposes of
21 invalidity, the only question left to resolve is, would it have been obvious for
22 a POSITA to modify Li to include this port number?

23 Moving to Petitioner's Slide 28, we believe that the answer, based
24 on this record, is indisputably yes, because it was more than common
25 knowledge for POSITAs to include port numbers in IPv6 addresses at this

1 time. This is a sampling of the evidence that's in the record. It includes the
2 prior art references that are used in Petitioner's various grounds; for
3 example, Wu, in the top right corner used a port number in an IPv6 address,
4 and Li-2, in the bottom right corner also taught using a port number in the
5 IPv6 address. But there's also additional references that Petitioner walked
6 through and Petitioner's expert walked through that establishes a POSITA's
7 knowledge in the prior art, and I'll get to those in just one second.

8 But based on this ample evidence, we believe that the answer to
9 this question, whether a POSITA would have modified Li to include a port
10 number is, yes.

11 And that brings me to --

12 MS. GARCIA: I'm sorry. I'm sorry, Mr. Sabbagh. I'm sorry, we
13 need to pause again until we connect with Judge Weinschenk.

14 MR. SABBAGH: Okay, no problem. Thank you, Your Honor.

15 MR. SLAY: Hello, Judge Weinschenk, can you hear me? I'm not
16 sure if you're on, but drop from the WebEx link, and I will dial you back.

17 JUDGE WEINSCHENK: Hey, Charles, do we have any idea why
18 this is happening?

19 MR. SLAY: Yeah, I was going to ask, are you trying to join that
20 link that was in the chat?

21 JUDGE WEINSCHENK: I'm not. I'm just in the call that you
22 called me.

23 MR. SLAY: Okay. I'm not sure why it's dropping, it could be a
24 network issue. If you'd like, you can join the link I sent, and disconnect
25 from here, and it'll put you on the other screen, but you'll be able to hear and

1 see everything.

2 JUDGE WEINSCHENK: Will I be able to talk that way? Will
3 they be able to hear me? Charles?

4 MR. SLAY: Just a moment, I'm sorry, Teams is ringing, and it's
5 loud. Just a moment. I'm sorry, I cannot hear you. I'm sorry, could you
6 repeat again?

7 JUDGE WEINSCHENK: If I join the link the other way, will they
8 be able to hear me still?

9 MR. SLAY: Yes, sir, you'll be joined --

10 JUDGE WEINSCHENK: So, if I go into that link then --

11 MR. SLAY: -- and connect your audio. So, go to the link I sent
12 you in Teams, join the audio, and I'll disconnect you from here.

13 JUDGE WEINSCHENK: Okay, sounds good.

14 MR. SLAY: Thank you. Standing by. Okay, sir. Can you give
15 me an audio check?

16 JUDGE WEINSCHENK: All right. Yep, can you hear me?

17 MR. SLAY: Yes, I can. And we can see you. Thank you.

18 JUDGE WEINSCHENK: Yeah. All right. I apologize again to
19 everyone for this. I'm not really sure. I never had this trouble before, but
20 hopefully this has resolved it now. Mr. Sabbagh, you can continue when
21 you're ready.

22 MR. SABBAGH: Thank you, and no problem. I'm going to start
23 at Petitioner's Slide 29, which is the beginning of Ground 2, Li alone. And
24 here, we argue that a POSITA would have found it obvious to modify Li to
25 include this discrete and simple-missing element, the port number, based on

1 a POSITA's general knowledge in the art.

2 Moving on to Petitioner's Slide 30, that's exactly what Petitioner
3 expressed in the Petition, that the general knowledge of the art would have
4 motivated a POSITA to make this change. And this knowledge in the art,
5 Petitioner walked through it extensively, Petitioner's expert walked through
6 it extensively, and there are several exhibits that support making this
7 motivation. But most importantly, for purposes of what we're here for today
8 is that Patent Owner does not substantively dispute any of the general
9 knowledge in the art or a POSITA's motivation to make this modification
10 based on the prior knowledge in the art.

11 JUDGE WEINSCHENK: Mr. Sabbagh?

12 MR. SABBAGH: Yes, Your Honor.

13 JUDGE WEINSCHENK: This is Judge Weinschenk. I recall, in
14 your petition that you weren't seeming to be focused so much on the
15 knowledge of a person of skill in the art, you seem to rely on simultaneous
16 invention for this ground. I think those are two different things. So, I'm
17 curious as to which one it is. And it seems like -- I mean, I'm looking at
18 your petition on the screen now, it says, "evidence of simultaneous
19 invention."

20 MR. SABBAGH: I disagree, Your Honor. So, if you would turn
21 to page 62 of the Petition, and look at the first paragraph under Ground 2.
22 That paragraph says, "That to the extent Patent Owner argues Li-2 is not
23 prior art," so this is referring to the first Ground, "the challenged Claims are
24 still obvious, based on Li alone, in view of the common knowledge in the
25 art." So, that was the basis of this ground.

1 JUDGE WEINSCHENK: And when you say, "common
2 knowledge," do you have any evidence that this was well known to use the
3 port number prior to the date of the challenge Patent? Because it seemed
4 like the evidence you said in below there was evidence of invention shortly
5 after the date of the challenged Patent, so I'm a little confused here.

6 MR. SABBAGH: Yes, Your Honor. And to be clear, the evidence
7 in this section, number one, is referring to evidence, that for purposes of this
8 ground, would have been introduced into the public art after the priority
9 date. What we're referring to here, when we refer to the common knowledge
10 in the art, are the pieces of evidence that we walked through in the factual
11 background section of our brief. And if you look at Petitioner's Slide 31,
12 Petitioner's expert walked through three key pieces of history, in this prior
13 art knowledge, that showed and explained why a POSITA would have been
14 motivated to make this modification, and further showed and explained that
15 POSITAs were making this modification before the priority date of the '844
16 Patent. And I can walk through these very briefly to provide an additional
17 explanation. But the first --

18 JUDGE WEINSCHENK: Well, hold on one second. I just want to
19 make sure I understand where we're headed here because -- is it your view
20 that we were supposed to understand, from this Ground 2 on page 62 of your
21 Petition, that we were supposed to look back to possibly I think you were
22 referring to pages 7 and 8 of the Petition, for what was really the basis of this
23 ground?

24 MR. SABBAGH: Well, I think, Your Honor, that this page and
25 paragraph do support that contention. And then I also think that if you turn

1 to page 64 and look at the motivations to modify Li, this paragraph explains
2 that a POSITA would have been motivated to modify the teachings of Li for
3 the same reasons described in Ground 1, and it cites to the specific section
4 that it's referring to. And in Ground 1, as you'll see on Petitioner's Slide 30,
5 the quote in the bottom box from petition 25 is also explaining again, the
6 prior art includes express teachings that would have led a POSITA to make
7 this modification, and it (CROSSTALK) --

8 JUDGE WEINSCHENK: Yeah, but you're referring there to -- on
9 page 25 of your Petition, to a reference that is being disputed as to whether
10 it's actually prior art, so -- which you're telling me you're not going to
11 address today, whether Li-2 is actually prior art. So, again, we're stuck with
12 something that's not prior art, possibly, as showing something that you say is
13 common knowledge.

14 MR. SABBAGH: Well, Your Honor, what I'm referring to here is
15 not Li-2. What I'm referring to is the last sentence that's highlighted on
16 Petitioner's Slide 30, where it explains that based on information in the prior
17 art, a POSITA would have known, number one, IPv4 addresses can be
18 converted into IPv6 addresses, and number two, that port numbers can be
19 used to share a public IPv4 address among multiples hosts. And this
20 sentence cites back to the factual background section for support to explain
21 that this was common knowledge in the art.

22 And on Petitioner's Slide 31, these are the points that Petitioner
23 walked through and that Petitioner's expert walked through. The first point,
24 which I mentioned earlier, is that port numbers were known to be able to be
25 used to prevent IPv4 address exhaustion. So, at this time, there was a

1 concern among POSITAs that if you kept assigning a single IPv4 address to
2 a single host, that we would run out of IPv4 addresses because there were
3 only a limited number of addresses available. And so, POSITAs looked for
4 different ways to share a single IPv4 address among multiple computers, and
5 one way to do that was to rely on port numbers. And Petitioner's expert
6 walked through several different pieces of evidence, showing that this was
7 common to do at the time.

8 The second point was that, later on in this history, POSITAs
9 developed a standard called IPv6, and IPv6 had longer addresses that
10 allowed for a larger number of addresses. But the problem with IPv6 is that
11 there would be a transitional period, where you would still have IPv4
12 computers while you also have IPv6 computers, and there would be a need
13 to allow the two to intercommunicate.

14 And Petitioner and its expert explained that, prior to the priority
15 date, it was common that to solve this problem, POSITAs could convert
16 IPv4 information, including an address into IPv6 information. But that
17 didn't solve the IPv4 exhaustion problem. Because if you only have one
18 IPv4 address or one IPv6 address, you still run the risk of running out of
19 IPv4 addresses. So, Petitioner and its expert further explained that
20 POSITAs, before the priority date, knew how to combine these two
21 teachings -- these two common teachings together, in order to arrive at
22 ultimately what the '844 Patent teaches.

23 If you move on --

24 JUDGE WEINSCHENK: Mr. Sabbagh, can you stay on this page
25 for a second?

1 MR. SABBAGH: Yes, Your Honor.

2 JUDGE WEINSCHENK: Have you established that any of the
3 documents that you're citing here are prior art?

4 MR. SABBAGH: Yes, I think we do. Quite a few of these
5 documents are patents or patent applications so I think that establishes the
6 prior art status of them. For example, Exhibit 1024, which is King, Exhibit
7 1025, which is Biswas, 1019, which is Samprathi, and 1030, which is
8 Huitema. So, I believe the prior art status of those references are
9 undisputed. And further, to the extent that there is a question about the prior
10 art status of any of these exhibits, Petitioner only attacked two of them.

11 And if you move on to Petitioner's Slide 34, this is the same slide,
12 except now here it's showing the two exhibits that are in dispute being
13 crossed out. So, this is to show that if Your Honors agree with Patent
14 Owner, that these two exhibits are not prior art, then ultimately it's
15 inconsequential, because there are undisputed prior art references that teach
16 these points in the record.

17 JUDGE WEINSCHENK: My other question for you is, it seems
18 like those references, even if we assume they show that port numbers were
19 used to prevent IPv4 address exhaustion, do any of these references show
20 actually creating or constructing an IPv6 address using a port number?

21 MR. SABBAGH: Yes, Your Honor. And if you turn to
22 Petitioner's Slide 35, this is one of those references, Exhibit 1030, referred to
23 as Huitema, it's a patent application. And Huitema walks through this
24 process of taking IPv4 information and putting it altogether in order to create
25 an IPv6 address. And one of the pieces of information that Huitema

1 includes in the IPv6 address is a port number, which is highlighted here in
2 blue. Petitioner's expert walked through this process in detail in paragraph
3 47 of his report. The reason that Petitioner did not rely on this piece of
4 evidence as prior art is because during the prosecution process for this
5 Patent, the applicant had identified Huitema and the examiner rejected it for
6 reasons that Petitioner explains in its petition in the discretionary denial
7 section, that we believe were incorrect, but we didn't want to run that risk in
8 the petition so we didn't chart it.

9 I will note --

10 JUDGE WEINSCHENK: Well, this presents a bit of an issue now,
11 because it sounds like you strategically chose not to rely on Huitema as part
12 of the asserted ground to avoid any issues regarding discretionary denial.
13 And now what you want us to do is, bring it in and rely on it as evidence of
14 sort of common knowledge. Doesn't that seem a bit unfair?

15 MR. SABBAGH: I don't think so. Because the reason we didn't
16 rely on Huitema was not necessarily to this discrete point of whether
17 Huitema teaches including a port number in the IPv6 address. I believe the
18 problem with Huitema, during prosecution, was whether Huitema taught
19 teaching communications across domains as that term is used in the Patent.
20 So, I think that it's not problematic because the issue with Huitema, during
21 prosecution, was different than the issue that we're using it for here today.

22 And I'll also note, I know this is not dispositive, but I believe it is
23 relevant that when the '845 Patent, which is a companion patent to this one
24 here, was undergoing ex parte reexamination recently, the claims in that
25 patent were canceled in view of Huitema, and we reference that in our reply

1 as well.

2 So, I think that the examiner realized the mistake of rejecting
3 Huitema during prosecution and has now understood that Huitema teaches
4 all portions of the '845 claim, which is quite similar to the '844 claims. But
5 for purposes here, all we need to focus on is the fact that Huitema includes a
6 port number in its constructed IPv6 address.

7 And this is not --

8 JUDGE WEINSCHENK: Yeah. But I think, Mr. Sabbagh, you're
9 not really answering my question of fairness here, and it seems like you
10 made a decision in order to get the case instituted to not rely on this
11 reference, and now that we're at trial, you want us to rely on it anyway. I
12 don't understand how we can do that when that's not part of your grounds.

13 MR. SABBAGH: I think it -- again, Your Honor, I respectfully
14 disagree. I think it is part of our grounds. I think we mentioned it in Ground
15 2, especially when we were referring back to our motivations to combine
16 and referring back to the common knowledge in the art. But to the extent
17 that Your Honor does not want to rely on Huitema, I understand that and I
18 respect that decision. Then, we can move on to Petitioner's Slide 36, which
19 is another reference that we discussed in our petition, that again shows
20 including a port number in a constructed IPv6 address.

21 So, to the extent you do not consider Huitema, even though it was
22 known in the Petition, and even though Patent Owner did not raise any
23 objections to it, I think that this Exhibit, 1032, also shows it was common
24 knowledge to include a port number and a constructed IPv6 address.

25 And the last piece of evidence I want to go over is in Petitioner's

1 Slide 37. This was admittedly not raised in the petition for this purpose, but
2 it was included as an exhibit in the petition and mentioned in the reply. This
3 is a reference that talks about there being a long history of treating port
4 numbers as part of the network address, and it cites to several different
5 documents, some of which pre-date the priority date by a decade. So I think
6 this is further confirmation as well that it was common to use port numbers
7 as part of a network address.

8 Moving on to Petitioner's Slide 38, as Your Honor previewed,
9 Petitioner also identified additional art that further confirmed that this
10 modification would have been obvious and would have required minimal
11 skill. And those are the simultaneous invention references that Petitioner
12 discussed in the Petition. The issue that Patent Owner identified with these
13 references is that Petitioner did not do a limitation-by-limitation analysis of
14 the evidence of simultaneous invention to show that every limitation was
15 met by this additional confirmatory evidence. And the issue with Patent
16 Owner's argument is that the law does not require limitation-by-limitation
17 analysis. Patent Owner doesn't cite to a case that requires this. And
18 Petitioner went back and looked after Patent Owner made this argument and
19 also did not find a case that require a limitation-by-limitation analysis for
20 simultaneous invention.

21 Also --

22 JUDGE WEINSCHENK: Mr. Sabbagh --

23 MR. SABBAGH: Yes, Your Honor.

24 JUDGE WEINSCHENK: -- can I stop you there for a second,
25 because I also have a question about the law here. It's my understanding that

1 simultaneous invention is what we often refer to as a secondary
2 consideration or an objective indicia. Normally, we think of them as
3 showing non-obviousness, but in this case it shows obviousness. And what I
4 couldn't find is, is there any law, where someone has relied on, and the Court
5 has approved of, using simultaneous invention to sort of fill in a limitation
6 that's missing from the actual prior art, because I didn't see anything like
7 that?

8 MR. SABBAGH: Your Honor, I don't have that answer here with
9 me today. I'm happy to go back and look and provide additional briefing on
10 this issue, if needed, but I truthfully don't know the answer to that question.

11 JUDGE WEINSCHENK: As I understand it, that's what you're
12 trying to do here. You're trying to use evidence of simultaneous invention to
13 fill in something that's missing from Li; is that correct?

14 MR. SABBAGH: No, Your Honor, I disagree. And I think this
15 goes back to the issues that we were talking about earlier. I believe that our
16 petition explained that the motivation for this modification is a POSITA's
17 general knowledge in the art, based on prior art that pre-dated the priority
18 day.

19 If you look at the simultaneous invention section in the Petition,
20 which I think is on page -- sorry, if you'll give me one second to find it -- on
21 page 62 of the Petition, if you look at the second sentence of the first
22 paragraph, it says that, "Here, evidence of simultaneous invention further
23 indicates a POSITA would have been motivated to modify Li." So, in our
24 view, this is not the basis of this ground, Ground 2, this is simply further
25 confirmation that the modification would be simple in view of what a

1 POSITA knew at the time.

2 And if you turn to Petitioner's Slide 41, this is the disclosure that
3 Petitioner focused on in the Petition. And the reason why we focused on this
4 disclosure, specifically as to this claim limitation is, again, because
5 limitation 1-A was the only limitation that was not fully met by Li. And the
6 simultaneous invention evidence was used to show that it was common to
7 perform this kind of modification around the time of the invention.

8 In terms of the IVI references, which include Li, that invention
9 came out mere days after the priority date. It's as close to simultaneous
10 invention as you can get. And this slide here, Petitioner's Slide 41, shows
11 the Li teaching, converting an IPv4 address on the left into an IPv6 address
12 on the right, and the IPv6 address includes the port number at the end. So,
13 again, this is mere days after the priority date, inventors were arriving at the
14 same idea expressed in the '844 Patent.

15 And before moving on to the next ground, I want to turn to
16 Petitioner's Slide 48. This is the case that we cite in reply. Here, the Federal
17 Circuit's acknowledging that, in this situation, simultaneous invention
18 evidence can be additional evidence that confirms the probative level of
19 knowledge in the art, but it's also unnecessary. And that's what we're
20 arguing today is that we set forth what a POSITA would have known, and
21 why a POSITA would have been motivated to make this modification based
22 on the knowledge in the prior art, and the simultaneous invention evidence
23 just confirms that the modification would have been simple to make.

24 Moving on to Ground 3, Petitioner's Slide 49, this is the ground
25 that combines Li with Wu. And again, to re-hash this point -- I know I'm

1 hitting on it a lot, but I think it's important. To the extent Your Honors agree
2 Li teaches domains, then it is undisputed Li teaches everything but a port
3 number. And so the combination of Li and Wu is merely to show that the
4 prior art teaches placing a port number inside of an IPv6 address, and that's
5 shown in Petitioner's Slide 50. This is the teaching from Li that explains
6 that an IPv6 address can be constructed in which 16 bits are dedicated to a
7 port number.

8 On Petitioner's Slide 51, this previews the arguments that Patent
9 Owner makes against the combination of Li and Wu. And I'll walk through
10 these one by one, but I think there's one response that addresses them fully,
11 and that's on Petitioner's Slide 53. And what's happening with Patent
12 Owner's response to the combination of Li and Wu is that Patent Owner
13 overstates the combination. As discussed in the Petition, the combination is
14 very discrete. It relies on simply Wu's teaching that a POSITA could
15 include a port number in an IPv6 address. Patent Owner's arguments, in
16 response, all go beyond this discrete teaching, and appear to assume that a
17 POSITA would have to implement actually more from Wu than just the port
18 number. It would have to implement the specific network configuration of
19 Li and other steps in Li that are not relevant to Wu. And so, all of these
20 responses from Patent Owner are resolved, I believe, with this one argument,
21 and it's -- the fact that when you're combining references, as the Federal
22 Circuit in *In re: Mouttet* on Petitioner's Slide 53, the test for obviousness is
23 not whether you can bodily incorporate one reference into the base
24 reference.

25 Here, Petitioner is not asserting that a POSITA would have

1 incorporated Wu wholesale into Li or even Wu's larger teachings into Li.
2 The teaching that's relevant from Wu is very discrete and very minor, just
3 the fact that Wu teaches this one missing element, taking a port number and
4 putting it in the IPv6 address.

5 Now, moving on to Petitioner's Slide 54, I'll start with this first
6 argument that Patent Owner makes, which is that Li and Wu disclosed
7 different system architectures and therefore cannot be combined.

8 On Petitioner's Slide 55, this shows that, again, Your Honors have
9 analyzed this issue, and fully addressed it, and the record evidence has not
10 changed since then, so in our view, it should be rejected for that same
11 purpose. This goes back to the fact that Petitioner is not bodily
12 incorporating Wu into Li, and simply because Wu teaches starting from, let's
13 say, an IPv6 domain rather than starting from an IPv4 domain, that does not
14 indicate that the two references address unrelated communication problems.
15 In fact, in both Wu and Li, you have a data packet that moves between IPv4
16 to IPv6 and vice versa. Both references teach how to address that problem
17 and so they address the same communications problem.

18 On Petitioner's Slide 56, Patent Owner argues that Li is a stateless
19 system and therefore it cannot be combined with Wu because Wu is
20 allegedly a stateful system.

21 On Petitioner's Slide 57, I highlight a few teachings from Wu in
22 the '844 Patent that clarify Patent Owner's misunderstanding of Wu. What's
23 going in Wu is, yes, there's a process in which a NAT device assigns port
24 numbers to a host, that's common in all of the references. There's always a
25 process in which the host is assigned addressing information.

1 For example, in Li, the host needs to be assigned an IPv6
2 address -- or sorry, an IPv6 prefix and an IPv4 address. In the '844 Patent,
3 the host is also assigned an IPv6 prefix and a port number. The same thing
4 happens in Wu, where the NAT device assigns to the host a port number for
5 it to use. And this information, Patent Owner is correct, is stored in a
6 database, but that does not make the address construction process stateful.
7 And that's what key here is, that these are two separate processes that Patent
8 Owner is conflating. Assigning addressing information does require
9 memory, and it happens in all references: Wu, Li, and the '844 Patent. But
10 the actual process of constructing an IPv6 address from IPv4 information is
11 stateless, it happens dynamically.

12 What I mean by stateless is, that when a host or server wants to
13 construct an IPv6 address, it doesn't perform a database lookup based on
14 whatever IPv4 address is available, and then find a match and say, ah-ha,
15 here's the IPv6 address associated with this IPv4 address. If it did, then Wu
16 would be stateful, but Wu does not teach database lookups for this process.
17 Instead, Wu teaches dynamically constructing an IPv6 address from
18 information that is present in an IPv4 data packet.

19 JUDGE WEINSCHENK: Mr. Sabbagh?

20 MR. SABBAGH: Yes, Your Honor.

21 JUDGE WEINSCHENK: This is Judge Weinschenk again. I have
22 a question about this. If you look at page 11 of Wu, and there's a section in
23 the middle that says, "pseudo external port," which is what you've been
24 referring to as the port number, and then underneath it is says, "the external
25 port NAT mapped for," which I understand NAT means Network Address

1 Table. And then it goes on to say, "the server obtains this port from the
2 received initialized data packet. Considering that NAT will delete the
3 expired mapping relation, the client -- and will periodically send data
4 packets to NAT to maintain such mapping relation."

5 So, this portion seems to suggest that the external port number that
6 you're referring to is part of a mapping table. Can you clarify to me, is it
7 used in a different way, that it's not used to construct the IPv6 address? Is
8 that why you're arguing that it's not stateful in this sense, that it's used for
9 some other purpose?

10 MR. SABBAGH: Yes, Your Honor. So, you're correct that Wu
11 teaches by not assigning a port number to a host and then storing that port
12 number assignment in the table. The purpose of storing this port number
13 assignment in Wu and in all of these similar references is, I believe for error
14 checking, so that if the host uses an incorrect port number, then the system
15 can validate whether that was correct for the host to do, and if not, whether
16 to discard that packet or how to route it.

17 And I'll refer you to Exhibit 1001, which is the '844 Patent, column
18 12, lines 24 to 28, and this disclosure is showing that the '844 Patent does
19 the same thing that Wu does, even though the '844 Patent states that it's
20 stateless. So, here it's talking about the home gateway, which is the device
21 that sits between the two domains, and explains that when a host sends a
22 data packet through the home gateway, the home gateway can check
23 whether that port number that the host uses is correct. And if not, if it's a
24 port number outside of the range that's assigned to the home gateway, it'll
25 replace it with a port number belonging to the range of authorized ports.

1 This is exactly what happens in NAT, and this is not simply a cherry-picked
2 quote from the patent to address this question.

3 If you move on to column 12, lines 47 to 50, this is again talking
4 about the home gateway in the '844 Patent, and it explains that the device
5 includes a database that stores a network address translation table for this
6 purpose. And that, in our view, does not defeat the purpose of the '844
7 Patent, and it does not defeat the purpose of Li, either. Because all this is
8 doing is, recognizing that certain network components need to store assigned
9 information in order to know whether the data packets being sent out are
10 using the accurate information that was assigned to each host. That process
11 of error checking or maintaining assignments is separate from the process of
12 constructing an address, and all the claims cover is the address construction
13 process, which is dynamic in Li, it's dynamic and stateless in Wu, and it's
14 dynamic and stateless in the '844 Patent.

15 So, the claims -- first, the '844 Patent's spec, but especially the
16 claims, do not require no memory at all in the system. No storing the
17 assignments, no storing port assignments, things like that. That's reading in
18 requirements that are not present in the claims.

19 And moving on to Petitioner's Slide 59, to the extent Your Honors
20 disagree, and determine that Wu is stateful, again, we believe that it's not,
21 that the process that's relevant here, which is the process of constructing an
22 address is stateless in Wu, it's done dynamically, but to the extent Your
23 Honors disagree, we do not believe that this destroys the combination.

24 Patent Owner argued in this first box here at the top of the slide
25 that because Wu is purportedly stateful, implementing it into Li and

1 combining it with Li would eliminate any advantages of Li. Again, as a
2 general matter, this overstates the combination beyond the small teaching of
3 using a port number in an address. But if it's relevant, the '844 Patent
4 recognizes that this would not destroy the benefits of such a stateless system,
5 it only says that it wouldn't be recommended. And Li-2, in this bottom box,
6 says the same thing.

7 As you'll remember from the briefing, we assert that Li-2 is an
8 extension of Li, and Li-2 introduces an option to introduce state into Li's
9 system. And Li-2 mentions, just like the '844 Patent does, that when you
10 introduce state in the mapping process, there's a balance of tradeoffs, and it
11 would be up to a POSITA to decide whether that is worth performing or not.
12 But it does not, as Patent Owner argues, eliminate any advantage of Li's
13 stateless technique.

14 And that brings me to the last point, and I think after this I'll
15 conclude my opening argument. On Petitioner's Slide 60, here, Patent
16 Owner argues that Wu does not teach a destination port number being
17 included in the IPv6 address.

18 On Petitioner's Slide 61, we show that that is not the case, and
19 really this is, in our view, just a semantic argument, to say that it's a source
20 port instead of a destination port. Because Wu teaches both sending and
21 receiving data packets. So, if a data packet is sent and operates as a source
22 port on the way out, then it inevitably will operate as a destination port when
23 a responsive data packet arrives back into the system.

24 And if --

25 JUDGE WEINSCHENK: Mr. Sabbagh, how do we know that

1 that's how it's going to work? I guess, if that's the port number, why
2 wouldn't the packet coming back in the other direction also use its source
3 port number rather than the one that sent -- you know what I'm saying?
4 Why aren't both packets just using source numbers instead of destination
5 numbers?

6 MR. SABBAGH: Because, Your Honor, when -- first, I'll answer
7 your question and then move on to where in Wu it explains this. When a
8 data packet is sent back to the client, the destination address, the IPv6
9 destination address, would be this constructed address that includes the IPv6
10 prefix, the IPv4 address and the port number, because that combines
11 information, the IPv6 address identifies the computer. And so, on its way
12 back, because the computer is an IPv4 host, the data packet has to undergo
13 this process where the information is extracted from the IPv6 address and
14 used to create an IPv4 data packet. And so, the server will extract the port
15 number from the IPv6 destination address and place it into the port number
16 slot of the IPv4 data packet, the destination port number slot of the IPv4 data
17 packet, because that ensures it gets back to the host that initiated the
18 communication.

19 And if you turn to the Petitioner's Slide 63, that's exactly what's
20 going on in this quote from Wu that's in the bottom box here. Here, this
21 Server 2 has received an IPv6 data packet, which includes an IPv6
22 destination address, and it extracts from that IPv6 destination address
23 information in order to construct an IPv4 data packet. One of these pieces of
24 information, highlighted here, is the extracted external port that was
25 included in the IPv6 address, and that extracted port is used as a destination

1 port.

2 So, this is, I think, unambiguous evidence, that Wu teaches that the
3 port number that's included in the IPv6 address is a destination port number.
4 And this is not the only disclosure of this in Wu. As you'll see here, in the
5 citation, this cites to our reply expert report, Exhibit 1057, paragraph 72, Wu
6 says this exact thing no less than 11 times throughout the reference. So, we
7 believe that Wu is sufficiently clear on this subject, and that there's no
8 argument that the pseudo external port is a destination port.

9 And with that, unless Your Honors have any further questions, I'll
10 reserve the rest of my time for rebuttal.

11 JUDGE WEINSCHENK: I do have a question, Mr. Sabbagh. I
12 know you said you were going to rest on your briefs on the Ground 1 that
13 includes Li-2, but I do have a few questions because I think that would be
14 helpful to me.

15 MR. SABBAGH: Of course, Your Honor.

16 JUDGE WEINSCHENK: It sounds like you're relying on two
17 theories to show that Li-2 is prior art, one, that it was in the staging folder
18 and two, that it was, at least at some point in time, catalogued by the data
19 tracker. Is that sort of correct as to your theories?

20 MR. SABBAGH: Yes, Honor, that's correct.

21 JUDGE WEINSCHENK: Okay. And, yeah, I want to take the
22 second one, the data tracker. Do we have any evidence in the record? I
23 know we noted this in our institution decision, as to how long Li-2 was
24 available in the data tracker or catalogued there? Because it sounds like at
25 some point when it's canceled it comes out of there, and we couldn't find

1 anything as to how long it was available there.

2 MR. SABBAGH: No, Your Honor, your correct. How long it
3 would have been available? This was the system that was implemented in, I
4 think in -- prior to 2008, so the details kind of got lost in time. But what I
5 will note is that Li-2 was added to the staging folder and thus the data
6 tracker, I believe nine days before the priority date. So, to the extent that it
7 was available, then it was available for, I think, a considerable amount of the
8 time that's relevant to this inquiry here. Even if it was only a day, that's one-
9 ninth of the time before the priority date. But yes, you're correct that there's
10 no evidence in the record as to how long it would have been available.

11 JUDGE WEINSCHENK: Okay, thank you. And then, for that
12 staging folder, it's my understanding that your position is that as of the
13 priority date, there would have been, maybe approximately, and I think you
14 said 900 documents in that staging folder?

15 MR. SABBAGH: Yes, Your Honor. And I'll emphasize that a lot
16 of those documents, as you can see in the exhibit listing them, are duplicates.
17 So, there are 900 documents, but sometimes there are ten duplicates of a
18 single document, which would have reduced that number considerably as
19 well.

20 JUDGE WEINSCHENK: Okay. And you're relying on the fact
21 that a person of skill in the art, exercising reasonable diligence, would have
22 recognized either the author's name or the IVI acronym in the file name, and
23 that's would have keyed them off that this was relevant. Is that what you're
24 relying on?

25 MR. SABBAGH: Yeah, I think there are a few points here, and I

1 can walk through them very briefly if you turn to Petitioner's Slide 72. This
2 is the case that Patent Owner cites in its surreply, attempting to distinguish
3 the facts here from facts -- or attempting to draw a comparison of the facts
4 here to the facts in a case titled Acceleration Bay. And the Federal Circuit, I
5 think emphasized in this case, that the inquiry here is very fact specific. And
6 the Court conveniently identified some facts that would have weighed in
7 favor of finding public accessibility in that situation.

8 So, on Petitioner's Slide 73, one of the facts that was weighed
9 against finding public accessibility in that case is that a POSITA would have
10 had to skim through titles, potentially hundreds of titles in the same year.
11 And again, we believe that, here, the record is more limited because, as you
12 can see in the quote above, the Federal Circuit says, "There was no evidence
13 as to how many reports were in the library in that case." Here there is
14 evidence, and we believe the universe is fairly limited. There's also
15 evidence of the data tracker, that that could have been used to search for the
16 document.

17 On Petitioner's Slide 74, the Federal Circuit said that, "In this case,
18 the documents contained unrelated subject matter." The ITF (sic) is all
19 about internet engineering, so all of the documents here are related in some
20 way. And further, as you can see in the data tracker, you can search by area
21 acronym and working group acronyms here as well, which would further
22 limit the documents that a POSITA would search through to very relevant
23 and related subject matter.

24 And then, Petitioner's Slide 75 is the last point, where the Federal
25 Circuit said one of the factors that weighed against public accessibility is

1 that the authors were not well known. And here we have evidence in the
2 record stating that Dr. Li was very well known at this time, and he had
3 authored numerous influential networking papers, and Patent Owner does
4 not rebut that evidence either.

5 JUDGE JURGOVAN: Counsel, can I ask you a question? This is
6 Judge Jurgovan --

7 MR. SABBAGH: Yes, Your Honor.

8 JUDGE JURGOVAN: -- and that is, who has access to the staging
9 folder at IETF?

10 MR. SABBAGH: I think it was maintained by the record librarian
11 at the time. Well, to be clear, it was automated. So, whenever a POSITA
12 would submit a paper, that paper would automatically be uploaded to the
13 staging folder. I believe that the ITF librarian or record keeper, most likely
14 had authority over the staging folder, but that's not in the record, and I can't
15 say for certain. What I will note is that anyone could have accessed the
16 staging folder, and that's confirmed in the record evidence, particularly the
17 deposition testimony from Ms. Morris, who is the IETF custodian in Exhibit
18 2016. I believe that's at Petitioner Slide 68, it's quoting from her deposition,
19 it says that, "This folder was accessible by anyone in the world through the
20 URL."

21 And then, on top of that, there are, I believe, 10 public emails in
22 the IETF's internet archive that all link to the staging folder prior to the
23 priority date, and one of those emails is shown in Petitioner's Slide 71. So
24 that indicates that POSITAs were communicating to each other where to
25 access these various drafts and how to access the staging folder.

1 JUDGE JURGOVAN: From the file name submission, can you
2 tell the working group to which that submission pertains?

3 MR. SABBAGH: Sometimes you can. I think that there are drafts
4 that include the working group acronym. I believe as to Li-2, specifically,
5 the file name did not include the working group acronym.

6 JUDGE JURGOVAN: Thank you.

7 MR. SABBAGH: And then, unless there are further questions, I
8 reserve whatever remainder I have left of my time.

9 JUDGE WEINSCHENK: All right. Thank you, Mr. Sabbagh.
10 You used about 57 minutes so you'll have 18 remaining for your rebuttal
11 time.

12 MR. SABBAGH: Thank you, Your Honor.

13 JUDGE WEINSCHENK: Mr. Collier, whenever you're ready.
14 Just let me know how much time you'd like to reserve for rebuttal.

15 MR. COLLIER: I'd like to reserve 15 minutes, Your Honor. I'll
16 start by sharing my screen. I'm not sure it's been working. Are you able to
17 see -- this should be Patent Owner's Slide 2.

18 JUDGE WEINSCHENK: Yes, I can see it, thank you.

19 MR. COLLIER: So, I'll start on this Patent Owner's Slide 2 and
20 just briefly go over how I plan to proceed before diving into things. So first,
21 I want to talk about Li, specifically, and how it doesn't disclose the different
22 domains claimed by the '844 Patent. Instead, as we'll see, the embodiment
23 that's been relied on in the petition by Petitioner, discussed IP traffic within a
24 single domain, whose access is controlled by a single entity.

25 In light of Petitioner's presentation, I'll deal with Li-2 at the end.

1 So, I'll next talk about this simultaneous invention issue. And there I think
2 the Board recognizes that Petitioner's argument here keeps shifting. The
3 current one seems to be an attempt to use this concept of simultaneous
4 invention to get around the requirements of the obviousness, and the
5 obviousness analysis, and avoid the fact that the petition simply did not
6 discuss any evidence of obviousness related to Ground 2.

7 Third, we'll discuss Wu, and go over the reasons why a person of
8 skill would not even look to Wu to modify Li. To some extent, it seems like
9 Petitioner doesn't actually understand what Wu is doing and what it
10 discusses, and that misunderstanding leads to some confusion over how it
11 works and why you wouldn't even think to look to Wu if you're dealing with
12 Li and trying to improve Li.

13 And then as I mentioned, I'll last touch on Li-2 and whether or not
14 it was prior art. The short version of that argument is that, Li-2 simply was
15 not catalogued. It was dumped in a directory and left there. And that fact,
16 alone, is enough to establish that it was not available as prior art.

17 So, to address the first point, I'd like to go to Patent Owner's Slide
18 3, and we're going to briefly talk about the '844 Patent, and how it deals with
19 domains. On Slide 3, I have an excerpt from the '844 Patent describing the
20 invention. The idea of the '844 is that it allows packets to be transmitted
21 between IPv4 domains and IPv6 domains without necessarily having to
22 maintain state tables at the interconnecting devices. And it does this by
23 constructing this IPv6 addresses using information found in the IPv4
24 packets. This way, as a data packet moves throughout the network, there's
25 no need -- as long as all the devices understand the system that's being used,

1 there's no need to maintain these sort of state tables associating IPv6
2 information with IPv4 information.

3 So, this process is illustrated -- if we go to Patent Owner's Slide 4,
4 in Figure 1 of '844, I've annotated it here on Slide 4, and this annotation is
5 also in our response on page 8. This figure illustrates a domain 3 that's an
6 IPv4 domain connected to an IPv6 domain 1, and then another IPv4 home
7 network 2.

8 On home network 2, there's two IPv4 devices, terminals 21 and 22,
9 and in domain 3, there's also an IPv4 device, which is terminal 31. Now, if
10 terminal 31 was trying to interact with terminals 21 or 22, it traditionally
11 would not be able to, because the packet -- the IPv4 packet that has to go
12 from terminal 31 to terminal 21 cannot natively travel through the IPv6
13 domain.

14 And so, the '844 solves this problem. Using '844's invention, a
15 packet from terminal 31 to terminal 21 -- we'll follow the red arrows I have
16 here, it allows the interconnecting devices between IPv4 domain 3 and IPv6
17 domain 1, to take the information from the IPv4 packet, use that information
18 to construct the IPv6 information necessary to transfer that packet to the
19 IPv6 network, and then once that packet arrives at the IPv4 network, that
20 same IPv4 information can then be extracted from the IPv6 header
21 information and the packet can go on its way to terminal 21. And this all
22 happens without having to maintain state tables between all these
23 connections -- maintaining links that are associated in IPv6 address with an
24 IPv4 address, for example. And that creates a very efficient system that
25 doesn't necessarily need all this extra overhead that we find in traditional

1 NAT tables and other forms of translation between IPv6 and IPv4.

2 So, going on to Slide 5, reflecting that inventive aspect, Claim 1 of
3 '844 specifically claims that it receives a data packet from an IPv4 domain in
4 an IPV6 domain. In other words, the packet must be going from one domain
5 to another one.

6 The reason this use of the word domain is important is because, as
7 the patent itself explains -- and I'll go to Slide 6 -- a domain is a
8 telecommunications network that's administered by an operator. So, if we
9 provide that understanding to the claims, what the '844 is saying is, we claim
10 an invention that allows an IPv4 packet to go from a network administered
11 by one operator to a network administered by another operator.

12 JUDGE WEINSCHENK: Mr. Collier?

13 MR. COLLIER: Yes.

14 JUDGE WEINSCHENK: This is Judge Weinschenk. Does that
15 sentence that you pointed to actually require that? It just means to each
16 domain, to me, needs an operator, it doesn't mean that they need to be
17 different operators. It doesn't say that.

18 MR. COLLIER: If two domains abutted each other, like in Figure
19 1 of the '844 that were not administered by separate operators, they would be
20 a single domain. To some extent, the '844 Patent actually addresses this,
21 where it makes a distinction between subnets and domains. And I think you
22 would see that in a situation, where the IPv4 network and IPv6 network are
23 both administered by the same entity. One of those two networks will be a
24 subnet of whatever the master sort of domain network is.

25 And the reason this distinction exists is, as I said, the invention

1 allows packets to go between networks that are not controlled by the same
2 entity. Because that -- and that's a unique invention. Because, traditionally,
3 if one entity controls both domains, it can control all the IP addresses within
4 that domain. The '844 says, we can use this technique that's universal and
5 doesn't require the domains to actually know every single IP address that
6 they control.

7 JUDGE WEINSCHENK: Okay, thank you.

8 MR. COLLIER: I'll skip down to our Slide 7. Just to briefly note,
9 that the extrinsic evidence actually does emphasize and highlight this
10 understanding of separate operators control a domain. I have two definitions
11 here that are in the record from Exhibits 2003 and 2004. Both recognize that
12 their domain is a computer network that's under common control.

13 Going over to Slide 8, in Petitioner's reply, they claim not to define
14 the word domain, but imply that a domain could just be any group of
15 computers that merely share something in common, and that's in the reply,
16 page 4. And I want to just briefly highlight why that doesn't make sense and
17 why domain is clearly a distinction between two groups of computers
18 operated -- controlled by separate operators.

19 If we applied that group of computers definition to Claim 1, it
20 essentially eliminates any distinction between the domain and any other type
21 of computer network. So, you would have a method of receiving a data
22 packet from IPv4 group of computers and IPv6 group of computers, right?
23 That would include an IPv4 subnet to an IPv4 domain, it could include an
24 IPv4 subnet separate to a separate IPv6 subnet, and it eliminates this word
25 domain from the claims.

1 While we're reading domain in this way, as I said, simply
2 eliminates the meaning of domain and is clearly inconsistent with the '844
3 Patent. To the extent that domain needs to be defined, it cannot be as broad
4 as the Petitioner suggested, that it's merely a group of computers.

5 Going on to Slide 10, as Your Honors are aware, this issue is
6 important with respect to all grounds, because Li does not actually describe
7 packets traveling from one domain to a separate domain, at least not as
8 Petitioner has argued Li functions.

9 Li describes a mapping scheme that allows the IPv4 end devices to
10 communicate with other IPv4 end devices across an intermediate IPv6
11 network. There are several embodiments in Li, but the two that highlight
12 that method are Figures 1 and Figures 7. Petitioner specifically focuses on
13 Li's Figure 7, primarily because it's in a section of Li that's titled Inter-
14 domain Environment. But this embodiment in Figure 7, and this annotated
15 version of it that's on Slide 10, does not actually show a packet going outside
16 of a single domain. Instead, Figure 7 follows an earlier embodiment,
17 illustrated in Figure 1, which all the parties agree expressly transmits a
18 packet within a single domain.

19 So, to highlight this on Patent Owner's Slide 10, I've annotated
20 both Figure 1 and Figure 7, and I've used the version of Figure 7 that
21 Petitioner used in the Petition. In red, I have highlighted the single domain,
22 the intra-domain in Figure 1. And as you can see in Figure 7, I've
23 highlighted that same intra-domain. Similarly, I've highlighted all the IP
24 components within that domain in Figure 1. And you'll see -- I've
25 underlined in the green, I should say. And you'll see in Figure 7, all of those

1 same IP components are existing in Figure 7.

2 JUDGE WEINSCHENK: Mr. Collier, this is Judge Weinschenk,
3 but they're different. Figure 1 refers to specifically the example you gave,
4 where it is one domain, because it's called a subnet of the backbone, and
5 Figure 7 is different, it is not a subnet, it talks about it being autonomous
6 access network. That certainly seems like a distinction to me, but it also
7 indicates in its description that those access networks are customers of the
8 provider. That sounds a lot like the description in the '844 Patent that talks
9 about how the IPv4 domain can be a private network, like a home or a
10 business, which certainly sounds like a customer of an internet provider. So,
11 these seems to line up with an inter-domain embodiment. Am I missing
12 something?

13 MR. COLLIER: So, Your Honor, I think I can answer your
14 question with my next slide, Slide 11. The fact that they're customer
15 networks does not mean they're not all in the same domain in the specific
16 context of Figure 7. Because what we explained is that these networks only
17 have access within the scope provided and controlled by the provider. Even
18 though we are using slightly different network tools to implement its
19 teachings in Figure 7, it's still all controlled by the same provider, so it's still
20 all controlled -- if I go back up to Figure 10, by AS2391, which is IPv6
21 provider.

22 JUDGE WEINSCHENK: Wouldn't that be the same way it would
23 work, for example, the way Petitioner described it, if you had -- whether it
24 be a business, like a law firm that subscribes to Verizon, wouldn't Verizon
25 still control your access to their networks even though you have a separate

1 domain for your business?

2 MR. COLLIER: In the context of Li's Figure 7, that's what Li is
3 teaching. Li is teaching that, yes, the provider is controlling all this access
4 through all these IPv4 networks within the -- connected to that backbone
5 IPv6 network. In that instance, because of how Li functions, those are all a
6 single domain.

7 And I think some of the other figures in Li actually highlight this
8 distinction. So, Li talks about an inter-domain environment, there's two
9 models. There's the first one, which is illustrated by Figure 7, which is
10 essentially a single domain that's a modified version of Figure 1. And then
11 there's the other embodiments in Figures 8, 9, and 10.

12 And if we go to Slide 13, I've got Figure 8 here annotated again
13 next to Figure 7. Once Li gets into the inter -- it self-describes it's an inter-
14 domain environment. It's not talking about going from these IPv4 customer
15 networks to the IPv6 network, it's talking about going between separate IPv6
16 provider networks, and that can be seen clearly in Figure 8. Figure 8 has, on
17 the left side, largely same network -- the same single domain as Figure 7,
18 where there's two autonomous systems connected to the IPv6 provider
19 network. That entire domain is then interconnected with a separate IPv6
20 provider network that has its own IPv4 subnet, or subdomains that
21 presumably that other provider controls.

22 And so, in a close reading of Li, I think you'll see that Li, itself, is
23 distinguishing between a domain that is all the networks connected to an
24 IPv6 divider, and a true inter-domain environment, which is IPv6 providers
25 communicating with each other outside of the domains that they have

1 control over, or even connecting over the internet, likewise, with domains
2 that they do not have control over. And that's why this idea of control is
3 important. Because even though these symptoms may change in specific
4 implementations, the idea here is that if the network and its IP access is
5 controlled by a single provider, it is a single domain. And that type of
6 system doesn't require some of the inventive aspects of the '844 Patent,
7 which allows these packets to go between networks that are not controlled
8 by a single provider and don't have access to all of the available IP addresses
9 within their domain.

10 JUDGE JURGOVAN: Counsel, I'm confused by this, because
11 why include the operator prefix at all in the IPv6 Patent if you're not going
12 intra-domain?

13 MR. COLLIER: In the '844 Patent, Your Honor, or in the art?

14 JUDGE JURGOVAN: In Wu? And Wu is including the operator
15 prefix in the IPv6 packet. So, I mean, you wouldn't do that, unless you're
16 going inter-domain with the packet.

17 MR. COLLIER: We are -- the prefix -- so, I believe that Figure 1
18 actually shows separate prefixes even within the same domain. The operator
19 prefix is not dispositive of whether a packet is going into or out of a single
20 domain.

21 We can go back up to Figure 1. I'll just use Slide 10 here. Even in
22 Figure 1, which is a single domain, Li includes separate IPv6 prefixes on
23 these packets that it's constructing, at least I -- I may be misreading it, but
24 the IPv6 address is 128 bits, so there's a significant amount of data in there
25 that needs to be occupied. I think Li probably found it simpler to just

1 include that information in the address. But of course, to add to that in Li,
2 when Li does describe the intra-domain environment, then that prefix is
3 necessary. So, it's not describing that -- it's not saying that you would
4 completely ditch its original methods once the packet leaves the domain into
5 another domain. And to avoid the problem of having to use completely
6 different systems between the two approaches, or between the two network
7 requirements, I assume that's why Li included the operator prefix within its
8 addresses.

9 JUDGE JURGOVAN: Thank you. I referred to Wu, I meant to
10 refer to Li. Yeah, sorry.

11 MR. COLLIER: All right. Thank you, Your Honor. So, in
12 Petitioner's presentation, they brought up some other arguments that they
13 contend -- explained why Li, in Figure 7, is in fact different domains
14 between the IPv4 access networks and the IPv6 access network, including
15 this concept of the BGP between the networks and some other comments
16 about similar technologies.

17 I would just want to note that Li, itself, is the one that defines what
18 it's doing. And our argument here is not based on the fact that it uses BGP
19 in certain situations. Li is explaining that this Figure 7 embodiment, and this
20 packet transmission in Figure 7, is all within a single domain.

21 If there are no other questions, I'll move on to the simultaneous
22 invention issue and briefly skip over Li-2, as I mentioned earlier. So, I'm
23 going to Patent Owner's Slide -- oops, apologize, that's the wrong slide. I'll
24 show you Patent Owner's Slide 18. I'm sorry, Your Honors, I'm just on the
25 wrong slides right now. Okay, Patent Owner's Slide 20.

1 Petitioner's argument on this issue of simultaneous invention keeps
2 changing. It feels sort of like we're whacking moles over here. As the
3 Board recognized in the Petition, the argument was that simultaneous
4 invention proved --essentially that simultaneous invention established
5 obviousness.

6 So, I'll bring up the petition at page 62. In its presentation, and to
7 some extent in the reply, the Petitioner has now argued that Huitema and
8 some of these other exhibits render these claims obviousness because they
9 describe a port number. None of that is referenced in the Petition. The
10 extent of Petitioner's motivations to combine -- motivation arguments to
11 modify Li in the petition are found right on this page 62 -- sorry, 64 of the
12 Petition, where all it says is, "go see Ground 1." Of course, if we go to
13 Ground 1, we see a very specific argument related to why a person of
14 ordinary skill would modify Li if you have Li-2.

15 Evidently, the Petitioner realized, either in the petition or in the
16 reply, that Li-2 is probably not prior art, so they tried to modify this
17 argument to now say, oh, that reference is enough to bring in Huitema and
18 bring in all these other references that are not discussed here. Those
19 arguments should be entirely rejected.

20 If we look at Petitioner's slides, they cite, for example, Exhibit
21 1030, which is Huitema, that's not cited here. They cite Exhibit 1032, which
22 is actually another Huitema document that's again not cited here, and all of
23 that argument should be disregard because none of it was in the Petition.

24 Now, going back to Slide 20, and turning to the idea of
25 simultaneous invention, in general, I want to sort of touch on how this is

1 supposed to work so we can understand why this argument needs to be
2 rejected. The law is very clear, that evidence of simultaneous invention
3 alone cannot show obviousness. It's only art -- as Your Honor said, it's only
4 evidence of what we call secondary considerations or indicia to clear non-
5 obviousness. The petition attempts to get around this limitation of
6 simultaneous invention and shoehorn an obviousness argument in there. So,
7 the petition says, we know Li doesn't have a port number, but it's sort of in
8 the art, and we don't have good prior art, so we'll look at what we're going to
9 call a simultaneous invention, which is art that post-dates the patent and say,
10 oh, look, you actually could combine Li with this sort of general knowledge
11 to include a port number.

12 The reason that simultaneous invention -- this concept is limited to
13 inventions that are actually the same invention is to avoid that problem. So,
14 if Petitioner were allowed to identify documents that it contends are similar
15 inventions and then say, oh, look, this is evidence of obviousness, even
16 though it post-dates the Patent, and even though you still have to modify
17 some other reference, that's obviousness without having to have prior art.

18 JUDGE WEINSCHENK: Mr. Collier?

19 MR. COLLIER: Yes, Your Honor.

20 JUDGE WEINSCHENK: This is Judge Weinschenk. It seems to
21 me like the analysis we have to do here is, we look at Graham Factor 2,
22 which tells us about the scope of the prior art, and here we have Li, which is
23 admittedly missing a feature. And then we have some evidence of
24 simultaneous invention under Graham Factor 4, which shows perhaps that
25 other folks later on put port numbers into these IPv6 addresses, and then

1 they're supposed to weigh those together and try to figure out if this
2 invention would have been obvious in light of weighing those factors.

3 Do you have any position on the outcome of weighing this
4 evidence against each other?

5 MR. COLLIER: Well, Your Honor, as far as whether or not there
6 is actually evidence as far as simultaneous invention goes, our position is
7 that, in fact, the evidence does not show simultaneous invention, so that
8 factor already does not support an obviousness conclusion.

9 Second --

10 JUDGE WEINSCHENK: Is there something in particular that's
11 missing from the inventions that they rely on?

12 MR. COLLIER: There is, Your Honor. So, I have a little
13 summary here on Slide 21. In the Petition, Petitioner -- so, I'll start with the
14 IVI references. In the Petition, the Petitioner didn't actually address the IVI
15 references in any meaningful way. So, if we go back to the Petition, you can
16 see, on page 64 and some extent on 63, they've included this figure from the
17 Bush references that they like to use, but otherwise there's no meaningful
18 discussion of the references, and particularly not the IVI references. So, at
19 least from a procedural standpoint, there really isn't any evidence that the
20 IVI references disclose the invention at all.

21 But going back to my slides, in the reply, the Petitioner only
22 addressed slides -- I'm sorry, only just Claims 1 and 3, with respect to the
23 IVI references, and as we explained in our reply, our position is that those
24 don't -- at least what Petitioner's pointed to, doesn't appear to disclose the
25 claimed destination port number. And I'll note that on those references, Li-2

1 is actually included as an IVI reference, and if Li-2 were actually
2 anticipatory -- if it were the same invention, the Petitioner would have used
3 it as a one of two reference, which they didn't do.

4 For the Bush references, it's -- similarly, the argument in the
5 petition is basically non-existent. The argument in the reply is pretty
6 cursory, but Bush affirmatively does not include a destination port number.

7 So, if I go to -- I'll go to the Bush slides, or the Bush presentation.
8 Petitioner points to this slide that describes encapsulating IPv6 packet -- or
9 encapsulating an IPv4 packet and an IPv6 packet. And as you've seen in
10 their presentation in the Petition, they highlight this section discussing the
11 destination address, and it says, "this WPK+ destination," and then it says,
12 "but note the destination is A+P."

13 Petitioners pointed to that, that A+P and said, "oh the
14 construction -- the constructed destination address must include a port
15 number." But that A+P is actually just an IPv4 address, it does not include a
16 port number.

17 So, if I go up a few slides to the same reference, which is Exhibit
18 1041 on page 19 of that exhibit, it earlier talks about a border relay
19 generating an IPv4 packet. In that packet, this first address is this A+P
20 address. And since it's an IPv4 address, that can only be an IPv4 -- so
21 they're addressing the packet is an IPv4 address, that number that comprises
22 the IPv4 address, has to be also an IPv4 address. There's nowhere in an IPv4
23 address to insert a port number.

24 This Bush reference is -- when it's talking about A+P, it's actually
25 talking about another reference, which is the Bush -- I forget what Petitioner

1 calls it, but it's Exhibit 1029. And it describes, what I'll highlight here on its
2 page 2, what it calls extended addressing, or A+P. What this document
3 explains is that A+P uses port numbers in IPv4 packets, effectively, in place
4 of additional bits in IPv4 address, but the A+P address, itself, is still an IPv4
5 address. They're just using the port field of a particular UDP packet in a
6 slightly different way that allows them essentially to port multiplex -- to use
7 IPv4 address with multiple devices and distinguish those devices with a port
8 number.

9 So, to come back to your question in our argument, it's twofold.
10 One, the references simply don't disclose the invention, and two, they
11 weren't properly raised in the first instance, and it's an improper use of
12 simultaneous invention anyway.

13 I'll go back to my slides, Your Honor. Your Honor, I believe your
14 question sort of short-circuited the rest of my discussion on that issue, so if
15 there's no additional questions, I will move onto the Wu issue in Ground 3.

16 JUDGE WEINSCHENK: That's fine with me.

17 MR. COLLIER: I would like to address one issue here. In
18 Petitioner's presentation, as I noted, they relied specifically on Exhibit 1030,
19 this Huitema document, in addition to some other documents. And we do
20 object to their use of that in the slides since it was not used in the petition -- I
21 believe it wasn't even used in the reply, so we object to the use of that to
22 modify their arguments now.

23 JUDGE WEINSCHENK: Thank you. Your objection is noted.

24 MR. COLLIER: So, turning to Ground 3 in Li and Wu, the issue
25 here isn't so much that Wu -- whether or not Wu includes a port number,

1 which our position is, and the evidence cited in the petition in their reply,
2 Wu actually does not disclose the claimed port number, but the
3 (CROSSTALK) --

4 JUDGE WEINSCHENK: Can you actually -- if you're going to
5 skip over that, I'd actually like to talk about that. Can you explain to me
6 your argument as to why that address doesn't include a port number?

7 MR. COLLIER: Yes, Your Honor. So, let me bring up Wu itself.
8 The reply relies specifically on Figure 11 in Wu, and Figure 11 is found on
9 Exhibit 1039, page 12. It illustrates a packet going from an IPv4 node
10 through an IPv -- I'm sorry, a packet goes from an IPv6 node to an IPv4,
11 through the IPv4 internet and then to client end, and then responds to the
12 client end, you know, sends a packet back.

13 The entire discussion of Figure 11 is found at the very end of the
14 body of Wu on page 15 and over into page 16. Wu essentially makes
15 several errors with how it's talking about the port number that make it
16 basically unknowable as to how it's being used. And then, and it seems to
17 say that, in fact, the port number is not used in the actual embodiment that
18 Petitioner seems to be pointing to.

19 So, the initial transmission in Figure 11 goes from an IPv6 network
20 to an IPv4 network, which is already not the same thing as, for example,
21 Claim 1. That packet includes what Wu calls a Silkroad address that it
22 discusses earlier, and I'll go into, and sends that packet to the IPv4 network.
23 Within that IPv4 network, Wu says the server extracts various information
24 from the IPv6 destination address. So, it says it, "extracts the external
25 address and the external port from the destination IPv6 address, encapsulates

1 that data in a UDP protocol packet," so, it transforms it essentially into an
2 IPv4 packet. In that IPv4 packet, the source address is the public IPv4
3 address of the server. The destination address is the extracted destination
4 address. The source port is 5188, and in the source, the destination port is
5 the extracted external address.

6 Now, I understand the Petitioner has said, oh, this is clearly an
7 error. But the reason it's not clear what this error means is, if we go on,
8 when Wu actually sends a packet from an IPv4 network worth to the IPv6
9 network, which is discussed in these next steps, where the client end is
10 communicating, they're -- the port numbers are actually different than the
11 packet that went outbound.

12 So, we have, in this particular step, the source port is 5188, which
13 is not apparently the destination port of the original packet. So, at some
14 point Wu is actually changing what number it's using as the source and
15 destination port number, and this 5188, I think, is just a generic UDP port
16 number.

17 There's other instances in the teachings of Wu where it does the
18 same thing, where a packet may go out with one number and then in reverse
19 it might have the 5188 number. And the petition isn't made clear at all
20 which of these steps is actually the step it thinks discloses the claimed
21 destination port number. Because it's not just that there's a destination port
22 number, it's that there's an IPv6 address constructed with that number, and of
23 course that number, is later -- in other claims is extracted from an IPv6
24 address. And so, simply saying port numbers exist or port numbers could be
25 included in IPv6 addresses somehow, doesn't really answer what's missing

1 from the claims and from Wu.

2 And so, I'll actually go back up to Wu's discussion of the pseudo
3 external port. This also highlights this problem. So, first, if we look at
4 Figure 1, this is Wu's constructed IPv6 address, and as you'll see it's got an
5 IPv6 prefix, a pseudo external port number, a pseudo external address. Wu
6 discusses each of these, in turn, further up in its disclosure, so if you'll bear
7 with me while I scroll up there.

8 On page 11, Wu explains what it believes its pseudo external port
9 is, and it claims to be the external port, which is a NAT-mapped port, and
10 this hex number 0xFFFF, which I believe is just 16 -- in decimal would be --
11 I'm sorry, in binary would be just 16 ones and/or the subsequent 16-bit
12 numerical value. It also then discusses this maintaining initialization, which
13 I'll touch on in a minute, but what's not clear is what exactly this number is.

14 So, a person of ordinary skill would look at this and say, well, is
15 Wu combining the external port number with this hex number? If so, what
16 function are they using? Because if they use a traditional and function, you
17 end up with just the port number. But they claim there's some other number
18 that results with no explanation of how it's obtained. And this ambiguity and
19 confusion, combined with the ambiguity later of using an external address
20 instead of a port, all highlights why a person of skill would never to look Wu
21 if they're trying to modify Li.

22 So, let me step back, if I may, to sort of the beginning of Wu and
23 my argument here. Wu and Li -- sorry, Your Honor, Wu and Li are
24 effectively dealing with opposite problems. So, Wu has this Silkroad
25 solution that they've created. The solution is to this problem of

1 communicating across an IPv4 network, particularly the IPv4 internet,
2 between two clients that are IPv6 capable. Wu has several embodiments
3 describing this but the general one is Figure 4, which I've included here.
4 The idea in Wu is that you'll take an IPv6 packet, you can encapsulate in an
5 IPv4 packet, and you can send it on to its destination where it'll be de-
6 encapsulated and transmitted as an IPv6 packet. But the main problem that
7 Wu is concerned is it not such much the idea of encapsulation, it's this issue
8 of how you deal with the NAT devices and NAT tables that are on this
9 network.

10 So, traditionally, a device cannot communicate with public internet
11 using a native IPv4 address. You have to use, traditionally, a technique
12 called network address translation, which translates a private IPv4 address to
13 a public one. This creates problems when two devices are trying to
14 communicate with each other directly, when they both have to navigate all
15 these different NAT devices on the way there.

16 And so, what Wu talks about -- and I'll go to the next slide here, is
17 in order to keep these connections open, we are going to initialize and then
18 maintain a NAT table at the various NAT devices that include the
19 information we need to transmit the packet and maintain this Silkroad
20 tunnel.

21 And so, Wu will, when beginning communications, will send a
22 non-data packet, a packet that's just an IPv4 header, a UDP header, and IPv6
23 header, as I have on Slide 24 shown in Figure 3 from Wu, it'll send that
24 packet to the NAT devices, periodically, to make sure that these states
25 associating the IPv4 addresses and the IPv6 addresses are essentially

1 permanently maintained. This is the exact opposite of what Li is trying to
2 do. Wu is not doing this to assign the client device an IP address, Wu is
3 saying these NAT devices have to know what these connections are at all
4 times.

5 Li does the opposite. Li says, we -- sorry, Your Honor -- Li says,
6 we have a method that does not require state tables. These packets can be
7 transmitted without doing all this overhead. And so -- and, of course, in Li,
8 the packets are going from the reverse network situation, they're going from
9 IPv4 to IPv6, which is an entirely different problem. So, if you were a
10 person of skill, and you're looking at Li, and you're trying to improve upon
11 it, you would never --

12 JUDGE WEINSCHENK: Mr. Collier?

13 MR. COLLIER: Yes.

14 JUDGE WEINSCHENK: I don't mean to interrupt, but I don't
15 want to lose the point here. Can you explain to me why, and maybe this is
16 jumping ahead, why the direction that you're going, whether it's IPv6 to IPv4
17 or vice versa is a different problem, because I know you've argued that in
18 your papers, but I'm not sure I grasp why it's so different.

19 MR. COLLIER: So, the nature of the IP addresses creates
20 different problems. In IPv4, the best way to think about it is that the data in
21 the header -- so, the IPv4 address, and if you choose to use it, the port
22 information that's in the UDP header is essentially all taken, it's all occupied.
23 That's the reason IPv6 exists is, they ran out -- we have run out of IPv4
24 addresses. IPv6, the header is 128 bits, which allows some massive
25 number -- I don't remember off the top of my head, but a massive number of

1 IPv6 addresses. The result is that if you want to do what, say, the '844
2 invention does or what Li does, you can actually use that header and fill it
3 with all sorts of information because there's extra space in it. So, if you're
4 taking an -- so, what the two inventions do, Li and certainly the '844 is, they
5 take advantage of that difference.

6 The other problem is that these packets are different sizes. So,
7 once you -- if you go from IPv6 to IPv4, it's easier to contain all the
8 information of an IPv4 packet within an IPv6 packet than it is in reverse.

9 And another common challenge is that -- well, I suppose another
10 major difference is, one that Wu actually harps on, a lot of IPv6 devices are
11 capable of operating both IPv4 and IPv6, so Wu has specifically client nodes
12 that are both 6 and 4. Those devices won't have any issues communicating
13 between the two systems. A pure IPv4 device will not be able to
14 communicate with an IPv6 device unless you basically make it IPv6 capable.

15 So, in the 4-to-6 direction, you have to sort of hide an IPv6 packet
16 within an IPv4 packet, but in the 6-to-4 direction, you can turn an IPv4
17 packet into an IPv6 packet. And because of that difference, you see different
18 solutions and inventions between Li and Wu, for example. And it's why, as
19 I've said, a person of skill wouldn't actually look to Wu if they're trying to
20 modify Li because you're just dealing with an entirely different IP challenge.

21 JUDGE WEINSCHENK: Thank you. And just so you know, you
22 have about two minutes remaining before you go into your rebuttal time.

23 MR. COLLIER: Thank you, Your Honor. Yeah, I think I've
24 touched on most of the points I want to make with Wu. As I said, this
25 difference between stateful and stateless I think is pretty clear, once we

1 understand what Wu is trying to do. And this combination of a different
2 challenge, a different stateful/stateless environment, and quite frankly, not
3 clearly describing how the port number is used, all indicate that a person of
4 skill simply would not look to Wu when modifying Li.

5 I will just very briefly touch, Your Honor, on this Li-2 issue. Let
6 me find my slide, one moment. And I understand that I'm running into my
7 rebuttal time.

8 JUDGE WEINSCHENK: And that's fine, you can do that. I'll just
9 keep track of it for you.

10 MR. COLLIER: Yes, thank you, Your Honor. I think the most
11 straightforward way to think about this issue on Li-2 is that it was never
12 really catalogued. So, Li-2 ended up in this staging folder that included at
13 least 900 other documents with debatably readable file names. But that is
14 essentially -- the file names, is essentially the only information someone
15 would have had to be able to try and locate Li-2.

16 The IETF -- the sort of IETF search tool that, I think the Petitioner
17 highlighted on one of its slides -- and I apologize I don't have it on my
18 slide -- I'll go to Petitioner's Slide 74 just to highlight this image. So, this
19 IETF data tracker doesn't actually include any indexing information, so you
20 can't search by author name, you can't search by keyword. There's some
21 dropdown menus that could be helpful if you know the state of the
22 document. You know, you could search by RFC number if you already
23 knew it, you could search by working group if you already knew it, but you
24 can't do the traditional catalogue search through for a file name -- search
25 through a name, search for a topic, or search for an author.

1 The analogy I came up with for this, Your Honors, is the
2 traditional example of public availability is there's something in a library in
3 the card catalogue, it's been indexed, you can find it. Li-2 was dumped
4 basically in the shredder pile. It happened to sit there for a while, but it was
5 never indexed, it was never searchable, it was never published. There's no
6 documents that show anyone ever knew about it, and even in emails we do
7 have distributing other documents from the staging folder actually linked to
8 specific documents, not to the folder itself.

9 And as we explained in our brief, there's a lot of other issues with
10 that folder, whether it was even accessible during this time period, and I'll
11 primarily rest on those. But I think this catalogue issue, probably by itself,
12 shows that Li-2 simply was not publicly available and is not prior art.

13 And so, with that, Your Honors, if there's no further questions, I'll
14 reserve the rest of my time for rebuttal.

15 JUDGE WEINSCHENK: All right, nothing from me. You'll have
16 13 minutes for your rebuttal.

17 MR. COLLIER: Thank you, Your Honor.

18 JUDGE WEINSCHENK: All right, Mr. Sabbagh, whenever you're
19 ready, you have 18 minutes --

20 MR. SABBAGH: Thank you.

21 JUDGE WEINSCHENK: -- for your rebuttal time.

22 MR. SABBAGH: Thank you, Your Honor.

23 JUDGE WEINSCHENK: I do want to actually direct you to
24 something that I want to ask you about. I know I don't want to put you too
25 much out of order here, but since we kind of ended on Wu with Mr. Collier,

1 maybe we could start there and I can ask you a question about it.

2 MR. SABBAGH: Sure, that sounds great.

3 JUDGE WEINSCHENK: So, if you look at Figure 1 of Wu, and I
4 believe this is what you relied on in the Petition when you pointed to the
5 pseudo external port as teaching the destination port of the claims, can you
6 explain to me what happens to this packet that's shown in Figure 1, like in
7 terms of some of the other figures that show sort of the IPv4 and IPv6
8 networks, where does this packet end up going?

9 MR. SABBAGH: Yes, Your Honor. So, if you look at -- I can
10 talk about Figure 10 since that's discussed in our, I think, reply brief. You
11 have, in Figure 10, I believe, one client node that implements this Silkroad
12 address, and that's labeled client end, and then you have an IPv6 node on the
13 other end of the network that is not a Silkroad client. So, the client end
14 sends an ordinary IPv4 data packet to a Silkroad server, and the Silkroad
15 server will construct this IPv6 address that's shown in Figure 1 of Wu and
16 then send it off to the IPv6 node at the other end of the network. And then
17 on the way back, the IPv6 node is sending back an IPv6 packet that includes
18 that Figure 1 address as the destination address, and the Silkroad sever
19 subsequently extracts the information from there, constructs an IPv4 address
20 and sends it back to the client end.

21 JUDGE WEINSCHENK: So, it's your position that the packet
22 shown in Figure 1 is the thing that's transmitted on -- I guess it's line 3 in
23 Figure 10. Is that what you're telling me?

24 MR. SABBAGH: Yes, I believe -- yes, that's correct. That's the
25 address for the packet that would be sent there.

1 JUDGE WEINSCHENK: Okay.

2 MR. SABBAGH: And again, Wu explains that when the server is
3 doing this construction and de-construction process to convert an IPv6
4 packet to an IPv4 packet and vice versa, it's doing it on the fly, it's doing it
5 dynamically. It never queries the NAT to receive information -- state
6 information. Our position is that although Patent Owner's argument might
7 appear convincing at first on its face, because it's a very technical argument,
8 it ultimately is incorrect about what Wu teaches. And what's relevant here
9 about Wu, as to the '844 claims, is the address construction process, and
10 when Wu is constructing an address, it does not rely on state, that process is
11 totally stateless.

12 And just a few things I wanted to note about Wu is that, Patent
13 Owner talks about this typo issue in Wu and how in Wu it says the
14 destination port is an external address. I want to note that even though
15 Petitioner talked about this port being a destination port in the Petition,
16 Patent Owner did not make this argument until surreply, and we believe that
17 for that reason that argument is untimely because it didn't afford Petitioner
18 an opportunity to respond. It's also not based on expert testimony as a result,
19 so this is unsupported attorney argument that a POSITA would not
20 understand Wu based on this typo. And, in fact, Petitioner's expert, in his
21 rely declaration, paragraph -- I believe on paragraph 72, footnote 2,
22 explained that a POSITA would have recognized this to be a clerical error
23 and would not have been confused by this typo. So, the only evidence about
24 whether this typo would have confused a POSITA or would not have
25 confused a POSITA is in Petitioner's expert declaration and Patent Owner's

1 argument is merely unsupported attorney argument that does not rely on any
2 expert explaining why this would be confusing.

3 The only other points I wanted to address were as to Ground 2,
4 which is Li alone, unless Your Honors have further questions about the
5 combination of Li and Wu.

6 If not, then I will turn to Patent Owner's Slide 21, where Patent
7 Owner made this argument that the simultaneous invention references do not
8 teach port numbers. And again, I don't want to harp on this point too much,
9 but this is a new argument that was made in surreply.

10 Petitioner explained at -- I believe, Petition page 63 to 64, why
11 both Bush and the IVI references teach port numbers, and Patent Owner
12 never disputed that argument in its Patent Owner response. It instead waited
13 until surreply to raise this purported issue about whether Bush teaches port
14 numbers or whether it teaches something else. So, again, we believe that's
15 improper. We believe it's not supported by expert testimony, it's
16 unsupported attorney argument, and it should not be considered for that
17 reason.

18 What I will note as well is, that Patent Owner focuses exclusively
19 on Bush here to argue that Bush does not teach port numbers. Patent Owner
20 does not assert that the IVI references do not teach port numbers. And if
21 you look at Exhibit 1028 at 22, that is also, I believe, depicted on Petition,
22 page 24. That's a slide from the IVI references that we believe, clear as day,
23 showed that the port number is being included in the IPv6 packet and IPv6
24 address.

25 The final two points that I want to address is this argument from

1 Patent Owner that Petitioner's point on Ground 2 keeps changing, and it's
2 like playing -- I think Patent Owner said, Whack-a-Mole. We discussed this
3 earlier, and I recognize Your Honors' opinions and points on this, but I do
4 believe that our petition was quite clear that we were relying on this
5 common knowledge in the art. So, in my prior argument, I pointed Your
6 Honors to Petition, page 62, that mentions that this ground is based on
7 common knowledge in the art. I pointed out that the motivations to combine
8 refer back to the motivations articulated in Ground 1, and those motivations
9 identified the common knowledge in the art.

10 And I also want to note that when Petitioner was discussing
11 motivations, it also cited to its expert declaration, at paragraph 172, that's
12 Exhibit number 1003, and in paragraph 172, Petitioner's expert also says
13 that, "Teachings in the art, as well as common knowledge in the art, would
14 have encouraged a POSITA to further concatenate the destination port
15 number to the constructed IPv6 number." So, we believe that this was not a
16 surprise, it was sufficiently disclosed in our Petition, and it's been our
17 position throughout this IPR. Petitioner's arguments have not changed in
18 that regard.

19 And then, finally I wanted to respond to Petitioner's objection to
20 Huitema, where Petitioner said this was never referenced in the petition and
21 it's a new reference. On page 8 of the Petition, when Petitioner is walking
22 through the state of the art and common knowledge in the art, Petitioner
23 cites to its expert declaration, and it explains in a parenthetical that the
24 expert further describes in his declaration how Exhibits 1026 to 1032
25 support this point, and Huitema is within that range, it is Exhibit number

1 1030.

2 So, I think that these are all really kind of procedural points about
3 which evidence should or should not be considered. We, obviously,
4 disagree with Patent Owner's argument. We think the record is clear, and
5 the record is permissible in view of this evidence.

6 And then, on the substantive points, I think I've made my
7 arguments sufficiently clear here today, and I think they're briefed well in
8 the briefs as well, so, I won't rehash any points or spend any time there
9 unless Your Honors have any questions about anything in particular.

10 JUDGE WEINSCHENK: All right, thank you, Mr. Sabbagh.

11 MR. SABBAGH: Thank you.

12 JUDGE WEINSCHENK: Mr. Collier, whenever you're ready.
13 You have 13 minutes.

14 MR. COLLIER: Thank you, Your Honor. Respectfully, I think
15 my colleague's rebuttal highlights the problem that exists in the petition and
16 exists in all of the arguments that the Petitioner is advancing.

17 You know, Petitioner keeps changing what they're arguing. We
18 have not had a full opportunity to really respond to an argument. For
19 example, in the simultaneous invention issue in Ground 2, the Petition never
20 explains in any detail how these IVI references and the Bush references are
21 the same invention. They never cite the Huitema reference in Ground 2.
22 They claim we can look at a huge range of expert declaration paragraphs and
23 find their argument somewhere in there. Similarly on Wu, Figure 10 was
24 never cited in the reply. Figure 11 was never cited until the reply. And all
25 these arguments are -- they're simply not raised in the Petition.

1 In addition to the points I made earlier, we have argued in the
2 response of surreply, these new arguments are completely improper and they
3 should not be considered. And so, for those reasons, we respectfully ask that
4 the Board affirm that the '844 Patent is patentable. But in addition to the
5 other meritorious grounds I articulated earlier, we think Petitioner's position
6 should be rejected. And if there's no further questions, that's all I have, Your
7 Honor.

8 JUDGE WEINSCHENK: Okay. Thank you, Mr. Collier. Before
9 we adjourn here, I've do have one more question for both parties. I'll give
10 you both a chance to answer this. I'm just curious -- I'm not sure if you are
11 counsel in the co-pending District Court litigation, but Mr. Sabbagh first, is
12 there anything we need to know about that pending litigation or anything
13 you could share that would impact this case here?

14 MR. SABBAGH: Sorry, in the District Court litigation, Your
15 Honor?

16 JUDGE WEINSCHENK: Correct.

17 MR. SABBAGH: No, the District Court litigation is currently
18 stayed, pending full resolution of the IPR, so nothing has gone on in there
19 yet.

20 JUDGE WEINSCHENK: Okay. Mr. Collier, is that your
21 understanding as well?

22 MR. COLLIER: Yes, that's right, Your Honor, it was stayed in a
23 relatively early stage, and I can't think of anything that would be relevant to
24 the conclusion of this IPR pending in that litigation.

25 JUDGE WEINSCHENK: Okay, thank you. All right. Well, I

1 thank you both for your presentations today. As always, it's very helpful to
2 us. We appreciate all the time and effort that you put into preparing for this
3 argument and answering all of our questions.

4 I will ask if counsel can stay on the line for a few minutes here and
5 see if the court reporter has any questions about spellings, that would be
6 great.

7 Before we adjourn, any questions or any other issues we need to
8 address, Mr. Sabbagh?

9 MR. SABBAGH: No, nothing from Petitioner, thank you.

10 JUDGE WEINSCHENK: All right, anything from you, Mr.
11 Collier?

12 MR. COLLIER: Nothing from Patent Owner, thank you.

13 JUDGE WEINSCHENK: All right. Well, thank you both, we are
14 adjourned.

15 (Whereupon, the above-entitled matter went off the record at 3:40
16 p.m.)

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