

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

ORCKIT CORPORATION,
Patent Owner.

IPR2023-00714
Patent 6,680,904 B1

Record of Oral Hearing
Held: July 9, 2024

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

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

2:17 p.m.

JUDGE DOUGAL: Good afternoon or potentially good morning, depending on where you are at. I apologize for the delay again. I don't know what's going on, but it's something in the water.

So we are here for IPR 2023-00714 in Cisco Systems v. Orckit Corporation. I'm Judge Dougal, and I have with me Judge Droesch and Judge Engels. We will start with Petitioner.

Who do we have for Petitioner today?

MR. HA: Hello. This is Yung-Hoon Ha for Petitioner.

JUDGE DOUGAL: Okay. Great.

And for Patent Owner?

MR. YANG: Good afternoon, Your Honors. It's great to see you again. This is Mitch Yang on behalf of Patent Owner and with me is George Stampatopoulos who will be presenting.

JUDGE DOUGAL: All right. Thank you.

So, before we begin, I'll go through a few reminders. I know you're mostly aware of these issues, but let's see. So just a reminder that we're all virtual here, that we have the entire record before us. We have both parties' demonstratives. Please be clear and explicit when citing to the demonstratives or an exhibit. Also, please pause and give us a moment to find the document you were discussing.

We have 60 minutes of argument time per side. Rebuttal time, I'll let you reserve in a minute. Concerning objections, we ask that you not

1 interrupt the other party during their presentation, that you save any
2 objections until your presentation.

3 All right. Petitioner, would you like to reserve any time for rebuttal?

4 MR. HA: Yes, Your Honor. Maybe about 15 minutes or so.

5 JUDGE DOUGAL: Okay. And Patent Owner, would you like to
6 reserve some time?

7 MR. STAMPATOPOULOS: Yes, Your Honor. Twenty minutes.

8 JUDGE DOUGAL: Okay. Does either party have any questions
9 before we begin?

10 MR. HA: Yes, Your Honor. May I share my slides as part of the
11 presentation? I know you have the demonstratives, but it'd be helpful to be
12 able to kind of point to what I'm actually talking about as well.

13 JUDGE DOUGAL: I believe you can. Do you want to just try
14 right -- oh, yep. Great. It's already working, so that's great. So whenever
15 you're ready, go ahead.

16 PETITIONER OPENING ARGUMENT

17 MR. HA: Great. Thank you so much, Your Honors. Good afternoon,
18 Your Honors. I'll try to spend just a few minutes on the overview of the '904
19 patent first, and then jump right into the grounds and disputed issues for my
20 opening presentation.

21 So, turning to slide 3, the '904 patent is directed to a pretty simple
22 network access system. And as you can see here, it has two mutually linked
23 master units: one which is the active master unit that'd be colored here in
24 red, and the standby master unit, which we colored here in pink. And those
25 master units are now connected to a series of slave units where in Figure 3 of

1 the '904 patent you see three different daisy chain of slave units. And each
2 of these slave units additionally has these different subscriber ports that go
3 to the respective subscriber locations. So a pretty simple system.

4 Now, the '904 patent has about six different independent claims. And
5 for this presentation, I'm going to provide just three representative claims:
6 Claims 1, 9, and 14.

7 I'm on slide 4 now. Claim 1 is basically what you see here, what I just
8 talked about regarding Figure 3, so I'll skip that real quick.

9 If you look at Claim 9, it adds in some additional features such as this
10 switch and pre-switch components that are found in the master units. And
11 basically, you know, as claimed, the switch is routing the data packets along
12 a daisy chain, whereas the pre-switch kicks in when a fault occurs in one of
13 these daisy chains to be able to reroute the data to another daisy chain.

14 Turning to slide 6, Claim 14 also claims that these pre-switches and
15 switches, but not for the master units but for the slave units. And
16 additionally, it's a little bit different from Claims 1 and 9 because here, it's
17 only talking about one master unit, not two master units as before.

18 So the point I'm trying to get at with these three illustrative claims is
19 that there are a varying degree of claim scope depending on the particular
20 claims that you're looking at. But the -- all of these claim limitations are
21 generally taught in our primary reference, called Vink, with a few minor
22 exceptions. And so, we presented two grounds to kind of fill some of those
23 minor holes.

24 So I'm now on slide 8. Ground 1 involves Vink with another
25 secondary reference called Patrick. And Ground 2, we added in yet another

1 additional teaching from the applicant admitted prior art, which we've
2 labeled as AAPA. So those are really the two grounds. And so, I wanted to
3 provide just a little bit of background about the Vink and the Patrick and the
4 AAPA, then jump right into the grounds.

5 So, starting with the Vink, as you can see here, on slide 9, Vink has
6 two master units, one which I've colored in red here again and pink here
7 again, which are also connected by a series of slave units, which we've
8 colored here in green.

9 And Vink also additionally discloses these components that are found
10 inside the master unit as well as the slave units that map onto the switches
11 and the pre-switches that we just talked about in each of the masters and the
12 pre-switches. And we'll get into some of those issues further on down the
13 road as well.

14 Now, Vink doesn't actually show maybe two things -- two, three
15 things. One, we have a master unit that is not connected to an external
16 network like the '904 patent showed. We also don't see multiple daisy
17 chains, but both of those are very well known.

18 And so, Patrick is a prime example of that. We've got a primary
19 station, which is -- that corresponds to the master that connects to an
20 external network here. And although, in Figure 1 of Patrick, it's -- you
21 know, you only see one master unit, Patrick specifically says more than one
22 primary stations or masters can be used. And on top of that, you've got these
23 masters that are connected to, say, two different daisy chains of secondary
24 stations or slave units.

1 And in fact, a lot of this is admitted by the applicant as well, which is
2 why we relied on the applicant admitted prior art. You see two master units
3 connected to an external network, where these master units are connected to
4 a series of slave units further below it as well.

5 And so, of course, this is sort of a high-level overview, and we relied
6 on some additional details in the teachings of each of these references, but at
7 a high level, this is how all of these references fit together at a high level.

8 So, with that short introduction, let me jump directly into the disputed
9 issues. So, now, I'm on slide 13. In the Patent Owner's response, or POR,
10 Patent Owner raised eight separate issues.

11 And based on Patent Owner's demonstrative, it appears to me that the
12 Patent Owners may be covering just the first two disputed issues today, but
13 I'm actually planning to cover six out of the eight in the interest of time.
14 Mainly because for Claims 8 and 20, when we pointed out that Patent
15 Owner's expert conceded during the deposition that he was reading these
16 claims incorrectly, they seemed to have dropped those two arguments in the
17 surreply. So I'll let the record speak for itself for those, but I'll cover the
18 remaining six disputed issues today.

19 Okay. So, jumping right into the first disputed issue, this issue has to
20 do with the claim term subscriber lines, and this term is actually found in all
21 of the challenged claims. Slide 15, I've provided Claim 1 and shown where
22 this term subscriber line appears, but the bottom line here is Patent Owner is
23 proposing a construction for this term to mean communication lines to users
24 of subscription-based network services.

1 And I apologize for not including these additional two lines right
2 below here on POR at page 20, but Patent Owner's basic argument is that
3 this proposed construction reflects the plain and ordinary meaning. We
4 submit that plain and ordinary meaning isn't so limited, right?

5 What the Patent Owner is actually trying to do here is, if you look at
6 the briefing, their briefing, as alleged support for this particular proposed
7 construction, is to rely on a preferred embodiment of the '904 patents. And
8 so, basically, in other words, what they're asking Your Honors to do is read
9 in the claim term, the preferred embodiment, which is improper.

10 And our position is that under the plain and ordinary meaning, it's just
11 some lines that goes towards users or subscribers under the plain and
12 ordinary meaning. Vink actually teaches the connections, right, to
13 subscriber lines because Vink is actually teaching that these I/O modules in
14 the slave units has connections to other devices through which data flows.

15 But you know, kind of setting that aside, as you see here on the
16 bottom of slide 16, Patent Owner's argument, even for this proposed
17 construction, is only applicable to Vink. As they say, in contrast to the
18 claims in the '904, Vink -- not our proposed grounds, which is Vink
19 combined with Patrick, or Vink with Patrick and the AAPA -- they say Vink
20 alone does not teach subscriber lines.

21 Onto slide 17, right? Our petition actually relied on the additional
22 teachings in Patrick and AAPA to establish that various devices that are
23 connected to Vink's I/O modules could be, in Patrick's scenario, subscriber
24 access units, or in the case of AAPA, it serves respective subscriber

1 premises via suitable DSL modems. So, both of these teachings in Patrick
2 and AAPA actually meet Patent Owner's proposed construction.

3 So our position here is that no construction is actually needed for this
4 term subscriber lines, and our petition, as shown here on slide 18,
5 demonstrated that this would have been basically a trivial modification to
6 combine the teachings of Vink with Patrick and the AAPA because all this
7 involves is using ports to connect different devices so that a subscriber can
8 use them. So that's the position here.

9 Now, turning to slide 19, I wanted to address the argument that they
10 included in the surreply at this point. So they argue in their surreply that a
11 POSITA would not have combined Vink with Patrick and AAPA because
12 doing so would provide Vink direct access to an external network such that
13 our other proffered modification of Vink, which I'll actually talk about in the
14 next disputed issue section, which is to connect Vink to an external network,
15 right -- Vink's masters to an external network, they're saying that would not
16 have been needed if we actually put DSL modems into the slave units.

17 But that argument doesn't really make any sense because AAPA did
18 exactly that, right? You've got subscriber lines, which I've already
19 established. You know, things like a DSL modem could be connected to
20 here -- connected to a slave. A slave is then connected to this master, and
21 this master is then connected to a core network or an external network. And
22 so, the AAPA is actually teaching exactly the modification that we're
23 proposing in the -- in our grounds, Grounds 1 and 2.

24 And so, you know, quite frankly, this is just a design implementation
25 of how to gain access to these external networks through a series of masters

1 and slave units at the subscriber location. And we don't really see much
2 merit in Patent Owner's argument on this one.

3 So, unless the Board has some questions on that, I will move on to
4 disputed issue number two.

5 So disputed issue number two deals with all of the claims as well, and
6 the limitation at hand is this term called first and second master units, each
7 comprising a physical interface to a packet-switched network.

8 Now, just at a high level, this is similar to their subscriber lines
9 argument. Patent Owner wants to limit the scope of the claims further.
10 How? Not by even trying to do a construction but asking Your Honors to
11 add in words that are not recited in the claims. What are the words that
12 they're trying to add? Well, they're trying to add in the word external or core
13 to this packet-switched network. That, again, is not proper.

14 And how do they try to do this? Well, they again rely on this
15 preferred embodiment of the invention, which they say is something called a
16 multi-shelf access system. And they say because it's a multi-shelf access
17 system, a POSA would understand that this multi-shelf access system with
18 masters is used to provide subscribers with access to a core network or an
19 external network. And they say there is no other disclosed embodiments that
20 don't provide access to the core network. Well, let me address a couple of
21 these one by one.

22 Multi-shelf access system, it's a little bit puzzling to me why they're
23 hanging their hat on this because if you look at column 1, line 48 of the '904
24 patent, it specifically says the reason for the term multi-shelf is because each
25 slave unit occupies its own shelf in an electronic rack. It's got nothing to do

1 with whether masters accesses an external network or not. This term multi-
2 shelf has to do with the fact that they're sitting on different shelves of an
3 electronic rack -- the slave units are sitting on different shelves of an
4 electronic rack.

5 JUDGE DOUGAL: Counsel?

6 MR. HA: Yes, Your Honor?

7 JUDGE DOUGAL: Does this even matter? I mean, in your petition,
8 isn't -- are you arguing about how Patrick and AAPA teaches that you'd
9 connect to an external network?

10 MR. HA: So, yes, Your Honor, but I -- so we actually did a belt and
11 suspenders approach in our petition. And I'll try to explain why that's the
12 case.

13 So this is from -- so I'm now on slide 26. And we first started -- and
14 I'm showing here a screenshot of the petition, starting on, I think, page 24.
15 And we started by saying that the two masters and the plurality of slave units
16 exchange data packets via transmission lines. And you know, that portion
17 corresponds to this physical interface to a packet-switched network, right?
18 We've got data packets being exchanged to this network, through this
19 internal network, through these transmission lines. So, for example, this line
20 or components between master unit 1 and the slave unit 2 would have some
21 sort of physical interface.

22 And so, they now make the argument that, well, that can't be true
23 because if you look at the claims -- remaining portion of Claim 1, you've got
24 physical interface lines that connect the different masters to the slaves, and
25 the slaves to the slaves, and so forth.

1 But our position here is that this term physical interface can refer to
2 connections between slave units as well, as well as include the lines of a
3 physical interface, and other components, whether it be a port or whatnot.
4 So we think Vink actually teaches all by itself, but as Your Honor noted, we
5 did have that backup position of Vink in combination with Patrick and Vink
6 in combination with Patrick and AAPA to demonstrate that the masters
7 connect an external network.

8 I'm sorry for the long-winded answer, but does that address your
9 question?

10 JUDGE DOUGAL: Yeah. So my question then is if we go to Claim
11 9, does that essentially read out the physical interface of Claim 9? I mean,
12 does it make it like you -- they threw it in there, but it actually isn't a
13 limitation because it would make it so the switch configures to route data
14 packets through the same thing listed twice?

15 Like how would that work -- that interpretation work with the switch
16 in Claim 9 requiring two different -- I mean, it's pretty specific -- between
17 the respective physical interface and the one or more daisy chains. But I'm
18 just confused on how we can read those to be just -- you know, in Claim 1,
19 you can read that to be the same thing, but then that affects Claim 9 which
20 specifically calls out them being separate things.

21 MR. HA: Yes, Your Honor. So I think you're getting to the disputed
22 issue number three, which I was going to cover, but I'll jump to that right
23 now.

24 JUDGE DOUGAL: Sorry to jump ahead, but --
25 (Simultaneous speaking.)

1 JUDGE DOUGAL: They're related, so --

2 MR. HA: Yeah, absolutely. So I'll jump right to that, right, which is
3 if we look at our -- and I'm sorry I don't have my slide numbers memorized.
4 Here it is. So this is from our petition. And if you look at Vink, in
5 limitation (9.a), we already made the modification where the master is
6 connected to an external network, but this particular Figure 5 is directly from
7 Vink, where we don't have the modification. And even there, we've got a
8 transmission line 7 and transmission line 8, which is going towards the
9 internal network.

10 So under our first interpretation of the physical interface point to an
11 internal network, it could be one of these, and this could be one of the daisy
12 chains, right? There are different ways to kind of read this, but the other
13 way to kind of think about this is, once we made the modification to
14 limitation (9.a), well, of course, the switch what we needed to identify
15 because once modified, these connections to the external network or to one
16 of these transmission lines 7 and 8, that would have been easily selected by
17 the switches. So we think that what's on the --

18 (Simultaneous speaking.)

19 MR. HA: Let me pause to make sure I address your -- make sure I
20 answer.

21 JUDGE DOUGAL: So I can see how coming back, you can make the
22 argument that you relied on both positions in Claim 1, but is it clear in Claim
23 9 that you're relying on this switch for both of these different ideas? Could
24 you point me to something in the petition that says we're relying on Figure 5,
25 this switch, to both send me to the external network and the daisy chains?

1 MR. HA: So I think, Your Honor, if I remember our petition
2 correctly, we just identified the switch component of Patrick in limitation
3 9 -- I'm blanking out on what the actual limitation number was here, but on
4 this particular limitation about the switch because we didn't really need to do
5 a further modification once we've done the modification to the master unit
6 being connected out to the external network in the earlier limitation (9.a) I
7 believe it was.

8 And so, I think it was sufficient for us to just identify the component,
9 the (9.e) component, which is a claimed switch that has this functionality,
10 because once we've made the modification to limitation (9.a), the
11 modification naturally to applies to this component, here, in limitation (9.e)
12 as well.

13 JUDGE DOUGAL: So there was just no explicit explanation as to
14 how it applies to both situations.

15 MR. HA: Yes, Your Honor. We didn't say anything explicit in the
16 petition, but you know, I think -- and this is an issue with Claim 17 as well,
17 right? Talking about jumping through issues, we were under a pretty strict
18 word count limit. We were right up at the 14,000-word limit, and we had to
19 pick and choose in terms of what to prove up. And so, this is where we
20 ended up.

21 JUDGE DOUGAL: Okay.

22 MR. HA: Okay. So let me try to jump back to disputed issue number
23 two real quick. Okay. So I think I already talked about how the term
24 physical interface is broader than the term physical interface lines.

1 I also wanted to address their argument in the surreply where they say,
2 basically, that the entire purpose of the system is to provide an access to an
3 external network. But I just wanted to note that this argument is not based
4 on this limitation. It's really based on the preamble. And what they're trying
5 to basically have you -- what they're asking you to do, Your Honors, is to
6 basically say that the preamble breathes life and meaning into this limitation
7 physical interface to a packet-switched network without any evidence in the
8 record of how that would be done.

9 So I think I already just talked about how Vink's internal network
10 satisfy the claims, so I'll skip that. And then, as Your Honors noted, we
11 have, as a backup position, combined the teachings of network -- external
12 network access by the master units from Patrick as well as AAPA.

13 And once, in the POR, the Patent Owner has said -- made some
14 arguments that connecting LANs, local area networks such as Vink's local
15 area network, through an external network would not have been obvious.
16 All we did here in our reply was demonstrate that connecting local area
17 networks to internet, for example, was well-known, using Exhibit 1014 and
18 Exhibit 1016.

19 So the other argument that they're making is, you know, the
20 combination would not have worked because what Vink discloses is
21 something called a flat sequential addressing scheme. And what internet
22 uses is a hierarchical addressing scheme. And I think we've attacked this on
23 multiple fronts -- or addressed this on multiple fronts, so let me walk
24 through some of those arguments as well.

1 I think the first argument is, well, our expert, Dr. Hou, was basically
2 asked about this during his deposition. And the question was, what were the
3 functionalities that a person of ordinary skill in the art would have to
4 program in software in order to modify Vink's system in view of Patrick's
5 teachings to provide the option in Vink's system for a master unit to be
6 connected to an external packet-switched network.

7 And he basically said, well, prior to the filing date of the '904 patent,
8 there were open-source operating systems available like the LINUX and Red
9 Hats and a number of other operating systems. What this means is
10 commercial softwares like Red Hat and LINUX -- operating systems like
11 Red Hat and LINUX were able to do the translation between flat and
12 hierarchical addressing scheme.

13 Patent Owner's only rebuttal -- oh, Patent Owner's expert's only
14 rebuttal to that is he wasn't aware of any of the off-the-shelf operating
15 systems. But that doesn't really address, you know, Dr. Hou's explanation of
16 why softwares like Red Hat and LINUX could not have done that.

17 But there's also another -- a second sort of reason why their argument
18 is wrong is Vink doesn't just disclose a flat sequential addressing scheme. It
19 actually discloses both flat sequential addressing scheme but also a
20 hierarchical addressing scheme. So I'm here now on slide 30.

21 The sequential addressing scheme that the Patent Owner is focused on
22 is what I highlighted in yellow, which says, implicit addressing use which is
23 based on the sequence of connected I/O modules.

24 And then it says, yet a further embodiment of the method includes
25 providing, adding address information to the bits. This second part, this

1 further embodiment is a hierarchical addressing scheme. How do we know
2 that? Well, the '904 -- I'm now on slide 31. The '904 patent actually has
3 more or less the identical hierarchical addressing scheme. So you've got
4 here, on the left side of slide 31, some disclosures where it has, in the
5 downstream data packets, a pre-switch address that's addressed to a
6 particular slave.

7 And then, one of the option is the PSA, the pre-switch address,
8 corresponds to this particular slave. A port number can be appended to the
9 data packet, right? And this is a hierarchical addressing scheme that's
10 disclosed in the '904 patent because we asked Mr. Gomez, Patent Owner's
11 expert, on this point. We asked, question, so one level of the hierarchy
12 would be the pre-switch address, and the second level would be the port
13 address? Answer: that's one possible embodiment.

14 What does Vink actually show? It says you have data packets that is
15 intended to be exchanged, that has an unambiguous address information
16 regarding a slave, and added address information bits that gets appended.
17 That is the same hierarchical addressing scheme that the '904 patent is
18 talking about.

19 So we believe this kind of moots their entire argument of why Vink
20 only discloses a flat and it, hence, could not be combined with an external
21 network because, under that second embodiment of Vink, the internal
22 network uses a hierarchical addressing scheme as well as the external
23 network.

24 So I'll skip some of these additional slides on disputed issue number
25 three and jump to disputed issue number -- sorry -- two, and jump to

1 disputed issue number three, which implicates independent Claim 4 and its
2 dependents.

3 So slide 36 shows Claim 4 where Patent Owner is focused on the
4 limitation that I've highlighted here in the bottom in yellow.

5 Slide 37, in the Patent Owner's response, Patent Owner argued that
6 Vink transmits data in the same direction based on this disclosure of Vink
7 that's shown here on the right that talks about how the sequence of data bits
8 also correspond to the sequence of the connected slaves.

9 Slide 38, so in our reply, we basically pointed out that Vink actually
10 teaches transmitting in one and/or the other direction. That means the data
11 can be supplied in an ascending order -- i.e., slaves 1, 2, 3, 4 -- or
12 descending order -- i.e., slaves 4, 3, 2, 1, right? And if you now -- and you
13 know, Figure 3 and 4 actually shows this ascending and descending order of
14 data flow the opposite directions.

15 And if you now look at our actual combination, which is Vink with
16 Patrick, Patrick additionally teaches explicitly for the downstream. It is
17 going from the primary station to the secondary station. And for the
18 upstream direction, it's going from the secondary station to the primary
19 station. So our proposed combination where Patrick is teaching downstream
20 and upstream flow to be occurring in opposite directions, combined with
21 Vink that actually allows opposite data flow, makes complete sense. And
22 so, we believe this issue is mooted as well.

23 Disputed issue number 4 is Claim 9. We talked a little bit about the
24 switches already, so I think maybe I'll skip the switch portion. Actually, just
25 let me focus on one thing here.

1 So, now, I'm on slide 44. In the POR, they first argued that this
2 limitation, which is a switch configured to route data packets between the
3 respective physical interface and the one or more daisy chains, to require
4 selection between the external network and one of the several daisy chains.
5 And we pointed out the claim just requires one daisy chain.

6 They shifted their argument slightly, and they said, well, even if
7 there's only one, you have to still select between the physical interface that
8 connects to the external network and the one daisy chain. And as support for
9 that argument, they point to the specification at column 8, line 53 to column
10 9, line 5, which is what I have reproduced here on slide 45. But this portion
11 doesn't actually support the switch selecting upstream communication, and
12 I'll try to explain why.

13 So this is an explanation of Figure 6, which is here on the right, that
14 has -- which is a master unit with a switch and a pre-switch. They first begin
15 and say the main switch receives downstream incoming packets, and the
16 packets are distributed to chains 36, 37, and 39. And then, for the upstream
17 packets, it says upstream packets are delivered to address one and two for
18 transmission over the network. And then it says pre-switch 92 bypassed
19 these packets; that's the upstream packets. So this portion that they're
20 relying on to say that the switch selects between upstream and downstream
21 is not really even supported.

22 We already talked about this and sort of your questions on that, so I'll
23 skip to the pre-switch portion of the limitation unless Your Honor has some
24 further questions on that switch aspect.

1 Okay. Then, jumping to the pre-switch portion. Now, unlike the
2 switch, this does require an additional daisy chain because this limitation is
3 for a pre-switch which, in the event of a fault, re-routes the data packets to
4 another daisy chain, right?

5 And so -- but in their POR -- now I'm on slide 38 -- Patent Owner is
6 again arguing against Vink alone. And they say the petition presents no
7 evidence that Vink routes data through one or several daisy chains, but as
8 shown here on slide 49, we relied on the teachings of not only Vink but
9 Patrick to explain that it would've been obvious to add the second chain, a
10 second daisy chain to Vink. And that's explicitly shown. This is from page
11 53 of the petition.

12 And we pointed this out in our reply, and Patent Owner is now
13 arguing that there is no reason to modify Vink because Vink already
14 provided a solution for faults, but we'll submit that this proposed
15 modification is pretty simple, right? As I'm on slide 51 now, but the
16 combination is just making one simple modification to provide one alternate
17 data flow path. And so, we submit that this is -- this modification is a pretty
18 simple modification that would have been well within the skill of a POSITA.

19 Okay. So I will move on to disputed issue number 5, which deals
20 with dependent Claims 6 and 23. And we had some back-and-forth in our
21 briefing about how we allegedly removed this word bi in the term bicast or
22 bicasting on these claims, but I think the record is pretty clear how we did
23 not remove the word bi in bicasting, so I'll skip through those and jump just
24 directly to slide 58.

1 But I do want to address their latest argument in the surreply, which is
2 they now argue that our proposed modification to implement the 1 plus 1
3 automatic protection scheme from AAPA doesn't teach the second master,
4 right, second master transmitting up to the net. But if you look at the AAPA
5 portion, this is now talking about an active master bicasting these packets,
6 sending them to the network, as well as the second master -- standby master
7 here.

8 And then it says the standby master also transmits the upstream data
9 packets over to the network 22. And it says this redundancy, meaning the
10 redundancy of sending data streams up from the active master to the network
11 and the standby master to the network, this redundancy in transmission is in
12 accordance with the fault protection mechanism used in high-speed network
13 known in the art, such as a standard 1 plus 1 APS.

14 So, with that, I don't think their argument really holds water yet again.
15 And unless the Board has questions on this issue, I'll skip directly to slide
16 70, which has to do with the multicast packet.

17 Okay. So this last issue is directed to dependent Claim 17. I'm now
18 on slide 71. And the dispute is whether the petition sufficiently discussed
19 multicast packets.

20 So I just want to walk through what we did for limitation 17 due to the
21 word count issues. We said, as explained in these sections which point back
22 to limitation (11.d), (11.f), and (14.c), the combined teachings of Vink and
23 as modified with Patrick and AAPA teaches this limitation. And in fact,
24 Vink discloses limitation (17.a) is what we said. And I want to just highlight

1 what we did in limitation (11.f) because I think that's the portion that's most
2 relevant for the multicast packet.

3 Now, to be clear, Vink 17 -- limitation (17.a) and limitation (11.f) are
4 claiming two different things, and I'll explain that as I walk through this.
5 And in (11.f), we explain that this figure has annotations where these red
6 arrows correspond to how data flows, right?

7 And let's begin with the latter portion of limitation (11.f) that says
8 while passing packets not addressed to any of the ports on the slave unit for
9 output through another of the physical interface slots. Well, that is proven
10 up by here because the data that's coming in is not addressed to any of the
11 ports on slave unit 2 in our scenario here. So we have this data coming in,
12 and the same data going through and passing onto slave unit 3.

13 For the earlier portion, which receives the data packets from one of
14 the physical interface lines connected to the slave unit and passes those of
15 the data packets that are addressed to any of the ports on the slave unit
16 through the switch fabric, well, we've illustrated that here on slave unit 3,
17 where the data flows actually all the way down to the I/O module 10, which
18 is in our sort of exemplary proof, that's where it would've been addressed to.

19 Now, that would have been sufficient for (11.f). We didn't need to do
20 anything more, but you'll notice we added in yet another arrow here. And
21 we did that because we explicitly wanted to demonstrate that for limitation
22 (17.a) because (17.a) requires a multicast packet such that a copy of the data
23 retained by the I/O module, which would be the data that is retained here, is
24 further passed along. And that would be the arrow right here. That's pretty
25 evident, at least from our perspective, because this is our representing data

1 flow, and this is showing the data being passed along after it's retained in the
2 I/O module 10 of the slave unit group.

3 And in fact, we confirmed this with Patent Owner's expert during his
4 deposition. What we did was we annotated Figure 5 of the '904 patent and
5 added similar red data flow arrows and said, okay, if the data is retained here
6 by this slave unit that we've highlighted in yellow, and this is passed on,
7 passed copy, is that consistent with your understanding of a multicast packet
8 according to the '904 patent? Answer: I think that's consistent with the
9 description embodiment that's described in the '904 patent.

10 And so, we can just put these side by side. That's exactly what we're
11 illustrating here, right? A retained copy, a retained copy here, and a pass
12 copy, a pass copy going from this slave to the slave. That's right in
13 limitation (17.f).

14 I did want to address one additional point about -- a point they seem to
15 have raised in the surreply, which is now nothing in the -- and this is on page
16 24 of your surreply. They say nothing in the above suggests that the copies
17 of the same multicast packets are both retained and passed on. But I think
18 we have clearly demonstrated that, right? So, for example, data coming,
19 same data is getting passed through; data be retained, the same data is
20 actually getting passed on.

21 But I also wanted to highlight this is yet another instance where
22 they're trying to add in more words to the claims. The claims don't actually
23 say same copy. It just says copies. And so, our position here is that the term
24 copy could mean the same copy or something else.

1 And maybe an analogy works here, right? If I have a page where I'm
2 Xeroxing the entire page, that would result in the same copy, but if I'm
3 Xeroxing just half a page, that would give me, I don't know, a partial copy of
4 the original, right? Both are copies but they're two different types of copies.
5 And there's different types of copies that can exist. And so whatever that
6 means -- the copy means, we think these arrows are more than sufficient to
7 demonstrate that limitation (17.a) was taught or proving our claimed
8 invention.

9 So, with that, unless Your Honors have further questions, I think I
10 ended earlier, but I'll reserve my remaining time.

11 JUDGE DOUGAL: Thank you. Let's see how much time you've got
12 left. It looks like you've got about 21 minutes for your rebuttal time. We'll
13 turn it over to Patent Owner.

14 MR. HA: Thank you very much.

15 PATENT OWNER'S OPENING ARGUMENT

16 MR. STAMPATOPOULOS: Thank you, Your Honor. So I would
17 like to spend a little bit of time going over the '904 patent and what it's
18 directed to, what it's about.

19 So the '904 patent is directed to network access apparatuses in which
20 master units and slave units are used to provide access -- network access to
21 subscribers. If you turn to Patent Owner's slide 3 of 33 -- and I hope I have
22 it right this time -- you'll see that this is discussed at a high level in the
23 abstract. But it's not just discussed in the abstract, it's also reflected in the
24 claims.

1 I'd like to turn to slide 4. You'll see here that Claim 1 recites a
2 network access apparatus. Whether the preamble is limiting or not, this is
3 still context for somebody reading these claims, a person of ordinary skill in
4 the art reading these claims.

5 So you have a network access apparatus. You have first and second
6 master units that are part of this apparatus, and they comprise a -- among
7 other things, a physical interface to a network. You have slave units that are
8 also part of the claimed apparatus. And these slave units have ports to
9 subscriber lines. So the subscribers and the subscriber lines, those words are
10 part of the claim. And then, there are interface lines that connect the slaves
11 in daisy chains.

12 And those interface lines, the way that the daisy chains work, it's not
13 just a connection between slaves. You have very clear language in Claim 1
14 and other claims that shows that the first slave in a chain is connected to
15 exactly one master, the first master. The last slave in the daisy chain is
16 connected to exactly one master, the second master. And then every slave in
17 between is connected either to two slaves, one before it and one after it, with
18 the exception of the first and second slave in the chain which are only
19 connected to a single slave.

20 So there's a very specific way in which these daisy chains work,
21 which is different than Patrick where you don't have that connection
22 between a last slave and a second master or any master for that matter.

23 Now, a person of ordinary skill in the art reading Claim 1, from the
24 words network access apparatus as well as the words subscriber lines, would
25 understand that the claimed apparatus, whether you treat the preamble as

1 limiting or not, is intended to provide connectivity to subscribers. And this
2 is why the term subscriber lines is so important, and Patent Owner's
3 construction is so important.

4 Subscriber lines are not just any lines. If they were any lines, they
5 would be recited as such in the claims. They're subscriber lines for a reason.
6 They're subscriber lines because they are lines to users of subscription-based
7 services. That's the plain and ordinary meaning of the word subscriber,
8 which should not be read out of the claims.

9 And once you make that finding, which is plain and obvious just from
10 the face of the claim, that is that the claims are directed to an apparatus that
11 provides access to subscribers, it becomes very clear that the claimed
12 apparatus here, whether you treat the preamble as limiting or not, requires a
13 core network and that this packet-switched network that's recited here in
14 blue is an external network. It's not the internal network that could be
15 formed simply by the internal loops of the masters and the slaves. It needs
16 to be something else.

17 And I'll get -- I'll go into more detail about claim construction, but I'd
18 also like to turn to the specification, which Petitioner seems to urge the
19 Board to ignore. But the specification is important, and you'll see that.

20 If you turn to page 5 of 33, you'll see that prior art systems were used
21 to provide access from a core network to subscribers.

22 If you turn to page 6, the AAPA, you'll see that both of these
23 architectures, which are different from the architecture claimed in the '904
24 patent, are used to provide access to a network. It's this little thing in the
25 cloud right here. That's a network. It's an external network. And you'll see

1 that every single embodiment, for example, in Figure 3 on slide 7, is directed
2 to providing subscribers with access to a network.

3 Petitioner would like to have a person of ordinary skill in the art
4 ignore the language in the claims and the specification. We submit that
5 that's improper. We submit that these claims would be understood in that
6 context.

7 And when you're looking at the packet-switched network interface
8 that's provided by the masters, it's not just the physical interface lines that
9 are already connecting those masters to the slaves and the slaves to
10 themselves in daisy chains. It needs to be something else. If it were the
11 packet-switched network -- if the packet-switched network interface were
12 the same interface that connects the masters to the slaves, there would be no
13 need for the language in the claim.

14 And I'll turn again to Claim 1. This language here that says each
15 daisy chain -- and Claim 1 is on slide 4 -- each daisy chain comprising at
16 least a first slave unit connected by one of the first -- by one of the physical
17 interface lines to the first master unit and the last slave connected by another
18 of the physical interface lines to the second master unit. That would be
19 redundant because you'd have this packet-switched network interface
20 connecting the masters to the slaves.

21 And the alternative, it would be redundant to recite the physical
22 interface to a packet-switched network is this were just referring to a
23 connection between the masters and the slaves. That just can't be the case.

24 And I'll add that in every embodiment, just to close the loop on the
25 '904 patent description at a high level, in every embodiment, there is the

1 same disclosed topology: a master with an interface to a core network -- and
2 I apologize for being repetitive, but it's a very important point -- a master
3 with an interface to a core network and a physical interface connection to a
4 first slave in one or more daisy chains, a master with an interface to a core
5 network and a physical interface connection to the last slave in one or more
6 daisy chains, slaves that connect a subscriber to subscribers via subscriber
7 lines, slaves that each connect to two other slaves in a sequence -- those are
8 the slaves in between -- and slaves that connect to only one other slave and
9 one master -- and those are two slaves in each daisy chain, the first and the
10 second.

11 In the language of the claims for it to make sense, for all of the
12 language to be at play, it requires a construction. It requires -- we haven't
13 proposed a construction, but it requires a person of ordinary skill in the art to
14 look at this packet-switched network interface and realize that it's an
15 interface to a core network.

16 I'll also add here that the Petitioner conceded in the petition that Vink
17 does not disclose masters that connect to a network. That's on page 14 of
18 our slides. We made the argument in our surreply at page 5. It's also in the
19 petition, page 20. This is from the petition. Although Vink does not
20 explicitly teach the master 1 accesses a network, master stations connected
21 to networks were well known.

22 The only reason for that statement is because it's very clear to a person
23 of ordinary skill in the art, and it was clear to the Petitioner when it was
24 making these arguments, that the claims require access to a core network.

1 That's also probably why they put in their fallback position of AAPA as well
2 as Patrick, which I will get to momentarily.

3 Briefly, I'd like to touch upon the question of the subscriber lines. If
4 we go to page 9 of Patent Owner's slides, it's true that the subscriber lines are
5 mentioned throughout the patent specification. And multi-shelf access
6 architectures are also mentioned. The reason why you have slaves, as
7 Petitioner's counsel said, you have slaves that are housed in their own
8 shelves, and you have multi-shelf architectures, is because these systems are
9 used to provide access to subscribers, and these subscribers need access to a
10 core network in order to make use of subscription-based services to which
11 they have subscribed.

12 And I apologize for the tongue twister, but --

13 (Simultaneous speaking.)

14 MR. STAMPATOPOULOS: Please.

15 JUDGE DOUGAL: So maybe I'm not entirely following some of
16 your arguments, but I guess I need some more clarification as to why this is
17 important.

18 So, going back a little bit, maybe you haven't really addressed this, but
19 we have a local area network in Vink. Vink is a patent from 1990. The
20 inventors invented this and filed this application 1999. And Petitioner is
21 arguing everybody knew this in 1999 that you could connect a local area
22 network to the internet. And I mean, if you just think of our past experience,
23 I don't know how old everyone is, but from 1990 to 1999, access to Internet
24 increased substantially. And I mean, we can't -- I mean, the evidence shows
25 that it was well known to connect to the local area networks.

1 So, with that knowledge, and even if you disagree with that, based on
2 the teachings of Vink, once Vink is connected to the internet, what does this
3 argument about subscriber lines -- how does that help you?

4 MR. STAMPATOPOULOS: Your Honor, first of all, I'm painfully
5 aware of the proliferation of the internet in the late '90s. I'm a little older
6 than I look. But what I would say is that the question you asked is once
7 Vink is connected to the internet, how does this help? And I think Your
8 Honor has asked a question that's very pertinent, but I want to make a
9 correction to the question because it assumes the connection is already
10 established. The reason why subscriber lines --

11 JUDGE DOUGAL: I know you are going to disagree with that point,
12 but if you give that to Petitioner -- and I'm not saying that you are at all. I'm
13 just saying in this scenario where if you were to give that to Petitioner, does
14 this argument about subscriber lines, is that still a winner? Does that help
15 you distinguish, you know, the applicant admitted prior art, Patrick, this
16 situation with the internet? But this argument about subscriber lines, can
17 that still help you in this situation?

18 MR. STAMPATOPOULOS: If the Board finds that it's possible to
19 connect or that a person of -- two things, if the Board finds that it's, A,
20 possible for a person of ordinary skill in the art to connect Vink to the
21 internet and therefore combine it with Patrick and AAPA, and B, if there's a
22 motivation to do so, then Petitioner wins, and it doesn't help us.

23 But here's how it helps us. Subscriber lines is important because it
24 makes abundantly clear that number one, Vink -- sorry -- it makes
25 abundantly clear, number one, that the claims are actually directed to a

1 network access apparatus that requires connection to a core network, which
2 Vink does not disclose, and second, it makes clear that Vink itself does not
3 disclose subscribers and subscriber lines. Because if you are to construe
4 subscriber lines as lines to users of subscription-based services, there's no
5 such disclosure in Vink.

6 And the reason why there's no such disclosure in Vink is because
7 Vink, being a local area network from 1999 -- and now I would like to get to
8 your other point, which I think is about the connection of Vink and whether
9 it's possible to connect the LAN to the internet -- Vink was limited to a very
10 narrow set of industrial applications. That's in the Patent Owner response,
11 that's in the surreply, and Mr. Gomez has testified about this extensively.
12 And so, given that, Vink, and given other disclosures in Vink about its non-
13 hierarchical address system, which I will also get to, Vink is not just any
14 LAN.

15 The argument that we're making here is not what Petitioner says. It is
16 not that it was not possible to connect any given LAN to the internet, any
17 given LAN to a core network. The argument here that we are making is that
18 Vink's specific LAN because it is limited to -- and this is a point of
19 contention between the parties -- Vink's specific LAN is directed and uses a
20 non-hierarchical address system. It does not disclose a hierarchical address
21 system, and we can get into that.

22 Once you make that finding that Vink discloses a non-hierarchical
23 address system, then the question arises how does a person of ordinary skill
24 in the art adapt Vink in order to make it compatible with a hierarchical

1 addressing scheme. I'm going to pause there because I see you have a
2 question.

3 JUDGE DOUGAL: I don't understand why we have to look at that
4 level of detail though. I mean, the claims aren't that level of detail. It's what
5 one of skill in the art would understand looking at these references, how they
6 would get there.

7 So why is Vink restricted to this -- you know, again, it's -- I'm having
8 a hard time looking at this in 1999, going back to a 1990 reference, and
9 saying look at all this -- these different teachings, and you know, one of skill
10 in the art is going to stick with some protocol that only works with local area
11 networks and doesn't work with the internet, even though everybody is
12 moving towards internet connectivity.

13 And again, that type of detail is not in the claims. I'm having a hard
14 time seeing why that is so important.

15 MR. STAMPATOPOULOS: So I want to take it step by step. First
16 of all, what's the importance of these details? The reason these details are
17 important is because some of these details are actually reflected in the
18 claims.

19 Detail number one that's reflected in the claims -- and this is the only
20 really important detail -- is the requirement that the masters provide an
21 interface to an external core packet-switched network. That's really the only
22 detail that matters.

23 Subscriber lines matters insofar as a person of ordinary skill in the art
24 looking at these claims would see subscribers, the word subscribers, and that
25 would clue them into the fact that the packet-switched network, albeit not

1 expressly referred to in the claims as a core network, is nonetheless a core
2 network.

3 That's the reason why subscriber lines is important because one of the
4 key reasons that a person of ordinary skill in the art would find that this
5 packet-switched network -- aside from the specification -- I'm only talking
6 about the claim language. Just looking at the claims, if you find that the
7 subscriber lines are communication lines to subscription-based services, then
8 you have to find that the packet-switched network that's also recited is a core
9 network. There's no other way to construe these claims that makes sense.
10 That's why the subscriber lines are important.

11 And now, once you've found that, and I want -- I really want to take it
12 step by step. And so, I'd invite you, even though I know you will even
13 without my invitation, ask me questions. Once you find that, then the
14 question becomes, well, isn't it true that in 1999, LANs could be connected
15 to core networks? And the answer is yes, LANs could be, but not every
16 LAN. Vink's LAN in particular is directed to a non-hierarchical network.
17 And the reason we know that is because both Mr. Gomez and Dr. Hou
18 testified to this effect.

19 So I'll invite your attention -- because the briefing about Mr. Gomez's
20 testimony is very clearly shown in our papers. The same applies to Dr. Hou.
21 But I just want to emphasize, if you go to slide 20, you'll see Dr. Hou's
22 testimony.

23 And I asked Dr. Hou -- we talked about a hierarchical address system.
24 Is there such a thing as a non-hierarchical address system? Sure, I suppose,
25 because lots of things are possible. Have you encountered one? And he

1 talks about Vink. He talks about Vink. Vink is a non-hierarchical address
2 system. There's no dispute that Vink is directed to a non-hierarchical
3 address system. The only dispute is whether it's also directed to a
4 hierarchical address system.

5 Why is it important that Vink is directed to a non-hierarchical address
6 system? Because as Dr. Hou also testified, if you have a core network, you
7 need a hierarchical addressing scheme in order to access the core network.
8 And if you go to slide 23, you'll see Dr. Hou's testimony on this, which
9 confirms Mr. Gomez's opinions.

10 And I asked Dr. Hou, you could also have a system where you don't
11 have any tiers, but devices communicate with one another by having a
12 precise address that corresponds only to a particular device, correct? And he
13 disagrees. He says systems with large numbers of addressable computers
14 are typically arranged in a more hierarchical fashion.

15 Mr. Gomez testified that if you have a core network access system,
16 you need a hierarchical addressing scheme. And that's why Petitioner is
17 saying that Vink addresses both non-hierarchical, as testified by its expert, as
18 well as hierarchical addressing schemes. Which brings me to my next point,
19 the Petitioner is wrong. Vink does not disclose a hierarchical addressing
20 scheme.

21 Mr. Gomez testified that Vink is directed to non-hierarchical systems.
22 When asked, Dr. Hou testified the same. The only evidence that you
23 have -- which is not evidence, I respectfully submit -- that Vink is directed to
24 hierarchical addressing systems is attorney argument. There's no expert
25 testimony on this issue by Petitioner rebutting Mr. Gomez's testimony on the

1 same issue, which is that Vink by itself cannot actually address a core
2 network -- sorry provide access to a core network.

3 Let me pause there for -- let me actually elaborate a little on this. So I
4 asked Dr. Hou why can't you use a non-hierarchical system to access a core
5 network. This is on slide 24. That's his testimony. I asked him why. I can't
6 tell you every reason why. And he goes on in the block in red. And I'm not
7 going to read the whole block, but I'll go to the block in green.

8 And he talks about, if you're going outside your own space, your own
9 network or subnetwork, then it may look -- it's a little bit unintelligible,
10 frankly, but he says, if you're going to go outside of your local network, if
11 you go to the broader network, you need hierarchies. You need hierarchies.

12 Neither one of the experts has testified that Vink is directed to a
13 hierarchical system. I invite the Board to look at the record in full. The only
14 argument that has been -- the only support for this contention is attorney
15 argument. Petitioner's attorneys are not experts.

16 You can't support this conclusion on the basis of a comparison
17 between an embodiment in the '904 patent and a cryptic, I might add,
18 disclosure in Vink and say they're the same. They're not. They're not the
19 same. If they wanted to make this argument, they could've put in a
20 declaration from their expert. There was nothing stopping them. They did
21 not. They can't make that contention based on pure attorney argument. That
22 is not proof.

23 Which brings me to the next critical -- I want to pause here for a
24 second because I know -- it sounds like this is a complicated issue for the
25 Board, and I really want to make sure that I clarify anything that may have

1 been left unclear in our papers before I move onto the next point which
2 proves this and also shows why a person of ordinary skill in the art would
3 not have made the combination between Vink and Patrick as needed to
4 support the obviousness ground that Petitioner has made.

5 JUDGE DOUGAL: So I just want to raise one -- make sure I
6 understand one point is that -- so, kind of answered my previous question.
7 The claim language that you are focusing on is one or more ports to
8 respective subscriber lines. That's the language that you believe requires
9 details of the inner functionings of these networks to get you to the external
10 network. Oh, did we lose you? Did we lose you for a second?

11 MR. STAMPATOPOULOS: I lost you for a few seconds. If it was
12 on my side, I apologize. I feel like it was a critical moment, so --

13 (Laughter.)

14 MR. STAMPATOPOULOS: I apologize.

15 JUDGE DOUGAL: So I guess that's my first question is, you know,
16 is that claim language, the ports respective to subscriber lines is not just a
17 physical port, but you know, implies an electrical configuration or
18 programming that requires a specific type of, I guess, system that requires us
19 to look I guess at these finer details of Vink.

20 MR. STAMPATOPOULOS: So, let me -- I had a little bit of trouble
21 hearing your question, but let me try and give you an answer because I think
22 I understand what you're getting at. I think your question was are the ports
23 to subscriber lines the language that allows us to infer that core network
24 access is required and from there, that reprogramming Vink and/or
25 configuring Vink is required to provide core network access. The answer is

1 that is part of it. Yes, that is part of it because once subscribers are in the
2 mix -- if these claims just said ports, it wouldn't matter.

3 These claims say ports to subscriber lines. And once you have
4 subscribers in the mix, once you have an express recitation of subscribers,
5 that means that the folks using these ports need to have access to
6 subscription-based services. And everybody knew as of 1999 that
7 subscription-based services required core network access. That's point
8 number one.

9 Point number two is that the packet-switched network is part of a
10 network access apparatus. That preamble, even if not limiting, still clues a
11 person of ordinary skill in the art into the fact that there's core network
12 access required through that interface.

13 Point number three is you have the specification that also discloses
14 embodiments and provides context in which there is a core network at play.
15 Vink doesn't have that core network.

16 And on top of that, Vink is not just any LAN. Vink is a non-
17 hierarchical LAN. That LAN requires some type of tweaking. And we'll go
18 into -- I'll get into this in one moment, unless you have another question
19 about the tweaking that Vink requires.

20 JUDGE DOUGAL: Let me just really quick ask if the tweaking is
21 deals with whether you can access the subscribers because of this address
22 issue?

23 MR. STAMPATOPOULOS: Sort of. And the answer is sort of. In
24 order to provide access to these subscribers and to a core network, you need
25 a what is called hierarchical addressing scheme. You can't do it. If Vink is

1 left to its own devices, which are non-hierarchical, to its own addressing
2 scheme, which is non-hierarchical, that is unsuitable to provide core network
3 access to subscribers. So that tweaking -- and tweaking is an
4 oversimplification. It's actually substantial reprogramming, and there is
5 slews of testimony from Mr. Gomez as to what's required for that.

6 But before turning to Mr. Gomez's testimony, yes, that tweaking is
7 required to provide subscription-based service users, or subscribers in
8 common parlance, with network access -- with core network access. And
9 the testimony, the relevant testimony, in part, is reflected in Petitioner's
10 demonstratives -- and I say in part because there's more parts to it, and I will
11 get to those parts.

12 So turning to slide 29 of Petitioner's exhibits, you'll see here, I asked
13 Dr. Hou a question. And this question was asked at page 110 of his
14 transcript. You'll see that a lot of it has been taken out. This has been
15 shortened.

16 So my question was what were the functionalities that a person of
17 ordinary skill in the art would have to program in software in order to
18 modify Vink's system in view of Patrick's teachings to provide the option in
19 Vink's system for the master units to be connected to an external packet-
20 switched network? That's the core network we were talking about. That's
21 what's needed for these subscribers to be given access to the subscription-
22 based services that we were just discussing.

23 Dr. Hou -- there's a long colloquy between me and Dr. Hou. Many of
24 his answers, with respect, are non-responsive. That is briefed in our Patent
25 Owner response that they're non-responsive, and I would invite the Board to

1 take a look at this transcript. I'm not going to, unless you want me to, walk
2 you through the Q&A, but one of his answers is, so, you know, to the extent
3 that a person of ordinary skill in the art may have actually started with an
4 available operating system, it may have already included all the code
5 necessary.

6 Notice that his answers are not definitive. It may have included all the
7 code necessary. And then he talks about LINUX and Red Hat, a number of
8 operating systems like that. Two points, Dr. Hou concedes that there is a
9 modification needed in answering my question. To provide external or core
10 network access to subscribers. There's no question about that. There's no
11 serious dispute about that. A modification is needed.

12 And so, my question is, what would a person of ordinary skill in the
13 art need to do? And he waffles for about two pages of testimony, and
14 finally, he answers tentatively, an operating system may have already
15 included all the code necessary.

16 And then he gives a response about LINUX and Red Hat. Well, Dr.
17 Hou never included LINUX and Red Hat in his declaration. And though it's
18 true that I invited him to provide these answers in his declaration, I'm not
19 sure how I would be able to locate the versions of LINUX and Red Hat that
20 are necessary to corroborate Dr. Hou's answers. And Dr. Hou did not submit
21 a supplemental declaration, nor did Petitioner submit any type of exhibit that
22 would allow us to respond to this.

23 Yet, Mr. Gomez looked at Dr. Hou's testimony, and he unequivocally
24 disagrees with Dr. Hou. He says -- and this starts at paragraph 73 of his
25 declaration, and that's found on slide 29 of our deck -- none of Vink, Patrick,

1 or the AAPA teach how to adapt masters in a local limited area network
2 such as Vink's -- it's Vink's local area network -- to interface with an
3 external core network. In my opinion, this is for good reason. It would have
4 been beyond the level of ordinary skill in the art.

5 And he explains why. It requires -- if you go to slide 30 of our
6 deck -- modifying Vink to interface with an internal core network requires
7 specific software to route and address packets from the external network to
8 the master units and to the slaves. For example, adapting Vink so that its
9 masters would provide an interface with a packet-switched network as
10 required by the claims '904 patent, would require reprogramming
11 Vink's -- not any LAN, Vink's non-hierarchical LAN to allow for
12 hierarchical addressing.

13 That's unrebutted expert testimony right there. And it goes on. It
14 goes on, and Mr. Gomez talks about how custom solutions were needed by
15 someone who would be an expert in order to create these custom softwares
16 that would allow connecting Vink's system or adapting Vink's system such
17 that the purported combination -- or the proposed combination by the
18 Petitioner -- could actually be implemented.

19 Our argument, by the way, here, is not that the combination wouldn't
20 work. Our argument is that it's beyond the level of ordinary skill that -- to
21 make that combination with Vink as your starting point, with a non-
22 hierarchical system such as Vink's as your starting point. And that's the only
23 argument or that's the only combination that Petitioner has proposed here.
24 Take Vink and you're motivated to provide external network access because
25 it's universally desirable.

1 By the way, we dispute that because, as of 1999, you didn't have the
2 Internet of things. You're absolutely right there was a proliferation of the
3 internet, but I don't remember a lot of folks controlling their garage doors
4 with their cell phones in 1999.

5 So that's the testimony that Dr. Hou gave, that these are the
6 motivations that would have prompted a person of ordinary skill in the art to
7 make the modification. However, what Dr. Hou has not testified about, and
8 there's no testimony by Petitioner's expert whatsoever about this, is that this
9 would be within a person of ordinary skill in the art's wheelhouse.

10 And Petitioner's counsel said that the only thing that Mr. Gomez said
11 was that he wasn't aware of Red Hat and LINUX. That's not true. Mr.
12 Gomez gave several pages of testimony. And that's part of our briefing, and
13 it's part of our slides.

14 And at the very end of our slides, on slide 33, he also says, contrary to
15 Dr. Hou's conclusory testimony, if you go to slide 33, I'm not aware of any
16 off-the-shelf software suites or programs that would enable a person of
17 ordinary skill in the art to provide Vink with the option of connecting to
18 such a network.

19 And then he says, Vink uses a sequential addressing protocol that was
20 incompatible with the internet addressing protocols as of the priority date of
21 the invention.

22 Now, Petitioner is well aware of the fact that its expert has not
23 provided testimony on whether it was within a POSITA's skillset or
24 wheelhouse to make the necessary adaptation. Petitioner is well aware that
25 the adaptation was necessary because that's what its own expert testified.

1 Instead, to overcome all of this, Petitioner argues that Vink and its non-
2 hierarchical system, is the same as the '904 patent's, based on testimony from
3 Mr. Gomez that you could attach address bits to a packet in one of the
4 embodiments of the '904 patent.

5 Well, that doesn't really say anything. Yes, that's true, but that doesn't
6 show anything. That doesn't show that Vink's embodiment, simply because
7 it adds certain bits to a packet, is the same as the '904 patents. Respectfully,
8 that's a conclusion for an expert to opine on, not for Petitioner's counsel to
9 give testimony on. And neither of the experts here have testified that
10 Vink -- critically, Dr. Hou has not testified that Vink is hierarchical. Their
11 own expert hasn't testified that Vink is hierarchical. There's no evidence that
12 Vink is hierarchical, literally no evidence. Attorney argument is not
13 evidence.

14 So I realize my presentation has gone somewhat sideways, but I hope
15 it's been helpful. Let me pause there for a second and see if there are any
16 questions about Claim 1 because I think, if I were to summarize it, I would
17 say the following: Vink doesn't disclose access to a core network. A core
18 network -- access to a core network through the two masters is required by
19 the claims. That's finding number one that you shouldn't -- the Board should
20 make, respectfully.

21 On the basis of the subscriber lines language, on the basis of the
22 network apparatus language, and on the basis of the specification, once you
23 find that, you need to look at Vink and see -- you can look at Vink and see
24 that it does not provide this core network access, and it doesn't connect to

1 subscribers. Once you make that finding, you need to bring in the
2 combination with Patrick and AAPA.

3 We do not dispute that Patrick and the AAPA disclose subscribers.
4 We do not dispute that Patrick and AAPA disclose core network access.
5 However, combining Patrick and AAPA with Vink is not routine. It's not
6 trivial. It requires substantial reprogramming. It requires custom solutions.
7 And the only evidence you've heard on this issue is from Mr. Gomez who
8 says that it would be beyond the level of ordinary skill.

9 And then you've heard some testimony, some unsubstantiated
10 testimony that there was an off-the-shelf solution called Red Hat and another
11 one called LINUX that maybe, maybe included all of the code. Maybe is
12 not good enough. Dr. Hou didn't analyze this issue in his declaration. He
13 didn't analyze this issue in his deposition. And he didn't submit a
14 supplemental declaration, even though he could have. I can't tell you why
15 Petitioner chose not to submit additional expert evidence on this critical
16 issue. The fact of the matter is they didn't.

17 And I'd like to briefly touch on --

18 JUDGE DOUGAL: I'm going to throw this out there. So just as we're
19 on this point, this is more for Petitioner than it's for you, but I think
20 Petitioner really going to need to know what -- why you do or don't need this
21 level of detail. Vink, what it is in Vink you're relying on because that would
22 determine -- and I try to just determine what is the starting point with Vink.

23 What is the starting point that we are looking at from Vink to then go
24 and combine Patrick because there's different layers here that, depending on
25 where the starting point is, I could see it turning it out in the Petitioner's

1 favor. I can see it turning out on Patent Owner's favor. It depends on what
2 level of detail and what, you know, specific features of Vink that we need
3 that implicate, you know, different things like what the Patent Owner is
4 arguing. I don't have a -- I guess I have questions in that area.

5 MR. HA: I'll try to address some of those in my rebuttal, Your Honor.

6 MR. STAMPATOPOULOS: Your Honor, I think I'll reserve time
7 because I expect you might have additional questions for me, so I'm not sure
8 how much I have, but I'll rest for the time being.

9 JUDGE DOUGAL: Okay. With my little question to Petitioner in
10 your end of arguments, we'll say you have about 23 minutes left.

11 JUDGE ENGELS: And this is Judge Engels. If I could ask a
12 question, I realize the facts are somewhat different, but these facts remind
13 me quite a lot of the Federal Circuit's decision in Muniauction v. Thompson,
14 which is 532 F.3d 1318 it's from the Federal Circuit 2008.

15 Among other things there, the Federal Circuit said -- this is the pin
16 cite is 1327 -- after walking through some facts relating to applying a
17 proprietary software to internet and web browser technology in the years
18 1998, the Federal Circuit concludes that that would have been obvious as a
19 matter of law just with the application of -- and you know, it cites Leapfrog
20 and other cases.

21 So I guess that's perhaps a comment as much of anything. And
22 perhaps if you could have a look at that and address it in your rebuttal time,
23 again it's the cite is 532 F.3d 1318, and the relevant discussion is page,
24 probably, 1326 to 1327.

1 MR. STAMPATOPOULOS: With apologies, Your Honor, that was a
2 question for me I believe, correct? Sir, I can't hear --

3 JUDGE ENGELS: Yes, but certainly for either of you if you -- time
4 permitting of course, and it's just a comment but take that for what it's worth.
5 I understand the facts are different, and it seems that the similarities are
6 pretty notable, though. And I don't by any means mean to derail your
7 rebuttal, but if you have time, I'd be interested in your thoughts.

8 MR. HA: So I'll just ask the question because --

9 (Simultaneous speaking.)

10 MR. HA: I'm not so sure who has now got the stage at this point, so
11 do I have the rebuttal stage at this point, or is my opposing counsel
12 continuing to provide his thoughts?

13 MR. STAMPATOPOULOS: I think I've rested at this point, not to
14 put you on the spot with the question about the case.

15 MR. HA: Okay. So sorry about that. All right. So I'll jump into my
16 rebuttal. And unfortunately, I don't have that Muniauction case in front of
17 my Your Honor, but I'll try to look that up. And if you'll indulge me, you
18 know, maybe right after my colleague talks about the Muniauction, I can
19 study it and provide some comment real quick if that's okay.

20 (No audible response.)

21 PETITIONER'S REBUTTAL

22 MR. HA: Great. So just a couple of rebuttal points. On their
23 argument on the subscriber lines needing -- because the claim term
24 subscriber lines, that really requires interpreting the claims to require access
25 to an external network, that's a little bit odd to me because the Patent Owner

1 is arguing that you've got these subscriber lines that are at the slave units,
2 right?

3 And I think there's no real dispute that, for example, the AAPA, the
4 '904 patent itself says one of the subscriber lines can be DSL modems, right?
5 That's at column 1, line 45 through 48, where it says each slave unit
6 typically comprises a switching core coupled to a plurality of ports serving
7 respective subscriber premises via suitable DSL modems.

8 And you know, that argument that because you've got subscriber lines,
9 you actually need to get access to an external network, seems counter to
10 what they actually said in page 11 of your surreply where they were trying to
11 fight our proposed combination. And they said modems -- i.e., DSL
12 modems -- would provide Vink's non-subscriber stations direct access to an
13 external network, thus obviating the need for network access through the
14 physical interfaces in Vink's master -- i.e., in the manner claimed in the '904
15 patent. So I think this is an inconsistent argument that they made in the
16 surreply and now in the oral arguments. I just wanted to highlight that.

17 Second thing I wanted to kind of jump towards is their demonstratives
18 slide 20. So I think my opposing counsel talked about this back-and-forth
19 Q&A between Dr. Hou and himself about how this is an admission from Dr.
20 Hou that Vink is directed only to a flat sequential addressing scheme. But if
21 you read this passage, he says, for example -- the question was, have you
22 encountered such a non-hierarchical system? And his answer is, for
23 example, Vink talks about addressing in some sort of order, right? And so,
24 that's not necessarily a hierarchical because it's based on ordering of the
25 devices.

1 We don't dispute that Vink discloses sequential addressing scheme.
2 And that's basically that embodiment that he's providing. However, as I
3 noted in slides, I think 30 through 31 of my demonstratives, Vink does
4 disclose a hierarchical address scheme as well. So this purported admission
5 from Dr. Houis not really an admission. It's just a recognition that Vink
6 discloses a non-hierarchical addressing scheme.

7 And Your Honors asked me to kind of address, you know -- so where
8 are we looking at in terms of where -- what the starting point is. Well, I try
9 to kind of just break it down.

10 I think, let's start with KSR, which is we have to appreciate the fact
11 that a POSITA is not an automaton. They have creativity, and you can bring
12 in whatever their education and inferences and modifications that they may
13 make.

14 And if we look at, you know, what the level of ordinary skill in the art
15 is, which is what we proposed and Your Honors adopted in the Institution
16 Decisions, and neither side has actually challenged that, a POSITA would
17 have a degree, bachelor's degree in computer science, computer engineering,
18 electrical engineering, or equivalent training, or approximately two years of
19 experience working in the field of information technology and networking.
20 Lack of professional experience can be substituted by additional education
21 and vice versa.

22 So this is a pretty well-informed POSITA. And all we're doing here is
23 basically taking a LAN, a local area network of Vink, and then saying you
24 can make additional connections to an external network by connecting
25 additional wires that go to the internet. And everybody, as Your Honors

1 noted, around the time of the '904 patent, was trying to connect things to the
2 internet.

3 And changing addressing schemes, right? Let's say, you know, a good
4 example or analogy might be an address in Korea, that scheme is different
5 from the address scheme here in the U.S. But simple translations existed.
6 And Dr. Hou actually testified during his deposition that Red Hat and
7 LINUX actually provided such capabilities.

8 And on that particular point as well, my opposing counsel said maybe,
9 whatnot, but I'll just read you the question and answer.

10 Question: Okay. What are the existing software packages that you
11 were referring to in your answers as of 1999 timeframe and prior to the
12 filing date of the '904 patent?

13 Answer: So prior to the -- and I don't know if I have an exact opinion
14 about the priority date, but prior to the filing date of the '904 patent, there
15 were open-source operating systems available, like LINUX, Red Hat, a
16 number of operating systems like that.

17 He also says there were generic computer programs you can buy to
18 implement that -- those to load and run those on. You click some vendors I
19 believe would sell you a platform for operating system preinstalled. And
20 there are lots of operating systems and computer systems on which users
21 could easily implement and create systems like that disclosed in Vink and
22 other systems for the software that's required. You don't have a POSITA -- a
23 POSITA doesn't have to like write their own operating system from scratch.

24 And this is on page 1 -- I think this is 123, lines 5 through 24, that I
25 just read from. So he's pretty unequivocal about the capabilities of all these

1 off-the-shelf software that existed. He didn't say -- he didn't insert any word
2 may in that particular Q&A. He was pretty clear about the fact that these
3 type of capabilities existed.

4 So that's one part of where we start and where we end up, assuming
5 Vink only discloses flat non-hierarchical addressing scheme, right? But I'll
6 go back to, again, my slides 30 to 31 where the record speaks for itself,
7 right?

8 Dr. Gomez explicitly conceded, if you have a pre-switch address that
9 provides an address for a particular slave, and you then append a port
10 number to that packet, that is a hierarchical addressing scheme. And Vink
11 says almost that verbatim. It says a slave with an unambiguous address and
12 to add address information bits to the data that's to be exchanged, right?
13 Those are basically one-to-one correspondence with one another. That is a
14 hierarchical addressing scheme.

15 So if Vink discloses a hierarchical addressing scheme, then, well, their
16 whole proposition that you couldn't connect a hierarchical addressing
17 scheme out of Vink to a hierarchical addressing scheme such as the internet,
18 just falls apart.

19 So I think with that I will rest unless Your Honors have further
20 questions.

21 JUDGE ENGELS: I have a question. So, as you mentioned, the level
22 of skill here is a bachelor's degree in computer science, computer
23 engineering, and electrical engineering, or two years of experience working
24 in the field of information technology and networking. It strikes me as an
25 awfully low level of ordinary skill to suggest that a person with just a

1 bachelor's degree and no work experience or someone without a bachelor's
2 degree and two years of experience would be making modifications to Vink.
3 Could you address that, please?

4 MR. HA: Sure. I mean, I can speak somewhat from personal
5 experience, which is, you know, back in college, and even in high school
6 and whatnot, back in the time of the 1990s and whatnot, we've had high
7 school students making software, writing code, and contributing to LINUX
8 packages, right? Red Hat and LINUX packages that provide various
9 different technologies and whatnot. So the fact that there is a bachelor's
10 degree in computer science or two years of experience working in the field
11 of information technology I think is more than enough.

12 JUDGE ENGELS: Fair enough. Thank you.

13 MR. HA: Sorry I don't have any better answer than that developed in
14 the evidence, unfortunately.

15 JUDGE DOUGAL: Okay. Patent Owner?

16 MR. STAMPATOPOULOS: So, thank you, Your Honor.

17 JUDGE DOUGAL: What did I say? You had 23 minutes I think I
18 said.

19 MR. STAMPATOPOULOS: That's right. I think so. I don't think I'll
20 need 23.

21 PATENT OWNER SURREBUTTAL

22 MR. STAMPATOPOULOS: First of all, let me thank my colleague
23 for what it appears to be an area of conversation in networking and
24 modification of systems. This area of conversation, however, is not
25 evidence. What opposing counsel did in high school, what he did in college,

1 his ability to reprogram and re-tweak networks is no more evidence than my
2 inability to do so. What's needed here is expert testimony, expert testimony
3 that shows that a person of ordinary skill in the art could actually have done
4 so.

5 And you have two pieces of expert testimony which are critical. You
6 have Mr. Gomez who said a person of ordinary skill in the art couldn't
7 modify Vink if they tried. And you have then Dr. Hou who said certain
8 pieces of software -- and I'll take you back to his testimony, starting on page
9 110. And I'd invite the Board to look at page 110 of Exhibit 2027, which is
10 Dr. Hou's deposition transcript. What were the functionalities? I'll give you
11 a second to get there.

12 What were the functionalities that a person of ordinary skill in the art
13 would have to program in software in order to modify Vink's system in view
14 of Patrick's teachings to provide the option in Vink's system for the master
15 units to be connected to an external packet-switched network?

16 And he goes -- he starts giving his answer, right? One thing I want
17 to -- I want to pause here for a second because Petitioner said that the record
18 speaks to itself about how Vink also discloses a hierarchical system and
19 directed you to Petitioner's slides 30 and 31. Let's go to Petitioner's slides 30
20 and 31. If it were true that Vink disclosed a hierarchical network, all Dr.
21 Hou would have to say in answer to my question is that there's no
22 reprogramming needed because Vink is already hierarchical.

23 The reason Dr. Hou is even answering my question is because there is
24 no testimony from Dr. Hou that Vink is hierarchical. Just like opposing
25 counsel's discussion of his high school projects -- and I apologize if I'm

1 mischaracterizing the academic level of those projects; maybe they were in
2 college -- this is attorney argument. This is attorney argument, not evidence.

3 The evidence shows that both experts have testified that Vink is non-
4 hierarchical. Neither of the experts has testified that Vink is also
5 hierarchical -- excuse me. Let me start over. Both experts have testified that
6 Vink is non-hierarchical. Neither of the experts has testified that Vink is
7 also hierarchical.

8 And one of the experts, Mr. Gomez, has conclusively testified that
9 Vink is only non-hierarchical. And then Petitioner's expert, Dr. Hou, has
10 given a three or four page mostly non-responsive answer as to what would
11 be needed to take Vink's non-hierarchical system to make it hierarchical,
12 which is probative of the fact, if not definitive proof, that Vink is only non-
13 hierarchical. Everything else is attorney argument. The record is clear. It
14 speaks for itself.

15 If you look at Dr. Hou's testimony now, starting from page 110, he
16 starts talking about integrations. And again, I don't want to go into the
17 whole read-the-record process, but the key point that Petitioner
18 highlighted -- and that's all you really need to look at -- in its slides is that,
19 you know, there were certain off-the-shelf platforms, Red Hat and LINUX
20 that allowed a person of ordinary skill in the art to obviate the modification.

21 In other words, what Dr. Hou is saying here is that a person of
22 ordinary skill in the art may not have needed to reprogram Vink because
23 there were these off-the-shelf solutions. He didn't identify these off-the-
24 shelf solutions with any specificity. He clearly hadn't done the analysis. He

1 even said, I don't exactly have an opinion about the priority date. And then
2 you have Mr. Gomez who says, I'm not aware of any off-the-shelf solutions.

3 And by the way, when we submitted our surreply -- sorry. When we
4 submitted our Patent Owner response and Mr. Gomez submitted his
5 declaration, we were preparing for a deposition of Mr. Gomez. We were
6 preparing for a supplemental declaration by Dr. Hou, which was never
7 forthcoming. Petitioner had every opportunity to explain why this was
8 available off-the-shelf.

9 And Your Honor, you asked some questions about case law earlier.
10 Unfortunately, I don't have it at the tip of my fingers, and I don't have the
11 case in front of me right now. I'm happy to take up your question later if
12 you deem it necessary or helpful. But what I will say is that if you look at
13 the facts of this case, this is not a case of a commercially available --
14 whether a commercially available solution would, as a matter of law, render
15 something obvious.

16 This is a case about whether a commercially available solution even
17 exists. And the weight of the evidence shows that there is no such
18 commercially available solution number one. Number two, you need a
19 custom solution. That's in the Gomez declaration and in our briefing. And
20 that custom solution required a level of skill above what the level of skill in
21 the art is.

22 And you have no testimony from Petitioner's expert, regardless of
23 whether it's two years or five years or ten years, that's showing or even
24 saying that this is something in the wheelhouse of person of ordinary skill.
25 There's a failure of proof here. That's the issue. There's a failure of proof.

1 I mean, even if Petitioner had submitted a declaration, a truthful
2 declaration, then you'd still probably get to the same answer because there
3 were no such solutions commercially available. Fact of the matter is there's
4 no such declaration. There's no expert evidence on the issue, other than Mr.
5 Gomez.

6 There was a point made about modems and that modems can provide
7 direct access. The point about modems was not that, you know, because you
8 have modems, you need to go through -- because you have modems, any
9 subscriber can connect in any way through the network. I'm not sure exactly
10 what the statement -- or the re-statement of our argument was by Petitioner.

11 The point we were making about modems was simply that -- first of
12 all, modems are not disclosed in Vink, as stated in our surreply. So it's not
13 even a possibility in Vink. It doesn't talk about modems. Point number two
14 is that if you had modems, presumably, you would not have to go through
15 same topology that Vink goes through.

16 This is a very specific topology that the '904 patent describes. There
17 is two masters, both masters have access to a core network, both masters, in
18 some way, shape, or form provide access to the slaves. In the event of a
19 fault, the second master may kick in. There's other embodiments where it
20 happens simultaneously. I'm not going to go into the detail.

21 The point is, about modems, that a modem could theoretically be
22 used by a person of ordinary skill in the art to use any type of architecture to
23 access a core network other than Vink's. And I'll say it again, Vink doesn't
24 disclose modems, which should address Petitioner's argument about
25 modems.

1 In any event, I'll stop here. Unless you have any questions, I'll rest.
2 And if you do want me to follow up, if you would like the Patent Owner to
3 follow up on the case law that you mentioned, we'd be more than happy to
4 do so.

5 JUDGE ENGELS: I don't think that's necessary. Thank you for your
6 argument.

7 MR. STAMPATOPOULOS: Thank you.

8 MR. HA: And if Your Honors want me to address the Muniauction, I
9 studied it while Counsel was talking, and I'm happy to share, but if you don't
10 feel the need, then I will be fine.

11 JUDGE ENGELS: I don't think it's necessary. Thank you.

12 MR. HA: Thank you, Your Honor.

13 JUDGE DOUGAL: Okay. Seeing no further questions, our hearing
14 is adjourned.

15 (Whereupon, the above-entitled matter went off the record at 4:00
16 p.m.)

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