

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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CISCO SYSTEMS, INC.,

Petitioner,

v.

PORTSMOUTH NETWORK CORP.,

Patent Owner.

Case IPR2024-00506

Patent 8,014,394

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DEPOSITION OF DR. HENRY HOUH

Conducted Remotely

15 Ballard Terrace

Lexington, Massachusetts

January 17, 2025

9:36 a.m. to 11:39 a.m.

Reporter: Laurie J. Berg, CCR, RPR, CRR

IPR2024-00506

Cisco Systems, Inc. v. Portsmouth Network Corp.

Cisco's Exhibit 1034

EX1034, Page 1

A P P E A R A N C E S

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DEPONENT: DR. HENRY HOUH

(Present via videoconference.)

EXAMINATION PAGE

(BY ATTORNEY CAPPAERT) 7

(BY ATTORNEY CHO) 68

E X H I B I T S

NO. PAGE

Exhibit 1001 United States Patent US 8,014,394 B2,

Sep. 6, 2011, Ram et al. (14 pages) 13

Exhibit 1002 Declaration of Henry H. Houh, Ph.D.

on Behalf of Petitioner (150 pages) 25

Exhibit 1003 Curriculum Vitae, Henry H. Houh

(13 pages) 11

Exhibit 1007 Declaration of Wang Xiaojing and

Attachments (147 pages) 49

Exhibit 1010 United States Patent Application

Publication US 2006/0224877 A1

Oct. 5, 2006, Jain et al.

(10 pages) 58

E X H I B I T S

(continued)

NO. PAGE

Exhibit 2001 Notice of Deposition of Dr. Henry
Houh (three pages) 6(Original exhibits marked electronically
and retained with the transcript.)

PROCEEDINGS

(Exhibit 2001 premarked for identification.)

MADAM COURT REPORTER: This is Laurie Berg. I am a Registered Professional Reporter and a Certified Realtime Reporter with the National Court Reporters Association, as well as a Certified Court Reporter with the State of New Hampshire. I am a Notary Public in the State of New Hampshire and the Commonwealth of Massachusetts.

The attorneys participating in this proceeding acknowledge that I am not physically present in the proceeding room, nor am I physically present with the witness, and that I will be reporting this proceeding remotely via videoconference.

They further acknowledge that, in lieu of an oath administered in person, the witness will verbally declare his testimony in this matter under the penalty of perjury.

The parties and their counsel consent to this arrangement and waive any objections to this manner of reporting the proceeding.

Will the attorneys now please indicate your agreement by stating your name and your agreement on the record, after which I will swear in the witness and we may begin.

MS. CAPPAERT: Kate Cappaert from Steptoe, I agree.

MR. CHO: Taeg Sang Cho from Desmarais LLP on behalf of Cisco, I agree.

(Deponent sworn.)

MADAM COURT REPORTER: Thank you very much. You may proceed.

DR. HENRY HOUH

having been satisfactorily identified and duly sworn remotely by the Notary Public, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. CAPPAERT:

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

A. Yes, my name is Henry H. Houh. And that's spelled H-O-U-H.

Q. And do you understand that you're here to be

deposed today?

A. Yes.

Q. And that means that you will tell the truth?

A. Yes.

Q. Where are you taking the deposition from today?

A. I am at my home in Lexington, Massachusetts.

Q. Do you have anyone else in the room with you today?

A. No.

Q. Do you have any materials or documents in front of you today?

A. I do.

Q. What do you have in front of you?

A. I have a printed clean copy of the '394 patent. All the printouts I have are clean, unmarked. I have a copy of my declaration in this matter. I have a copy of the Weyman reference and I have a copy of the Jain reference.

Q. Okay. So you have a clean copy of the '394 patent, your declaration and the Weyman and Jain references; is that right?

A. That's right.

Q. Do you have any windows on your computer open

other than this video and Agile Law?

A. Not on this desktop, no.

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

A. Yes.

Q. About how many times?

A. I've long lost count, but it's probably around 200 times, give or take some.

Q. The -- I -- I will -- I will spare the time in going over the ground rules for depositions because of the number of times you've been deposed. But in general, if you need a break, please let me know and we'll try to break as soon as possible.

Does that sound good?

A. Yes, thank you.

Q. Is there any reason that you cannot testify truthfully and accurately today?

A. No.

Q. Okay. So Dr. Houh, I entered a document, Exhibit 2001.

Do you see that?

A. (Deponent viewing exhibit.) Yes.

Q. And this is your deposition notice for IPR2024-00506, right?

1 A. (Deponent viewing exhibit.) It looks like
2 it, yes.

3 Q. And IPR2024-00506 is the proceeding for which
4 you are being deposed today?

5 A. Yes, that's right.

6 Q. Have you seen this deposition notice before?

7 A. I -- I don't think I have, actually.

8 Q. Did you prepare for today's deposition?

9 A. Yes.

10 Q. How much time did you spend preparing?

11 A. Probably -- probably a full day's worth of
12 time spread out over -- well, maybe a little more than
13 that.

14 Q. Spread out over --

15 A. A --

16 Q. -- a number of days?

17 A. Yeah.

18 Q. How many days?

19 A. Four -- four days maybe.

20 Q. Did you meet with anyone?

21 A. Yes.

22 Q. Who did you meet with?

23 A. I met with Tim Cho, or Taeg Sang, and
24 Jonathan Lewis.

1 A. (Deponent viewing exhibit.) Yes.

2 Q. Have there been any updates to your CV since
3 this version was filed in this case?

4 A. Yes, I have made updates to it.

5 Q. What updates have you made?

6 A. I think I added a number of cases to the
7 ca -- list of cases I've worked on.

8 Q. What types of cases are those?

9 A. I think several IPRs. I think I maybe
10 submitted dec -- reports in -- of district court cases
11 as well. I think I -- I've testified in -- at trial
12 since then. I may have added that to an existing
13 entry. Those types of things. I probably was deposed
14 on a few cases that are listed here where I added that
15 I was deposed.

16 Q. You mentioned IPRs.

17 About how many IPRs have you been involved
18 in?

19 A. Yeah, I don't -- I don't -- I couldn't give
20 you an exact number.

21 Q. Over 50?

22 A. Yes, definitely.

23 Q. Over a hundred?

24 A. Yes.

1 Q. How many hours would you estimate you've
2 spent working on IPR2024-00506, put a date in?

3 A. I -- I don't know if I could give you a -- a
4 good estimate or a number.

5 Q. You have -- you don't have any general
6 estimate of how much time you've spent working on this
7 case?

8 A. I don't remember all the time I spent on this
9 case. I mean, some of it, I spent almost a year ago.

10 Q. So you're not able to ballpark the amount of
11 time?

12 A. I mean, I don't really want to speculate. I
13 -- I simply don't remember the exact amount of time I
14 put in on this case.

15 MS. CAPPAERT: I'm going to enter another
16 exhibit. Give me one moment. It's Exhibit 1003.

(Exhibit 1003 marked for identification.)

18 BY MS. CAPPAERT:

19 Q. Let me know when you see that.

20 A. (Deponent viewing exhibit.) Okay. I have it
21 up now.

22 Q. And this is a document previously marked as
23 Exhibit 1003 in this proceeding.

24 Exhibit 1003 is your CV; is that right?

1 Q. Are you generally on the Petitioner's side or
2 the Patent Owner's side or is it a mix?

3 A. Well, I've done a mix of Patent Owner and
4 Petitioner-side cases, but I -- I would say that it's
5 more Petitioner side.

6 MS. CAPPAERT: Okay. I am going to enter
7 another exhibit. Give me a moment. It's previously
8 been marked in this case as Exhibit 1001.

(Exhibit 1001 marked for identification.)

10 BY MS. CAPPAERT:

11 Q. Let me know when you can see it.

12 A. (Deponent viewing exhibit.) I can see it
13 now.

14 Q. And Exhibit 1001 is US Patent Number
15 8,014,394, right?

16 A. (Deponent viewing exhibit.) Yes.

17 Q. If I refer to it as the "'394 patent," will
18 you understand what I'm referring to?

19 A. Yes.

20 Q. And you've seen the '394 patent before today,
21 right?

22 A. Yes.

23 Q. Are you able to estimate how much time you've
24 spent reviewing the '394 patent?

1 A. I mean, I review it and then I look at it
2 again and again and again, so I don't really think I
3 could give you that good of an estimate.

4 Q. Okay. So you're not able to give an estimate
5 on how much time you spent looking at the '394 patent;
6 is that right?

7 A. I mean, it's -- it's -- you know, I look at
8 it quite often and it's -- it's -- it's hard to put
9 together a -- a good number.

10 Q. When you say you "look at it quite often,"
11 what do you mean?

12 A. Well, I -- I review it at the beginning of
13 when I first start a case, and then when I'm working
14 on my declarations, I will refer back to it during
15 that process of working on my declarations, and I --
16 I've been reviewing it again in preparation for today.

17 Q. Were you familiar with the '394 patent before
18 you began work on the -- this IPR proceeding?

19 A. I -- I don't recall it before I was engaged
20 on this case, along with some other related matters on
21 this case, so I -- I don't recall being -- having seen
22 it before, being engaged on this and related matters.

23 Q. Okay. If we can look at Figure 1 of the
24 '394 patent.

1 And let me know when you're looking at it.

2 A. (Deponent viewing exhibit.) Okay. I have
3 it. I'm also looking at it in -- I'm on my printed
4 copy.

5 Q. Yes. I recognize that that may be somewhat
6 easier than trying to turn your head to review the PDF
7 sideways, so.

8 In Figure 1 there's a network 20 that
9 comprises a multicast content source 24; is that
10 right?

11 A. (Deponent viewing exhibit.) The
12 specifications in Column 5 at Line --
13 (Reporter interruption.)

14 THE DEPONENT: Oh.

15 A. (Deponent viewing exhibit.) The
16 specification at Line -- Column 5, Line 64, it does
17 talk about how network 20 comprises a multicast
18 content source 24 --

19 Q. Okay.

20 A. -- which provides multicast content to
21 multicast clients 28. Sorry, it goes on, but that's
22 -- that's what the specification says about it.

23 Q. So Figure 1 shows network 20 that comprises,
24 at least in part, a multicast content source 24,

1 right?

2 A. Well, I -- I see blocks on the Figure 1, but
3 the description pre -- says it -- network 20 does
4 comprise the multicast content source 24, as -- as I
5 directed you to earlier.

6 Q. And one of the blocks in Figure 1 is block 24
7 which is labeled multicast content source, right?

8 A. (Deponent viewing exhibit.) Yes, I see that.

9 Q. Okay. And Figure 1 also has three blocks
10 that are numbered 28.

11 Do you see that?

12 A. (Deponent viewing exhibit.) Yes, I see that.

13 Q. And the blocks that are numbered 28 are
14 multicast content clients; is that right?

15 A. (Deponent viewing exhibit.) That's how
16 they're labeled in the specification -- sorry -- in
17 the Figure 1, but the specification sometimes just
18 refers to it as multicla -- multicast clients 28.

19 Q. And Figure 1 also has a -- a larger box
20 labeled 32.

21 Do you see that?

22 A. (Deponent viewing exhibit.) Yes.

23 Q. And 32 is a network element, right?

24 A. (Deponent viewing exhibit.) If you look at

1 the specification in Column 5, Line 66, it does say
2 network element 32, and that's consistent with the
3 label in the upper left-hand corner of the box on
4 Figure 1.

5 Q. Okay. And looking at -- or in the context of
6 the '394 patent, multicast content source 24 is
7 typically a network router; is that right?

8 A. (Deponent viewing exhibit.)

9 Q. And if it would help, if you look at
10 Column 6, Line 15, it says, Multicast sources
11 typically comprise network routers.

12 Do you see that?

13 A. (Deponent viewing exhibit.) I -- I do see
14 that line.

15 Q. And do you agree that multicast sources
16 typically comprise network routers?

17 A. (Deponent viewing exhibit.) I mean, it does
18 say that at -- at Line 15 in Column 6, as you point
19 out, but it does -- it does say that -- that it's
20 typical and not necessarily -- I -- it -- it's -- it's
21 all saying it's -- they -- they typically comprise
22 network routers.

23 Q. Can multicast sources comprise things other
24 than network routers?

1 A. Well, I think that -- that statement in the
2 specification is somewhat open-ended, and in the sense
3 that it -- they can typically comprise network
4 routers, but it's not -- it doesn't say exclusively or
5 only comprises network routers, so the language is --
6 is somewhat permissive, as used in the specification.

7 Q. In your experience, can multicast sources
8 comprise things other than network routers?

9 A. (Deponent viewing exhibit.) I'm just looking
10 at the '394. I don't see -- at least just my quick
11 scan of the context, there are -- that it says
12 anything else. But in my experience, I have seen
13 multicast content sources be, like, computer servers,
14 for example.

15 Q. Okay. So in your experience, you've seen
16 multicast sources also include, for example, computer
17 servers; is that right?

18 A. In -- in my experience, I have seen that
19 before.

20 Q. And then, I want to talk about the -- the
21 multicast clients.

22 Multi -- the '394 patent discloses that
23 multicast clients can comprise various sorts of
24 computing platforms; is that right?

1 A. (Deponent viewing exhibit.) It does say that
2 in the specification around line -- Column 6,
3 Lines 17, 18 and -- and around there.

4 Q. Okay. And some examples that the '394 patent
5 gives are, for example, set-top boxes, right?

6 A. (Deponent viewing exhibit.) It does give
7 that as one of the examples that a multicast client
8 may comprise -- if you look at Column 6, Lines 16
9 and 17.

10 Q. Okay. And another example that it provides
11 are -- is desktop computers may be an example of a
12 multicast client; is that right?

13 A. (Deponent viewing exhibit.) The
14 specification does give desktop computers as another
15 example of -- of what the multicast clients may
16 comprise around Column 6, Line 18 and 19.

17 Q. Okay. Looking back at Figure 1 for a moment,
18 in Figure 1, there are multiple line cards 36.

19 Do you see that?

20 A. (Deponent viewing exhibit.) I do see
21 multiple boxes in Figure 1 labeled as line card 36.
22 I -- there -- I see three of them.

23 Q. Okay. So you see the three boxes labeled
24 as 36 that are labeled as -- or, sorry, strike that --

1 three boxes numbered 36 that are labeled as line card
2 in Figure 1, right?

3 A. (Deponent viewing exhibit.) Yes, I see that.
4 And that's consistent with the specification in
5 Column 6 in various places.

6 Q. Right. And the specification describes that
7 the network element 32 comprises multiple processing
8 units, such as line cards 36, right?

9 A. (Deponent viewing exhibit.) Column 6 at
10 Lines 23 and 24 do say that.

11 Q. So in the context of the '394 patent, a line
12 card is an example of a processing unit, right?

13 A. (Deponent viewing exhibit.) I think that's a
14 fair interpretation of what the spec says.

15 Q. I want to look at Column 6, Line 47 to 49.

16 Let me know when you see that.

17 A. (Deponent viewing exhibit.) Okay. I'm
18 there. Oops. Sorry.

19 Q. It's okay.

20 And in Column 6 Lines 47 to 49, the '394
21 patent states, In a typical configuration, line
22 cards 36 can be inserted and removed, and then in
23 parentheses, it says, in quotes, hot swapped, while
24 the network element is operational.

1 Do you see that?

2 A. (Deponent viewing exhibit.) Yes, I see that.

3 Q. So in the '394 patent, a processing unit,
4 such as a line card, can be inserted or the added
5 while the network element is operational, right?

6 A. (Deponent viewing exhibit.) Well, it doesn't
7 use the word "added" here in this language, but it
8 does say it can be inserted while -- while the network
9 element is operational.

10 Q. Okay. Do you -- in your opinion, is there a
11 difference between the words "inserted" and "added"?

12 MR. CHO: Objection.

13 A. (Deponent viewing exhibit.) Well, I mean,
14 the -- the specification here talks -- uses the word
15 "inserted," but I'm aware that the cl -- the claim --
16 some of the claims use the phrase "added" with respect
17 to the time -- the action.

18 Q. If a line card is inserted into the network
19 element, is the line card being added into the network
20 element?

21 A. I -- I mean, I think a person of ordinary
22 skill, you know, looking at this, I think they'd
23 understand that insertion is one form of -- of adding
24 something, that that's one way to add something to

another element or device.

Q. Okay. I'd like to turn now to the claims. You mentioned the claims, so let's go look at the claims.

So let's start with Claim 1 of the '394 patent. In Claim 1 -- let me get the right column number for you. Give me one second. Column 12, Line 21.

Let me know when you see that.

A. (Deponent viewing exhibit.) Yes, I see Line 21.

Q. And it start -- it starts with the, wherein aggregating.

Do you see that?

A. (Deponent viewing exhibit.) Yes.

Q. So Claim 1 of the '394 patent recites, wherein aggregating the ports comprises setting an upper limit on a number of the multicast packet streams that are permitted for forwarding over the high-capacity port, right?

A. (Deponent viewing exhibit.) Yes, that's what it says.

Q. What is your understanding of the meaning of "setting an upper limit on a number of the multicast

packet streams" in the context of the '394 patent?

A. (Deponent viewing exhibit.) Well, I think a person of ordinary skill would be doing this and looking at the -- that claim language would look in the specification and they'd see an example.

If you look at Column 8, starting at around Line 36, and going for a couple paragraphs, and it talks about how, there in -- in the second paragraph there, line 30 -- sorry, did I say 36 or -- starting at -- yes, 36, there is a -- it talks about a maximum bandwidth of the ports and that the network element only -- allows only a limited number of multicast streams to be forwarded over any given port and that the maximum allowed number of multicast streams may be set to each port and it could be the same for all ports -- I'm slightly paraphrasing here -- or different for different ports, and that -- that in these embodiments, filtering database 52 hold port counters, which are indicative of a number of multicast streams that are permitted for forwarding over each port, or of the number of additional streams that the port can still support.

So that's an example of -- of -- in the spec of a table holding the maximum number of multicast

streams permitted for each port, and it's basically because -- it goes on to describe -- and I'm going to par -- paraphrase -- but there's only a limited amount of bandwidth on -- on -- ports can support, so that -- that would -- they want to cap the number of streams.

Q. Okay. So in this example that you're discussing, the -- the table is setting an upper limit of the number of streams that can be handled; is that correct?

MR. CHO: Objection.

A. Well, I mean, the table contains the maximum number of streams or how many are -- are -- it can -- left it can support, either one, but it could just contain the maximum number of streams. I think that when -- when that entry is made in the table, then I would say it's set, but I think the table simply holds the maximum number.

Q. So when it -- the entry is made in the table, you would say that it's set, the table itself is just holding the maximum number of streams; is that correct?

A. Yeah. With the --

MR. CHO: Objection.

A. -- with --

(Reporter interruption.)

MR. CHO: Yes. There was an objection.

Sorry.

A. Yeah. I mean, the -- that part of the specification doesn't talk -- I don't think it used the word "set" or -- but I -- it's describing the table that holds it, and if you -- if you're referring to the table to -- to enforce the maximum, then when -- when another entry is put into the table, it's -- it's -- it's then able to be used by the enforcement checking part.

MS. CAPPAERT: I'm going to enter another exhibit. This is what I've previously marked as Exhibit 1002.

(Exhibit 1002 marked for identification.)

BY MS. CAPPAERT:

Q. Let me know when you can see it.

A. (Deponent viewing exhibit.) Okay. I have it open.

Q. Okay. And this is exhibit -- what was previously marked as Exhibit 1002 is the declaration that you submitted in IPR2024-00506, right?

A. (Deponent viewing exhibit.) Yes, that's right.

1 Q. Okay. And give me a second. If you scroll
2 to the last page, Page 150 of the document, is that
3 your signature?

4 A. (Deponent viewing exhibit.) Yes, that's my
5 signature.

6 Q. I want to look at Paragraph 89, which is on
7 Page 50 of your declaration.

8 A. Okay.

9 Q. Okay. And in Paragraph 89, you're talking
10 about the prior art reference, Li.

11 Do you see that?

12 A. (Deponent viewing exhibit.) Yes, I do.

13 Q. And Li is one of the references that you rely
14 on as part of the obviousness combination phrased in
15 your declaration; is that right?

16 (Reporter interruption.)

17 MS. CAPPAERT: Part of -- sorry. Part of
18 the obviousness combination.

19 A. Yes, I do rely on Li as one of -- obviousness
20 combination and a number of the grounds.

21 Q. Okay. And in Paragraph 89, you state, Li
22 further discloses that the multicast router 91 looks
23 to the maximum number of multicast channels allowable
24 on its service port, right?

1 A. (Deponent viewing exhibit.) Yes, I say that.

2 Q. And you state that Li is -- discloses that
3 the multicast router 91 looks to the maximum number of
4 multicast channels allowable on its service port in
5 order to determine whether a requesting multicast
6 client has permission to join a particular multicast
7 channel; is that right?

8 A. (Deponent viewing exhibit.) That's what
9 Paragraph 89 says.

10 Q. And so, in that, is Li, in your understanding
11 of Li, looking to the maximum number of multicast
12 channels in order to determine whether the maximum
13 number of allowable channels has been met on the
14 service port?

15 MR. CHO: Objection; form.

16 A. Well, Li does use that language of multicast
17 channels in the excerpt that I provided from Li, but
18 it's discussing the channels and the packet streams
19 and -- and how they're used in a very similar way to
20 the way the '394 patent describes multicast packet
21 streams.

22 Q. So in your declaration, you're comparing Li's
23 multicast channels to the '394 patent's multicast
24 packet streams; is that fair to say?

1 A. (Deponent viewing exhibit.) I am making that
2 mapping, but -- but if you look at this -- the
3 analysis with respect to 1k, this is part of the
4 background, but it -- I'm just simply discussing the
5 background here.

6 But later on, I do talk about the channels in
7 the section -- the -- the channels of Li in the
8 section starting on Page 91 of my declaration about
9 the limit on the number of the multicast packet
10 streams.

11 So I am -- I am mapping that, and it's
12 because the -- the way Li discusses channels is very
13 similar to the way the '394 patent discusses joining
14 multicast packet stream, for example, using an address
15 and -- and Li describes the channel -- getting the
16 channel using a -- a multicast IP address or something
17 like that. And the '394 patent, in various places,
18 talks about switching channels by switching the
19 multicast packet streams, for example.

20 Q. So -- and I believe you pointed -- you went
21 to around Paragraph 154 of Exhibit 1002; is that
22 right?

23 A. Yes, that -- that was what I was referring to
24 on Page 91, that -- that section.

1 Q. And in that section, you're discussing Li in
2 the context of claim element 1k of the '394 patent,
3 correct?

4 A. (Deponent viewing exhibit.) Yes, that is
5 part of what I'm discussing, but I also refer to other
6 sections within that section.

7 Q. Okay. But Paragraph 154 itself falls under
8 the header for claim element 1k; is that right?

9 A. Yes, that's right.

10 Q. And claim element 1k recites, wherein
11 aggregating the port comprises setting an upper limit
12 on a number of the multicast packet streams that are
13 permitted for forwarding over the high-capacity port,
14 right?

15 A. Yeah, I think you read that correctly.

16 Q. And I believe what you just said is that you
17 are -- for this limitation, you are pointing to Li's
18 discussion of the maximum number of access multicast
19 channels allowable; is that right?

20 A. (Deponent viewing exhibit.) I do highlight
21 that in one of the excerpts from Li in Paragraph 154.

22 Q. Okay. And so -- so in your analysis in
23 Paragraph 154, and with respect to claim element 1k,
24 you are comparing Li's discussion of multicast

1 channels to the '394 patent's discussion of multicast
2 packet streams; is that right?

3 A. Yes, that's right, because the '394 patent
4 does use those kind of synonymously with respect to --
5 for example, there's some examples about channel
6 zapping or -- or surfing. I could point
7 [indiscernible] -- point some out to you.

8 (Reporter interruption.)

9 THE DEPONENT: Yes.

10 BY MS. CAPPAERT:

11 Q. Sure.

12 A. (Deponent viewing exhibit.) For example, if
13 you look at Column 7 of the '394 patent starting
14 around Line 46, it talks about, For example, in an IP
15 application -- ahh, sorry -- IPTV application, when a
16 multicast client 28, e.g., a set-top box, switches,
17 paren and quote, zaps, from one television channel to
18 another, the client sends a request to stop receiving
19 the content of the previous channel and to start
20 receiving the content of a new channel. In some
21 embodiments, where a request conforms to the IGMP or
22 MLD protocols, cited above.

23 And in those protocols, that's the -- IGMP is
24 part of the way to join and Li -- and -- and requests

1 for receiving specific multicast packet streams that
2 are -- by -- by -- for example, using a IGMP address.
3 And -- and Li discusses in sections, various parts,
4 that that's how -- it's -- it's the same way of -- of
5 requesting some con -- channel using its IP multicast
6 address.

7 And I think there's another example in the --
8 in the '394 patent of zapping, but it talks about it
9 the same way. In fact, it may even use the -- yeah,
10 so it even uses the -- the phrase "multicast packet
11 stream."

12 For example, if you look in Column 4,
13 Line 46, it says, for example, in an IP -- Internet
14 Protocol Television, IPTV, application, when a user
15 switches or, in paren, quote, zaps, from one
16 television channel to another, the user set-top box
17 initiates a process of stopping to receive one
18 multicast packet stream and starting to receive
19 another multicast stream.

20 So -- so those are a couple of examples from
21 the spec of how it discusses multicast packet streams
22 in the content -- and channels, basically in the -- in
23 the same way.

24 Q. In your opinion, are multicast channels

1 always at the end of multicast packet streams?

2 A. Well, those examples in the '394 spec kind
3 of, you know, equate the -- the channel surfing
4 changing to the same -- the process of changing
5 multicast packet streams or multicast streams. So
6 at least in that example, that -- that's how the
7 '394 patent discusses channels and multicast packet
8 streams.

9 Q. So are multicast channels always the same as
10 multicast packet streams?

11 MR. CHO: Objection.

12 A. Well, tho -- those two examples from the
13 '394 spec talk about, you know, changing the channel
14 by changing the multi -- by -- by getting a different
15 -- or changing the multicast packet stream or, you
16 know, requesting -- like, stopping one, requesting
17 another, and so that's -- that's how the '394 patent
18 discusses them.

19 And -- yeah, that's how the '394 patent
20 discusses them.

21 Q. So are you saying that the '394 patent --
22 strike that.

23 Are you saying that in the '394 patent,
24 channels are the same as multicast packet streams?

1 A. I'm saying that in several examples in the
2 '394 patent. They -- they use it in those two
3 examples of zapping in Column 4 and Column 7, the
4 specification uses it that way, that -- that changing
5 channels is just changing multicast packet stream, so
6 it's kind of using them in a very similar way.

7 Q. When you say that the '394 patent's using
8 channels and multicast packet streams in a similar
9 way, is it your opinion that multicast channels are
10 the same as multicast packet streams?

11 A. Well, I think both the Li reference and the
12 '394 reference kind of talk about it in a similar way;
13 that is, I don't know that -- that Li uses the phrase
14 "multicast packet stream," but it talks about getting
15 and joining or requesting content.

16 I -- I don't ha -- I -- I don't have a
17 printed copy of Li with me, but -- but we could -- I
18 could look for it in Li, but Li talks about requesting
19 a -- I don't remember the exact language, requesting a
20 channel by -- by u -- by using an I -- IP multicast
21 address to -- to request it. And -- and that's the
22 way the '394 talks about it as well in terms of --

23 (Deponent viewing exhibit.) Actually, that's
24 -- there's -- for example, on the top of Column 8 in

1 the '394, it talks about, at Line 5, Each entry in
2 filtering database 52 corresponds to a certain
3 multicast stream, which may be identified, for
4 example, by a unique IGMP multicast group address.

5 And there's a similar discussion in -- in Li
6 about requesting the channel -- or I don't remember
7 the exact words, but we can look at that -- by using
8 an IP multicast address and it's -- it's being
9 discussed in the same way. That's how you request a
10 channel in -- in Li, that's how you request a
11 multicast packet stream or a multicast stream here in
12 the '394 patent as discussed in Column 8.

13 So these are -- are -- it's the same concept
14 being discussed using slightly different words.

15 Q. So you are saying -- and I think you kind of
16 veered off of what I was -- was asking in going to Li.
17 I was talking about the '394 patent's disclosures, not
18 about the specific Li reference at this point.

19 So in the context of the '394 patent, I
20 believe you said that the '394 patent uses channels
21 and multicast packet streams in a similar way.

22 In the context of the '394 patent, is it your
23 opinion that multicast channels are the same as
24 multicast packet streams?

1 that -- that -- that, you know, the channel, the --
2 the multicast packet stream, are described as -- as a
3 real -- it's the same -- it's the same concept, but
4 using different layers of language at different layers
5 of abstraction; one, which is what the user thinks of,
6 and the second is actually what the technology
7 actually imple -- how it implements it.

8 So the user thinks of chann -- changing a
9 channel, but underlying that, the -- the technology of
10 the system actually is changing multicast packet
11 streams. And that -- and that's how the '394 has
12 described it in at least those two places.

13 So I think a person of ordinary skill looking
14 at that would understand that those are the same
15 thing, just described using different words for the
16 different concepts at different layers of abstraction.

17 Q. What does the term "multicast packet stream"
18 mean to you?

19 A. Well, for --

20 MR. CHO: Objection. Sorry, I was on
21 mute. Objection, please.

22 A. That's a term used in the -- in the claims,
23 and so the claims I've interpreted, all the claims --
24 claim terms, using their plain and ordinary meaning to

1 A. Well, in the -- those examples given, that --
2 that's -- you know, it's a different layer -- level of
3 abstraction of language, you know. So the user might
4 think of it as a channel that they're zapping between,
5 but underlying in the technology, you know, which the
6 user is not aware of, necessarily, the -- the way you
7 change a channel is by changing multicast packet
8 streams, you know, stopping one, getting another.

9 And so those add a different layer of
10 abstraction, that's how the '394 is describing the
11 same thing, is that you change a channel, switch
12 between channels, by switching between multicast
13 packet streams.

14 And in those two excerpts that talk about
15 zapping, that's -- that's how the specification des --
16 is describing that process at both the user -- what
17 the user, you know, is -- they're thinking they're
18 changing a channel, but underlying that is you're
19 changing multicast packet streams.

20 Q. So in your opinion, is changing a channel the
21 same as changing multipack -- multicast packet
22 streams?

23 A. Well, I think a person of ordinary skill
24 would look at those -- those excerpts and understand

1 a person of ordinary skill in the art in the context
2 of the specification and prosecution history at the
3 time of the invention of -- of the '394 patent.

4 Q. Do you have an understanding of what that
5 plain and ordinary meaning would be for the term
6 multica -- "multicast packet stream" as used in
7 the '394 patent?

8 MR. CHO: Same objection.

9 A. (Deponent viewing exhibit.) So I -- I looked
10 at -- I think a POSITA would look at the spec to see
11 the kind of things that are -- examples are included
12 in what a multicast packet stream would be. I think
13 if you look at -- and by the -- the spec uses
14 multicast packet stream and multicast stream similar
15 -- interchangeably as well.

16 And so, if you look at the top of Column 8,
17 it talks about -- at Line 5, it talks about how, Each
18 entry in filtering database 52 corresponds to certain
19 -- to a certain multicast stream, which may be
20 identified, for example, by a unique IGMP multicast
21 group address.

22 So -- so one characteristic of a multicast
23 packet stream is -- is -- one example characteristic
24 is that they can be identified by an IGMP multicast

1 group address.

2 And so, another thing they -- the -- the -- a
3 person of ordinary skill in the art would understand,
4 for example, when they look at Li, Li talks about
5 these things identified using -- I think the term in
6 Li is IP multicast dre -- address or some -- some --
7 or it's some different permutation of those words.

8 And -- and what's found in Li, which I talk
9 about -- sorry -- that's -- that's in Li, with respect
10 to the channels in 1k, but I do talk about how this
11 element is also met in Weyman --

12 Q. I --

13 A. -- in -- in -- in -- starting around Page 73.

14 So -- so that's what -- that's what I think a
15 POSITA would understand. They'd look at the
16 specification, there are examples given of multicast
17 packet stream, how they're identified, how they're
18 used, for example, synonymously with changing channels
19 is changing multicast packet streams and understand
20 that those are examples of what would be in the scope
21 of a multicast packet stream, things that are also
22 similar.

23 Q. Is a video stream an example of a multicast
24 packet stream?

1 reading.

2 Q. And another example of what a multicast
3 packet stream can carry is audio content; is that
4 right?

5 A. It -- it does list that specifically.

6 Q. And then a third example is that a multicast
7 packet stream can carry IPTV channels; is that right?

8 A. It does say that here, as an example, but it
9 -- but other places, as I pointed out in Column 4
10 and 7, when talking about zapping, is using, you know,
11 the -- the concept of changing a channel and -- and
12 discussing what actually happens in -- in the system
13 itself, which is switching multicast packet streams.

14 So there's kind of a correspondence between,
15 you know, the channel and the multicast packet stream
16 as discussed and as used in the '394 specification.

17 Q. But in the bottom of Column 5 to the top of
18 Column 6, IPTV channels are one example of several
19 things that a multipacket -- strike that.

20 In the bottom of Column 5 to the top of
21 Column 6, IPTV channels are an example of just one of
22 the types of things that a multicast packet stream can
23 carry; is that right?

24 A. Yeah. I -- I think that generally would be.

1 MR. CHO: Objection; foundation.

2 A. (Deponent viewing exhibit.)

3 Q. If it's helpful, let's look at Column 5 --
4 the bottom of Column 5 to the cop -- top of Column 6.

5 Let me know when you're there.

6 A. (Deponent viewing exhibit.) Oh, yeah, I was
7 -- thank you. I was looking for that because I
8 remember something about that.

9 So what the -- what the specification says
10 about it -- about that, is that the source 24 may
11 transmit -- sorry, this is the bottom of Column 5,
12 Line 66 -- Source 24 may transmit multicast packet
13 streams that carry, for example, live IP Television,
14 IPTV channels, video movies, audio content, stock
15 quotes and/or any other suitable type of multicast
16 content.

17 So I -- I think this is not exactly saying
18 what you're asking, but it's saying that the multicast
19 packet stream can carry video movies, for example.

20 Q. So one example of what a multicast packet
21 stream can carry is a video movie; is that accurate?

22 A. (Deponent viewing exhibit.) That -- that --
23 that's what -- I think that's an ac -- fair
24 interpretation of that section I was referring to and

1 There -- there is -- are -- there are further other
2 examples and an IPTV channel is just one of the
3 examples. But elsewhere, it does discuss syn --
4 synonymously with respect to the concept of what a
5 user perceives, that is, they're changing channels,
6 and what the technology layer is doing, which is -- in
7 the system is doing, which is, changing multicast
8 packet streams; stopping one, starting another and
9 receiving the new one, just like they're receiving a
10 new channel when the user thinks they're changing a
11 channel.

12 Q. In your opinion in the context of the
13 '394 patent, is setting an upper limit on a number of
14 multicast packet streams the same as setting a limit
15 on the number of channels?

16 A. Well, in my mapping in 1k, you know, I do
17 discuss the -- the -- Li. And in Li, there is -- it
18 corresponds, there -- there are the same number of
19 channels as multicast streams in Li, because you
20 request a channel using its IGMP group address. It's
21 discussed very similarly to the way the '394 patent
22 identifies multicast packet streams, it's the same way
23 Li identifies multicast packet streams. And there --
24 there -- in Li, you know, I -- there is a

1 correspondence. We -- actually...

2 Could we look at Li? I don't have that in --
3 in the document site.

4 Q. Sure. I'm -- I'm not asking you about Li. I
5 believe my question was, in the context of the '394
6 patent, is setting an upper limit on a number of
7 multicast packet streams the same as setting a limit
8 on the number of channels?

9 A. Well, so -- so in those ex -- some -- those
10 examples in the '394 specification, channel and
11 multicast packet stream are used in the same way, just
12 different words for the -- the same thing at different
13 abstraction layers; one with what the user perceives
14 and a second multicast packet stream at the layer of
15 what system is doing.

16 And so, I think a -- a person of ordinary
17 skill would recognize that -- that there is a
18 correspondence between channel and ma -- multicast
19 packet stream as -- as -- as exemplified in the '394
20 patent itself.

21 Q. I believe that we also just looked at a
22 portion of the '394 patent in which a channel was just
23 one example of what a multicast packet stream could
24 carry; is that correct?

1 A. Sure. When I'm saying there's a
2 correspondence, that's an example. You know, it could
3 be carrying other things. But when it's carrying, you
4 know, a channel -- like, a -- like an IPTV channel,
5 then the '394 patent eq -- kind of equates the channel
6 to what -- to the -- at -- at -- at the -- as to what
7 the user is thinking about to what the underlying
8 system is doing, it's equating to a multicast packet
9 stream.

10 So, yeah, I -- I see your point there. So if
11 -- if -- if the multicast packet stream is -- is not
12 carrying a channel, it's carrying stock quotes, as one
13 of the examples, then the user's not thinking of that
14 as -- in -- in that example as one of the examples.

15 But the specification, when it's talking
16 about channels that are carried -- that are carried
17 over a multicast packet stream, it's using channel and
18 multicast packet stream in the same way, just
19 describing different layers of abstraction; one, what
20 the user is thinking about, and two, what the system
21 is actually doing. So yes, when -- it's when the --
22 the -- I see your point.

23 You know, when the multicast packet stream is
24 carrying a IPTV channel, then it's certainly talking

1 about it in the same way in those other examples of
2 zapping. Those -- you're not zapping and changing
3 stock quotes, that's not what the example is. And so,
4 I -- I see your point there.

5 But when it's -- when -- when the multicast
6 packet stream is carrying an IPTV channel, the spec
7 goes on to use channel and multicast packet stream
8 synonymously, just using it at different layers of
9 abstraction.

10 MS. CAPPAERT: All right. I think we've
11 been going for just over an hour, to give --

12 THE DEPONENT: Okay.

13 MS. CAPPAERT: -- to give Laurie a break,
14 we can go off the record for a minute.

15 (Off the record at 10:36 a.m.)

16 (Recess taken.)

17 (Back on the record at 10:47 a.m.)

18 BY MS. CAPPAERT:

19 Q. So Dr. Houh, I want to look at Claim 1 again.
20 And in Claim 1, around Column 12, Line 18, it says,
21 wherein operating the network element comprises
22 aggregating two or more of the ports to form a
23 high-capacity port.

24 Do you see that?

1 A. (Deponent viewing exhibit.) Yes.

2 Q. So in Claim 1, a high-capacity port is formed
3 by aggregating two or more ports, right?

4 A. (Deponent viewing exhibit.) Yeah, I think
5 that's what -- what that claim element is referring
6 to.

7 Q. And the port -- the aggregated port -- strike
8 that.

9 The ports that are aggregated to form the
10 high-capacity port can be on the same line card,
11 right?

12 A. (Deponent viewing exhibit.) Well, just that
13 element there we're looking at doesn't say anything
14 about requiring that or -- or not requiring that, but
15 it -- it's -- it's open to that.

16 Q. So the -- that claim element that the -- give
17 me a minute.

18 I -- the claim element that the network
19 element comprises aggregating two or more of the ports
20 to form a high-capacity port is open to the ports
21 being on the same line card -- line card; is that
22 right?

23 A. (Deponent viewing exhibit.) Well, if you
24 look at Column 6, Line 61, it talks about how in some

embodiments, two or more ports 44 are aggregated to form a high-capacity port 56, in order to provide high traffic capacity, and it goes on.

But if you look at Figure 1, the labels 44, those -- there are multiple 44s on one line card. There are also 44s labeled on different line cards. So I think a person looking at that would understand that any combination of ports 44 in Figure 1 could be aggregated to form a high-capacity port.

Q. Okay. So ports for multiple lines cards can be aggregated to form a high-capacity port, right?

A. I think the specification is -- is indicating that that -- that -- you know, by that statement there, a person -- person of ordinary skill would say -- understand that it's saying, well, ports 44 may be aggregated to form a high-capacity port, and if you look at Figure 1, the ports 44 in that example, some are on the same line cards, some are on different ones. So I think a person of ordinary skill would understand that it's any -- any of the 44s in the example of Figure 1 could be aggregated to form a high-capacity port.

And that's what it's describing in the specification and the figures.

Q. Right. So the -- the upper limit is on the aggregate of the two or more ports, which, as we just discussed, could be on the same line card or multiple line cards; is that right?

A. I would use -- I -- it's an a-- the aggregate is on -- sorry -- the limit is on the number of multicast packet streams and not on the ports or on the -- I think you left out the concept of multicast packet streams in your question, so, but it -- the limit applies to the maximum number of multicast packet streams, and that's -- that's --

Q. Right.

A. -- [indiscernible] it's on. There's a further limitation that those multipacket -- pa -- multicast packet streams are those that are permitted for forwarding over the high-capacity port.

Q. Right. So -- so -- and I apologize for the phrasing -- poor phrasing of my question.

But the limit is on the number of multicast packet streams that are permitted over the high-capacity port, which is an aggregate of ports from the same line card or different line cards, correct?

A. I think if you combine those two limitations,

Q. Okay. So any of the -- the ports, which are 44 in Figure 1, regardless of whether they are on the same line -- line card or different line cards, can be aggregated to form a high-capacity port, right?

A. That's a specific example that's -- that's given in the specification. In -- in the -- and if you look at Figure 1 where 44 is labeled, they're on -- they could be on the same card, they could be on different line cards.

Q. Okay. And then that next element that we were previously discussing, the wherein aggregating the ports comprises setting an upper limit on a number of the multicast packet streams that are permitted for forwarding over the high-capacity port, that high-capacity port and the upper limit that is set on the number of multipa -- multicast packet streams permitted for forwarding over the high-capacity port could be a limit on ports in a single line card or on multiple line cards, right?

A. (Deponent viewing exhibit.) Well, it has to be an aggregate of ports, and the limit is on the -- on the maximum number of multicast streams that are permitted for forwarding over the high-capacity port, which is an aggregate of two or more of the ports.

that it's the limit on the number of -- of multicast packet streams that are permitted for forwarding over those -- the aggregate port, and the aggregate port is -- is required to be an aggregate of two or more ports. Yeah, that's it.

Q. And those two or more ports can be on the same -- on the same line card or different line cards, right?

A. Well, the specification does, you know, give an example of where it uses the ports 44. And in -- and in the example, Figure 1, 44s are -- there are multiple 44s on the same line card and there are other port 44s on different line cards.

So I think a person of ordinary skill would understand that, and that's part of the specification that's describing any of the -- aggregating any two of the ports labeled 44, which could be on the same line card or it could be distributed across two or more line cards.

MS. CAPPAERT: I'm going to enter, in a moment -- I'm entering what was previously labeled as Exhibit 1007.

(Exhibit 1007 marked for identification.)

BY MS. CAPPAERT:

Q. I marked it as Exhibit 1007 again.

Let me know when you see that.

A. (Deponent viewing exhibit.) Okay. I have it open now. Excuse --

Q. Great.

A. -- me.

Q. And Exhibit 1007 is Li, correct?

A. (Deponent viewing exhibit.) It's the Li reference original plus a certified translation of the -- of the, I think, Chinese -- original Chinese reference.

Q. And this is the version of Li that you relied on in your declaration, correct?

A. (Deponent viewing exhibit.) Yes, I think that's right.

Q. And if you look at Page 70 of the PDF of Exhibit 1007, that's where the English translation begins, correct?

A. Yes, that's right.

So just a word about that. Unfortunately, there are no page numbers on Exhibit 1007, and I think the way to translate between my citations where I give a page and line is to add 71 to the -- what

I've cited to and use that as a PDF page number in this reference 1007.

Q. Okay. But Page 77 of the PDF is where the English translation begins; is that right?

A. I think it's Page 70.

Did you say s -- Page 77 or?

Q. Oh, sorry. Seventy, correct. You're correct. I apologize.

A. (Deponent viewing exhibit.) Yes, I think it starts on Page 70, the English translation.

Q. And Section 54 of -- which is shown on Page 70 of Exhibit 1007 is the title Multicast Service Processing Method, System, and Access Device.

Do you see that?

A. (Deponent viewing exhibit.) I -- I didn't hear every word of what you read. It kind of broke up in the middle.

Q. Sorry. It -- Section 54 on Page 70 of Exhibit 1007 is the title Multicast Service Processing Method, System, and Access Device, right?

A. (Deponent viewing exhibit.) Yes.

Q. Okay. And then I want to look at Page 99 of the PDF.

Let me know when you're there.

A. (Deponent viewing exhibit.) Okay. I -- I'm there.

Q. And on Line 23 of Page 99 of Exhibit 1007, the sentence starts with, In this situation.

Do you see that?

A. (Deponent viewing exhibit.) Yes.

Q. Okay. The full sentence states, In this situation, each xDSL service port is configured with the maximum number of accessed multicast channels allowable, which can be set dependent upon a bandwidth of the xDSL port or as required for management.

Do you see that?

A. (Deponent viewing exhibit.) Yes.

Q. Okay. So in Li, an xDSL port can be configured with a maximum number of accessed multicast channels; is that right?

A. (Deponent viewing exhibit.) I mean, that -- in this section, that's what Li is saying here.

Q. Okay. And then, I want to go back in Li, so let's go to Page 74 of the PDF.

A. (Deponent viewing exhibit.) Okay.

Q. And Page 74, Line 18, about two-thirds of the way down the page, there's a sentence that starts with, For example.

Do you see that?

A. (Deponent viewing exhibit.) Yes.

Q. And it says, For example, if a user fast scans multiple channels 1 to 10 sequentially, video flows of those ten channels are sent concurrently to a multicast service port of the multicast access device for a period of time.

Do you see that?

A. (Deponent viewing exhibit.) I see that.

Q. So Li is stating that the video flows of the channels are sent to a multicast service port, right?

A. (Deponent viewing exhibit.) I think this requires some context because you left off where the multicast streams were being -- I forget what it said back there, but I -- because I'm looking at Page 133 -- and if you look at that, the access device being referred to is -- is connected to the IP metropolitan area network, and it's between the access device and the set-top box that there's a modem. And that -- that would be the subscriber's bandwidth.

So -- so while it's saying you're pushing ten channels to the access device, it -- it's -- it's saying that -- I think that the subscriber -- the subscriber would be the home -- the -- the -- the

1 person or device, the set-top box in the home network.
2 So, I mean, it -- it says what it says, but -- but
3 it's -- it's in the context of the overall layout of
4 the system described in Li.

5 Q. So in Li, Li is discussing channels and then
6 also video flows of the channels; is that right?

7 A. I -- I do recall the word "flows" being used
8 in Li, I think, and I'm -- I -- I don't recall where
9 -- where video flow is used, but sometimes it uses
10 multicast flow, it talks about that as a channel it --
11 it's requesting. So Li uses a number of terms
12 interchangeably as well.

13 Q. So I -- I think if you go back to Page 74 of
14 Exhibit 1007 and look at Line 18, it says -- towards
15 the end of that, it refers to video flows of those ten
16 channels.

17 Do you see that?

18 A. (Deponent viewing exhibit.) I -- I do see
19 that now, yes.

20 Q. So Li is discussing both channels and then
21 video flows of the channels; is that accurate?

22 A. (Deponent viewing exhibit.) Well, I mean,
23 it's -- it's -- the ov -- the overall phrase is "video
24 flows of those ten channels," so I think it's

1 indicating that there's a flow per channel there, a
2 video flow per channel. It's -- I -- I mean, I
3 wouldn't say that they're necessarily separate things
4 that are disjoint, because it's talking about them
5 together.

6 Q. If we go to Page 75, Line 22 --

7 A. (Deponent viewing exhibit.) Okay.

8 Q. -- there's a sentence that starts with, If no
9 joining.

10 Do you see that?

11 A. (Deponent viewing exhibit.) Yes.

12 Q. And it says, If no joining method of the
13 channel sent from another multicast user is received
14 in a defined fast quitting response time, it is
15 considered that no other user is watching the channel
16 and multicast flow of the channel is cut immediately.

17 Do you see that?

18 A. (Deponent viewing exhibit.) Yes.

19 Q. And then it continues, If a joining message
20 of the channel sent from another multicast user is
21 received in the defined fast quitting response time,
22 the multicast flow of the channel continues to be
23 forwarded instead of being cut.

24 Do you see that?

1 A. (Deponent viewing exhibit.) Yes.

2 Q. In Li, the multicast flow of the channel is
3 different from the channel itself; is that correct?

4 MR. CHO: Objection.

5 A. (Deponent viewing exhibit.) I -- I -- I
6 don't think I'd agree with what you're asking there,
7 because what -- what Li is describing here is exact --
8 the same way the '394 patent is talking about channels
9 and multicast packet streams, which is -- which is,
10 they -- they use one layer of abstraction of what the
11 user is perceiving, they're changing a channel.

12 And the underlying system that's describing
13 is talking about the -- the multicast flows just like
14 -- just like the '394 patent talks about changing
15 channels, and the underlying system is actually just
16 changing multicast packet streams here.

17 It's -- it's talking about the user's
18 changing a channel. The channel is identified, as I
19 just saw it here -- well, it -- elsewhere, it does
20 identify the channel or -- I can't -- it equates
21 something -- the requesting of cha -- of a channel or
22 flow, I don't remember which word is used elsewhere in
23 Li to -- to sending an I -- like a message with an
24 IP8, a multicast address.

1 And so, I think this is discussing channels
2 and flows in a -- in a -- in the same way that the
3 '394 patent discusses channels and multicast packet
4 streams or multicast streams.

5 Q. I want to go back for a moment to your
6 declaration and look at Page 104 of your declaration.

7 A. (Deponent viewing exhibit.) Sorry, look
8 where in my declaration again, please?

9 Q. Page 104, Paragraph 188.

10 A. (Deponent viewing exhibit.) Okay.

11 Q. And I just want to confirm that for -- that
12 Paragraph 188, you're discussing claim element 11j,
13 correct?

14 A. (Deponent viewing exhibit.) Yes.

15 Q. And I just want to confirm that your analysis
16 for 11 -- 11j is based on your analysis for claim
17 limitation 1k, right?

18 A. (Deponent viewing exhibit.) I -- I do refer
19 to that analysis. And then, 1k further points to
20 other sections of my report as well --

21 Q. Okay.

22 A. -- the section for just analyzing 11k.

23 Q. I want now to look -- I'm going to enter as
24 an exhibit, and I believe you already have this in

front of you as well, but Exhibit 1010. 1010. It was previously marked as Exhibit 1010.

(Exhibit 1010 marked for identification.)

BY MS. CAPPAERT:

Q. And it's the Jain reference, right?

A. (Deponent viewing exhibit.) Yes, I see that.

Q. Okay. All right. And Jain is titled, System and Method for Controlling Boot-Up Process in a Communications Network Switch, right?

A. (Deponent viewing exhibit.) Yes.

Q. Okay. I want to look first at the abstract of Exhibit 1010, okay?

A. (Deponent viewing exhibit.) Sure.

Q. And the abstract date -- and I apologize for reading all of this in advance, A system and method for controlling an Ethernet node's boot-up process. Upon detecting a system reset condition with respect to the Ethernet node, a link down condition is effectuated on at least a portion of the link ports of the Ethernet node.

Initialization and a configuration of system switch software continues to take place in response to the system reset condition. Responsive to the link down condition, network traffic on the link ports is

discontinued. Upon completion of the system software configuration, a link up condition is effectuated on the link ports, whereupon network traffic on the link ports may recommence.

Do you see that?

A. (Deponent viewing exhibit.) Yes.

Q. Great. So Jain is focused on initializing system software in response to a system reset, correct?

A. (Deponent viewing exhibit.) Well, if you look at the first sentence of the abstract, it's more than just that. It's -- it's a system and method for controlling an Ethernet node that we don't process. And if you look at the specification in the technical field of the invention on -- at Paragraph 4, it says, The present invention generally relates to communications networks. More particularly, and not by way of any limitation, the present invention is directed to a -- to system and method for controlling boot-up process in a communications network entity, such as an Ethernet node.

So I think -- I don't think it -- I think it makes it clear it's more than just what you asked about, I think, with respect to a reset. It's -- it's

more broadly directed to booting -- controlling a boot-up process in a communications network entity, as it says in the abstract at the beginning and in the technical field of the invention section, which -- what I read was the entire technical field of the invention section there.

Q. Initialization of the system software in response to the system reset condition is discussed in Jain, correct?

MR. CHO: Objection; form.

A. (Deponent viewing exhibit.) Could you repeat your question, please?

Q. Sure. Initialization of the system software in response to the system reset condition is discussed in Jain, correct?

A. I -- I think, later on in the abstract, it -- it -- it says those -- those words as part of what it's saying, but it's -- it's -- you know, Jain is directed to a system and method for controlling an Ethernet node's boot-up process, and that is just one specific example of when a boot-up process may be executed.

(Deponent viewing exhibit.) And -- and certainly, the Technical Field of the Invention

doesn't say that a field is about resets or anything like that. It's generally directed to -- it says the present invention is directed to system and method for controlling boot-up process in a communication network entity such as an Ethernet node.

Q. And if you look, the -- the next sentence in the abstract, and we could also look at Paragraph 7, the Summary of the Invention portion. In Paragraph 7, the paragraph starts with, Embodiments of the present disclosure are directed to a system and method for controlling an Ethernet node's boot-up process.

Then the second sentence states, Upon detecting a system reset condition, in parentheses, including, e.g., power-on or boot-up condition, end parentheses, with respect to the Ethernet node, a link down condition is effectuated for a certain period of time on at least a portion of the link ports of the Ethernet node.

Do you see that?

A. (Deponent viewing exhibit.) Yes, I think you read that correctly.

Q. So the link down condition is -- is sent upon detecting a system reset condition.

Is that an accurate summary of that portion

1 of the -- of Jain?

2 A. (Deponent viewing exhibit.) Well, it
3 includes some specific examples, such as, exa --
4 including, e.g. -- this is Line 2 of the right-hand
5 column of Paragraph 7 -- including, e.g., power-on or
6 boot-up condition. So it's saying that the sestem --
7 system reset conditions include simply powering a
8 device on or booting up a devi -- a device.

9 Q. And in response to a system reset condition,
10 a link down condition is effectuated, correct?

11 A. (Deponent viewing exhibit.) I -- it doesn't
12 quite use those words. But I think that's fair if you
13 include that, you know, in response to powering on a
14 device or booting up a device as examples of reset
15 conditions, the link down condition is effectuated.

16 Q. The examples that you refer to in
17 Paragraph 7, the power-on or boot-up condition, those
18 examples do not include adding a new line card,
19 correct?

20 A. (Deponent viewing exhibit.) I mean, it
21 doesn't use that -- those words, but I think there's
22 -- at some point, when you -- when something's added
23 to the system, there -- there are -- it -- it would be
24 powered on or -- or booted up.

1 Q. Okay. And claim element 8j is, wherein
2 operating the network element comprises initializing a
3 new processing unit added to the network element by.

4 Do you see that?

5 A. (Deponent viewing exhibit.) Yes.

6 Q. Okay. And in Paragraph 252 of your
7 declaration, you write, For instance, Weyman discloses
8 that its distributed router, then in quotes, can
9 accommodate the addition or removal of unit, end
10 quotes. And then you cite to Exhibit 1005,
11 Paragraph 69, and then you continue, and, in quotes,
12 if a unit with a default configuration joins the
13 fabric, it needs to update its configuration to that
14 of the distributed multicast router, and you cite to
15 Exhibit 1005, Paragraph 156.

16 Do you see that?

17 A. (Deponent viewing exhibit.) Yes.

18 Q. So in your view, Weyman discloses a new
19 processing unit is add -- added to the network element
20 because Weyman discloses that a unit can be added; is
21 that fair to say?

22 A. Ye -- yes. And if you look at the units that
23 are discussed in Weyman, I think, elsewhere, they are
24 -- they are -- they include processing units.

1 Q. Jain --

2 A. You know, at -- at some point for -- in the
3 life of that device, it's powered on or booted up of
4 -- of whatever's inserted. But no -- but no, I mean,
5 this -- this sentence -- this paragraph, doesn't
6 specifically talk about insertion of anything, I don't
7 think.

8 Q. Okay. Give me one moment.

9 Can we -- let's go to your declaration again.
10 And let's go to Page 131 of your declaration.

11 A. Did you say "Page" 131?

12 Q. Yes, Page 131.

13 A. (Deponent viewing exhibit.) Okay. I'm
14 there.

15 Q. And on Page 131, specifically, let's look at
16 Paragraph 251.

17 And in Paragraph 251, you're discussing how,
18 in your opinion, Weyman, Jain and LeMaire each claim
19 limitation 8j, correct?

20 A. (Deponent viewing exhibit.) I mean in 251, I
21 say that, but I mean, I'm discussing the combination,
22 so it's really rendering obvious in -- in teaching and
23 -- and, right, and/or rendering obvious the -- the
24 limitations. But that's what I say here in 251.

1 Q. And then in Paragraph 253, you are discussing
2 the combination of Weyman, Jain and LeMaire, and you
3 state, And, as I explained in Section IX.D.1.ii,
4 little Roman numeral Is, Weyman, Jain and LeMaire,
5 when adding a new unit, the new unit may be configured
6 to be initialized by sending and receiving IGMP query
7 messages and subsequently updating the multicast
8 forwarding table.

9 Do you see that?

10 A. (Deponent viewing exhibit.) Yes.

11 Q. So for limitation 8j, you're equating a new
12 processing unit added to the network element with
13 adding a new unit, correct?

14 MR. CHO: Objection; form.

15 A. (Deponent viewing exhibit.) Sorry, what were
16 the two things you said I was asking --

17 Q. So claim 8j includes the language, a new
18 processing unit added to the network, and in your
19 analysis, you are equating that with adding a new
20 unit, correct?

21 A. Yeah. I mean, the full claim is -- is the
22 network element, and not just network, but -- but I --
23 I -- I am mapping -- I'm saying that Weyman is
24 disclosing that, in part, by the fact that Weyman's

distributed router can accommodate the addition or removal of units.

And -- and if you look back at fur -- other analysis, that unit includes a processing unit. And it's really using the same word or word base, "addition" versus "added" in the claim, as what the claim -- claim term is as -- as for the ac -- the verb part of the claim term here. Verb -- I guess -- I guess it's not a verb; an adverb or -- I'm not an English major, I'm sorry. I don't want to mischaracterize this, but added in the claim is -- is the same route -- showed the same route as addition in the para -- the word re -- Weyman uses.

Q. So you are equating Weyman's disclosure that a unit can be added with a new processing unit being added to the network element; is that right?

A. (Deponent viewing exhibit.) I am mapping in part the, can accommodate the addition or removal of unit that's disclosed in Weyman, to a new pr -- a new processing unit added to the network element. And then I talk about initializing later as it -- with respect to updating its configuration, so that's the initializing part. And I think that's all part of operating the network element.

You want to -- Laurie, do you want to take a break or should we just go for it?

MADAM COURT REPORTER:: Are you going to be very long?

MR. CHO: Not very long, but -- you know what? Let's take a break, five minutes or so.

MADAM COURT REPORTER: Okay. Thank you.

(Off the record at 11:27 a.m.)

(Recess taken.)

(Back on the record at 11:31 a.m.)

CROSS EXAMINATION

BY MR. CHO:

Q. Okay. Dr. Houh, thank you.

So please turn to Page 13 of your declaration. And this is Exhibit 1002.

A. (Deponent viewing exhibit.) Okay.

Q. The Table in Paragraph 33 states that Claim 1 is obvious in view of Weyman -- in view of the combination of Weyman and Li, right?

A. (Deponent viewing exhibit.) Yes.

Q. All right.

A. (Deponent viewing exhibit.) Yes.

Q. Okay. So please turn to Paragraph 122 of

So I think -- I -- I -- but I refer to other analysis that, you know, I've already discussed, but -- but the -- the adding concept that's newly introduced in this claim is disclosed by the -- by Weyman's accommodation of the addition of a -- of a -- or a re -- addition of a unit, let's just skip removal, and that the initialization element is -- is -- is partially taught by the -- the -- updating its configuration as taught by Weyman.

Q. Okay. And I just want to go back quickly to revisit an aspect that I think we touched on briefly earlier.

But for Claim Construction, you did not find any explicit definition of claim term after reviewing the claim specica -- specification and file history for the '394 patent, correct?

A. Yeah. In my declaration, I don't propose any explicit claim constructions. I've interpreted everything as the claim aranay [phonetic], meaning all the claim terms, that is.

MS. CAPPAERT: Okay. I have no further questions.

MR. CHO: I have a few redirect questions for Dr. Houh.

your declaration. And that is on Page 73 of your declaration.

A. (Deponent viewing exhibit.) Yes. I'm there.

Q. Could you please read the limitation 1e for the record?

MS. CAPPAERT: Object to form; scope.

A. (Deponent viewing exhibit.) 1e is storing in each processing unit a respective list, each list indicating all of one or more multicast packet streams that are permitted for forwarding by a network element and further indicating which of the one or more ports each multicast packet stream is permitted to be forwarded to.

Q. So does limitation 1e reflect the term "multicast packet stream," right?

A. Yes.

MS. CAPPAERT: Objection; leading.

BY MR. CHO:

Q. Okay. No?

A. Yes.

Q. Please turn to Paragraph 128 of your declaration.

A. (Deponent viewing exhibit.) Okay.

Q. And I'm going to read the third sentence in

Paragraph 128; it says, Weyman further discloses that each unit can forward a multicast packet stream to a port, and so forth, right?

A. (Deponent viewing exhibit.) That's how it starts, yes.

Q. So am I understanding you right that you're relying on Weyman to show the claim term "multicast packet stream"?

MS. CAPPAERT: Object to form.

A. That's right. I am.

Q. Now, let's turn to Paragraph 153 of your declaration. And this is on Page 91 of your declaration.

A. (Deponent viewing exhibit.) Okay.

Q. And I will read your Paragraph 153. It states Weyman/Li teaches claim limitation 1k.

I read that correctly, right?

A. Yes.

Q. Is Weyman/Li a shorthand for Weyman in combination of Li?

A. Yes, that's right.

Q. Now, let's turn to Paragraph 155.

A. (Deponent viewing exhibit.) Okay.

Q. Now for -- for limitation 1k, you're relying

on the combination of Weyman and Li as you described it in Section IX.8.1.

Did I get that right?

MS. CAPPAERT: Object to form.

A. (Deponent viewing exhibit.) That's what it says there.

Q. Now, let's turn to Section IX.8.1, which, I think, is on Page 46 of your declaration.

A. (Deponent viewing exhibit.) Okay.

Q. What is the name of the sec -- what is the title of the Section IX.8.1?

A. (Deponent viewing exhibit.) The title is Weyman in View of Li.

Q. Okay. So that section is describing Weyman in combination of Li, right?

MS. CAPPAERT: Object to form.

A. Yes.

Q. Now, let's turn to Paragraph 94, which is still within the Section IX.8.1.

A. (Deponent viewing exhibit.) Okay.

Q. And it states, The combination of Weyman in view of Li, e.g., Weyman/Li, would have controlled the workload of each of individual ports in each unit as well as any aggregated link, for example, using the

channel joining processing unit in Li and to avoid overloading any port, parenthetical, including any aggregated link.

I read that correctly, right?

A. (Deponent viewing exhibit.) Yes.

Q. And your description goes on in Paragraph 95, and I'll read it out, too, it says, A POSITA would have been motivated to modify Weyman's distributed router to include Li's channel joining processing unit to ensure that Weyman's distributed router does not overload any particular port, including the aggregated link in Weyman, thereby degrading the distributed router's reliability, which was a well-known problem in the prior art.

I read that correctly, right?

A. (Deponent viewing exhibit.) Yes.

MS. CAPPAERT: Object to form. Sorry.

BY MR. CHO:

Q. So --

A. Yes.

Q. -- is my understanding correct that the combination that you're relying on for -- for Weyman in combination with Li is using channel joining processing unit in Weyman's distributed router to

count the number of multicast streams disclosed in Weyman?

A. It is using -- using the maximum described in Li.

Q. And Li's channel joining processing unit is being used to count the number of multicast streams that is disclosed in Weyman, right?

MS. CAPPAERT: Object to form.

A. Yes, both at the port layer and the aggregated port lay -- level.

MR. CHO: No further questions on my end.

MS. CAPPAERT: I have no additional questions.

MADAM COURT REPORTER: Okay. This is Laurie Berg, the court reporter. I'm just going to do the orders quick on the record and then I just have two ques -- spelling questions for Dr. Houh.

If the attorneys can please just let me know if you would like the same format that your firm, or that you've been receiving for previous transcripts in this case, if you want a rough, and I will have that to you this -- like, later this afternoon, and if the regular turnaround time is okay or if you need it expedited.

Page 74 1 Can we start with Attorney Cappaert, please? 2 MS. CAPPAERT: I need a rough and I need 3 it expedited. 4 MADAM COURT REPORTER: When would you 5 like it expedited for? 6 MS. CAPPAERT: I guess -- is Monday -- 7 does Monday count as a holiday in terms of turnaround 8 time? 9 It -- so I need it before Friday -- or before 10 Thursday. 11 MADAM COURT REPORTER: I can do it for 12 whenever you want. 13 Do you want it Tuesday? Is that alright? 14 MS. CAPPAERT: Yeah, that sounds great. 15 That sounds great. 16 MADAM COURT REPORTER: Okay. And 17 Attorney Cho? 18 MR. CHO: No, we don't need the rough 19 and, yeah, we actually don't need anything on our end, 20 but if you have the final ready, we're happy to 21 receive it. 22 MADAM COURT REPORTER: Okay. So you just 23 want regular turnaround time, yeah? 24 MR. CHO: Yes.	Page 75 1 (DEPOSITION OF DR. HENRY HOUH concluded 2 at 11:39 a.m.) 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Page 76 1 COMMONWEALTH OF MASSACHUSETTS 2 MIDDLESEX, SS. 3 4 I, Laurie J. Berg, Certified Court Reporter, 5 Registered Professional Reporter, Certified Realtime 6 Reporter, and Notary Public, in and for the 7 Commonwealth of Massachusetts, do hereby certify that 8 pursuant to appropriate notice of taking deposition, 9 there remotely appeared before me the following named 10 person, to wit: DR. HENRY HOUH, who was by me duly 11 sworn; that he was thereupon examined upon his oath 12 and his examination reduced to writing by me; and that 13 the deposition is a true record of the testimony given 14 by the witness. 15 IN WITNESS WHEREOF, I have hereunto set my 16 hand and seal this 19th day of January, 2025. 17 18 My commission expires: 19 August 30, 2030 20 21 22 23 _____ 24 Notary Public	Page 77 1 ERRATA SHEET DISTRIBUTION INFORMATION 2 DEPONENT'S ERRATA AND SIGNATURE INFORMATION 3 4 ERRATA SHEET DISTRIBUTION INFORMATION 5 The original of the errata sheet has been 6 delivered to Taeg Sang Cho, Ph.D., Esquire. 7 When the errata sheet has been completed by 8 the deponent and signed, a copy thereof should be 9 delivered to each party of record and the ORIGINAL 10 delivered to Katherine D. Cappaert, Esquire, to whom 11 the original deposition transcript was delivered. 12 13 INSTRUCTIONS TO DEPONENT: 14 After reading this volume of your deposition, 15 indicate any corrections or changes to your testimony 16 and the reasons therefor on the errata sheet supplied 17 to you and sign it. DO NOT make marks or notations on 18 the transcript volume itself. Add additional sheets 19 if necessary. Please refer to the above instructions 20 for errata sheet distribution information. 21 22 23 24

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