

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO.,	:	Case No.
LTD.,	:	IPR2025-01043
Petitioner,	:	U.S. Patent No.
V.	:	11,116,035
WILUS INSTITUTE OF STANDARDS		
AND TECHNOLOGY, INC.,	Case No.	
Patent Owner.	IPR2025-01044	
	U.S. Patent No.	
	11,16,879	

ZOOM DEPOSITION OF MATTHEW VALENTI, PH.D.

Thursday, February 5, 2026 - 1:00 p.m.

Jo Ann Betler, RDR, CRR, CRC, CLVS

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1 February 5, 2026,

2 (ALL APPEARANCES REMOTE VIA ZOOM)

3 MATTHEW VALENTI was thereupon called as a
4 witness and, after having been first duly sworn,
5 testified as follows:

6 EXAMINATION

7 BY MR. WANG:

8 Q. Hello, Dr. Valenti.

9 A. Hello.

10 Q. We met briefly off the record, but my name
11 is Phillip Wang. I represent patent owner Wilus in
12 this IPR proceeding.

13 Dr. Valenti, how do you pronounce your
14 name? Or did I pronounce it correctly?

15 A. You are pronouncing it correctly. Valenti,
16 like spaghetti.

17 Q. Could you state your full name and your
18 title, please?

19 A. Yes. It is Matthew Charles Valenti. And I
20 am a professor of computer science and electrical
21 engineering.

22 Q. Where are you a professor of science and
23 electrical engineering?

24 A. At West Virginia University.

25 Q. And is that where you're located now?

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1 A. Yes. I'm actually in my house, which is
2 very close to the campus.

3 Q. Dr. Valenti, do you understand that you are
4 under oath today?

5 A. Yes. I do.

6 Q. Have you ever testified under oath before?

7 A. Yes. I have.

8 Q. How many times?

9 A. Well, I have been deposed, I believe, 16
10 times. And in addition to that, I have also testified
11 in court settings probably about four or five times.

12 Q. Do you understand that even though we are
13 conducting this deposition via Zoom that the testimony
14 you give under oath is subject to the same penalty of
15 perjury as if you were testifying in a court of law?

16 A. Yes. I do.

17 Q. Is there anything that would prevent you
18 from thinking clearly and testifying truthfully today?

19 A. No.

20 Q. You mentioned, Dr. Valenti, that you have
21 have been deposed about 16 times and testified at trial
22 about four times; is that correct?

23 A. Yes.

24 Q. And were those in patent cases?

25 A. Yes. All of those would be somehow related

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1 to patents or intellectual property.

2 Q. What do you mean "or intellectual
3 property"?

4 A. Well, there are a few cases where it was
5 not just one patent but an entire patent portfolio, so
6 just a little bit higher level than just a single
7 patent.

8 Q. But that would still be within patents or
9 patent law; correct?

10 A. Yes. I think that would be fair to say.
11 It's just that the issues are not just mere
12 infringement and validity as in a typical patent
13 dispute.

14 Q. In the four cases where you've testified at
15 trial, you also gave a deposition in; correct?

16 A. No. So I had been in -- I testified at two
17 ITC cases. And in the first of those two ITC cases I
18 was not deposed before I testified at the hearing.

19 Q. Okay. But so the testimony that we're
20 talking about in deposition trial covered about
21 17 cases or exactly 17 cases?

22 A. Yes. I think that would be fair. I mean,
23 I don't want to be pinned to an exact number, but I
24 would say approximately 17 is a fair number.

25 Well, actually, you know, in some cases --

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1 we could walk through my CV. There may have been some
2 cases where there might have been, you know, two
3 depositions for the same case for whatever reason.

4 Q. Okay. And in those cases, you served as
5 the technical expert; correct?

6 A. Yes. My role was the technical expert.

7 Q. And did you give opinions concerning
8 validity?

9 A. Yes. Some of those involved opinion of
10 validity.

11 Q. And did you give opinions regarding
12 infringement or noninfringement?

13 A. Yes. Some of those involved infringement
14 or noninfringement.

15 Q. Apart from those two topics, did you offer
16 expert testimony on any other topics?

17 A. Yes. For instance, at the ITC cases, I had
18 to render an opinion on domestic industry practice.

19 Q. And did you offer technical opinions
20 regarding domestic industry such as whether the
21 domestic industry products were covered by the patent?

22 A. Yes. I did.

23 Q. Where are those -- can you point me to your
24 CV where those cases are listed?

25 A. Sure.

1 Do we need a formal process to introduce
2 the expert report? And in particular, I have two
3 reports, so it might help to clarify which of the two
4 you are referring to.

5 Q. Thank you.

6 Dr. Valenti, let's talk about that for a
7 minute.

8 Do you have any materials with you now?

9 A. Yes. I do. In front of me I have a few
10 documents.

11 Q. Okay. Let's -- let's just go over what you
12 have and may help streamline our deposition.

13 So you mentioned that you have two
14 declarations before you; is that correct?

15 A. Yes. I do.

16 Q. And is one of them the expert declaration
17 you submitted in IPR 2025-01043 concerning the '035
18 patent?

19 A. Yes. I have it labeled as Samsung 1003 and
20 it is my declaration for the so called '035 patent. It
21 doesn't actually have the IPR number on the face of the
22 document, but it is the declaration for the IPR for the
23 '035 patent.

24 Q. And it is Exhibit 1003 in that IPR?

25 A. Yes.

1 Q. All right. And the second declaration that
2 you have, is that the one concerning the '879 patent?
3 A. Yes. It is.
4 Q. Okay. And that IPR, I have as IPR Number
5 IPR 2025-01044. Does that sound correct to you?
6 A. I will take your word for it.
7 Q. Okay. And your second declaration is also
8 Exhibit 1003 in that proceeding; correct?
9 A. Correct.
10 Q. And do you have an electronic copy of these
11 declarations or just the paper copy?
12 A. I do have them available on my computer, if
13 necessary. They're not currently open.
14 Q. Okay.
15 A. I could open them.
16 Q. No. I'm not asking you to do that, to do
17 that now.
18 Do you have anything else open up on your
19 desktop, on your computer desktop?
20 A. No. On my computer desktop, I have Zoom.
21 Actually, a web page popped up up when I started the
22 Zoom, which is Magna Legal Services' web page. I can
23 close that if I need to.
24 Q. Okay.
25 A. And that's the only thing open on my

1 desktop.

2 Q. Okay. I'm going to do this. I'm going to
3 send two declarations through Zoom. And if possible, I
4 would like you to just download them to your computer
5 and then we can open them and talk about them; okay?

6 A. Okay.

7 (Exhibit Number 1003 was previously marked
8 for identification.)

9 BY MR. WANG:

10 Q. So I'll try to do this in order.

11 So I'm sending this first file now. Could
12 you please download it and open it.

13 A. Just to be clear, I would find it in the
14 meeting chat?

15 Q. Yes.

16 A. Okay. I have downloaded it and I have
17 opened it.

18 Q. Okay. And I just want to confirm what this
19 is. So what I sent in the chat is a copy of your
20 declaration on the '035 patent. And what you could do,
21 Doctor, is look at the header on certain pages and see
22 the -- see the patent number.

23 A. Yes.

24 Q. Okay. And this document is 174 pages.

25 Does this appear to be a true and correct copy of the

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1 declaration you submitted in the IPR in the '035
2 patent?

3 A. Yes. It does.

4 Q. Okay. And does this appear to correspond
5 to the paper copy that you have with you?

6 A. Yes. It does.

7 Q. Do you have any comments or markings on
8 your paper copy?

9 A. No. I do not.

10 Q. I'm going to send it, a second document,
11 into this chat. And could you please do the same for
12 that. To download it and open it.

13 A. Okay. I downloaded it.

14 (Exhibit Number 0014-Exhibit 1003 was
15 previously marked for identification.)

16 BY MR. WANG:

17 Q. Feel free to look through the document and
18 to look at the header. I will represent that I have
19 this as the declaration you submitted in the '879 IPR.
20 It is a PDF of 181 pages.

21 Do you -- does this appear to be a true and
22 correct copy of the declaration you submitted in the
23 IPR in the '879 patent?

24 A. Yes, it does.

25 Q. And does this correspond to the printed

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1 copy of the second declaration you have with you?

2 A. Yes, it does.

3 Q. And do you have any markings or annotations
4 on the printed copy you have with you?

5 A. Well, I have -- I don't have any markings
6 or annotations. What I do have is I have a few Post-it
7 tabs on certain pages.

8 Q. Okay. And do you have tabs on both
9 declarations?

10 A. No. I only have it on the '879
11 declaration.

12 Q. Why do you only have it on the '879?

13 A. I just didn't do it for the other one. The
14 markings are just to help me navigate. They're just
15 kind of major sections, claim elements.

16 Q. How many tabs do you have?

17 A. Ten.

18 Q. What pages are they on?

19 A. Sure.

20 We can go through all of them, if you want.

21 MR. PHILLIPS: Objection. Form. And potential
22 protected attorney work product.

23 You can answer, Dr. Valenti, to the extent
24 it does not reveal any protected attorney work product.
25 We can discuss what that is, if you don't understand

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1 what that means.

2 THE WITNESS: Okay. Page 10. Page 65.

3 BY MR. WANG:

4 Q. And, Doctor, you are referring to the
5 number at the bottom of the page -- right? -- when you
6 say page 10?

7 A. Yes. I'm using the printed copy, so I
8 don't even know what the page number on the PDF would
9 be.

10 Q. Sure. Okay.

11 A. So, yes, printed page 10.

12 Second one is printed page 65.

13 Third one is printed page 67.

14 Fourth one is printed page 70.

15 Fifth one is printed page 77.

16 Sixth one is printed page 84.

17 Seventh one is printed page 89.

18 Eighth one is printed page 104.

19 Ninth one is printed page 113.

20 Tenth one is printed page 115.

21 Oh, and my apologies. There is one more.

22 At the top of the page it is printed page 145. So I
23 will correct my previous statement. There are 11 tabs.

24 Q. Thank you, Doctor.

25 So for much of today's deposition, we'll be

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1 talking about your declaration. And if you're -- if
2 you're more comfortable referring to the printed copy,
3 we can do that. But I think we've established that we
4 have both electronic and paper copies of the same
5 declarations. Do you agree?

6 A. Yes, I do. One question for you. Are the
7 page numbers in the printed and the page numbers of the
8 PDF the same?

9 Q. If we're talking about the PDF, I will try
10 to, you know, clarify by referring to the page on the
11 bottom of the document or I may tell you to jump to a
12 PDF page. If I say PDF page, then we'll be be
13 referring to the PDF page.

14 So, Doctor, you mentioned you may have
15 other documents with you. Could you -- could you
16 explain that?

17 A. Yes. I have a stack of documents. Broadly
18 speaking, they are the two patents at issue, and then
19 the prior art documents. I think one other document
20 that was referenced.

21 Q. Okay. About how many documents do you have
22 with you?

23 A. Ten.

24 Q. Do you have exactly ten?

25 A. Yes, I have exactly ten.

1 Q. Do you know if all of these documents are
2 exhibits in this IPR proceeding?

3 A. Yes, they are.

4 Q. Can you just quickly go through what you
5 have, starting from the first document, and just say --
6 say what it is?

7 A. Sure.

8 So my first document is the '035 patent,
9 and so that would be Exhibit Samsung 1001 in the '035
10 IPR proceedings.

11 Q. Okay.

12 A. Then the next one is similarly the patent
13 for the other IPR proceedings, so it is the '879
14 patent. It was also given Exhibit Number Samsung 1001.

15 And then for the other eight documents, I
16 think the exhibit numbers are the same in both
17 proceedings, so I can just give you the exhibit
18 numbers, if you would like.

19 Q. Sure. If you could just say what the
20 document is and the exhibit number, that would be
21 helpful.

22 A. Okay. So I have Exhibit Samsung 1004,
23 which is the Zhou, Z-H-O-U, patent publication.

24 Then I have Exhibit Samsung 1005, which is
25 the Zhou provisional.

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1 Then I have Exhibit Samsung 1006, which is
2 the Cherian, C-H-E-R-I-A-N, patent publication.

3 Next I have Exhibit Samsung 1007, which is
4 the Cherian provisional.

5 Next I have Exhibit Samsung 1008, which is
6 the Kim patent. K-I-M.

7 Then I have Exhibit Samsung 1009, which is
8 the patent by Cariou. C-A-R-I-O-U.

9 Then I have Exhibit Samsung 1010, which is
10 a patent by Bharghavan, B-H-A-R-G-H-A-V-A-N.

11 And then the last one is Exhibit Samsung
12 1018, which is a patent by Ho, H-O.

13 Q. Thank you, Doctor.

14 Do you know if what you have with you are
15 all of the exhibits in these IPRs?

16 A. No. I believe there are others. I
17 actually have printed copies elsewhere in my room, but,
18 to be honest, some of them are quite large. Like the
19 802.11 standard, which printed is probably about
20 8 inches tall.

21 Q. I'm not asking you to do that right now,
22 Doctor. How did you determine what exhibits to have
23 with you on your table?

24 A. Well, I wanted to have the two expert
25 declarations. I wanted to have the two patents at

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1 issue.

2 And I wanted to have all of the prior art
3 that were used within the grounds. And I believe that
4 very last document, which was Samsung 1018 -- I don't
5 think that appeared in the grounds, but I included it
6 because it was small whereas a lot of the other
7 documents are quite large and unwieldy to have on the
8 desk with me.

9 Q. Thank you, Doctor.

10 We were talking about your CV before. And
11 that's at the end of your declarations; correct?

12 A. Yes.

13 Q. So I asked you -- I forget my question,
14 it's so long ago. But I asked you where in your CV
15 that the cases were listed at. Could you point me to
16 that?

17 A. Yes. In the expert declaration, I believe
18 the cases start at page 148.

19 Q. And we're speaking of your '035
20 declaration?

21 A. No, I'm sorry. I'm using the '879. That's
22 the one we last were talking about and that's the one
23 that has the tabs in it.

24 Q. Could we begin with the '035 declaration,
25 because it has a lower IPR number?

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1 A. Okay.

2 So in the declaration for the '035 IPR, my

3 prior cases begin on page 141.

4 Q. Okay. And then it continues through 146?

5 A. Yes. That is correct.

6 Q. And this lists 26 cases; correct?

7 A. Yes. There are 26 entries. I will add in

8 some cases one entry may pertain to perhaps a pair of

9 interrelated cases such as maybe a pair of IPRs that

10 are asserted against the same patent owner.

11 Q. So what would you call each item in this

12 list? Would you consider it an engagement?

13 A. Yeah, I think an engagement would be fair.

14 Or perhaps a case would be fair enough. I mean, some

15 engagements, if there're multiple parties involved, I

16 may have to sign separate letters with each party

17 depending on the nature of the proceedings.

18 Q. In these proceedings, did you -- were you

19 retained by the patent owner in any of these

20 proceedings?

21 MR. PHILLIPS: Objection. Form.

22 THE WITNESS: Yes, I was. In at least one case.

23 BY MR. WANG:

24 Q. And which case was that? Or at least the

25 one case was that?

Page 18

1 A. So, for example, case number 12.

2 Q. Okay. And you -- you served as the expert
3 for the party RideShare Displays, Inc.; correct?

4 A. Yes, I did.

5 Q. And you submitted a declaration in support
6 of the patent owner's response in several of these IPRs
7 listed?

8 A. Yes, I did.

9 Q. Of the other cases listed, did you serve as
10 an expert for the patent owner?

11 MR. PHILLIPS: Objection. Form.

12 THE WITNESS: Yes.

13 BY MR. WANG:

14 Q. Which other cases?

15 A. Case number 3 is an example.

16 Now, this is an ITC case. It was not an
17 IPR. I don't know if your question was limited to IPR
18 or you're asking me about all of the cases listed.

19 Q. I'm asking you about the cases listed in
20 this section of your CV, so thank you for that
21 clarification.

22 And so in the third item you served as an
23 expert for Motorola regarding patents owned by
24 Motorola?

25 A. Yes, that is correct.

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1 Q. Apart from those two, are there any other
2 cases where you served as an expert for the patent
3 owner?

4 MR. PHILLIPS: Objection. Form.

5 THE WITNESS: Yes. Another example is number 23.

6 BY MR. WANG:

7 Q. Okay. Any other examples?

8 A. Yes. Number 17.

9 Q. Okay. Any other?

10 A. Yes. Number 26. Which pertained to
11 domestic industry practice. So all of those that we
12 just went through, I was representing the patent owner.

13 Q. Okay. Are you aware of any others on your
14 list of 26?

15 A. Yeah. I just looked through it in real
16 time here just to check. I didn't see any, but I'm not
17 going to say that one slipped by. There may be another
18 one, but I can't recall, sitting here.

19 Q. Okay. Thank you, Doctor.

20 Turning back to your declaration, could you
21 please turn to paragraph 20 of your declaration?

22 A. Okay. I am there.

23 Q. Do you see this paragraph? You say you
24 have reviewed the '035 patent and excerpts of the
25 prosecution history, and then you list out several

Page 20

1 bullet points?

2 A. Yes.

3 Q. And are those bullet points exhibits in
4 this proceeding or materials you relied on?

5 A. Yes, they are.

6 Q. And do they correspond to the documents you
7 have printed with you?

8 A. Yes. Some of the documents I have before
9 me are on this list, but not everything on this list is
10 here on my desk.

11 Q. Okay. Do you see the first four bullets?
12 You have Zhou, Zhou provisional, and then Cherian and
13 Cherian provisional?

14 A. Yes.

15 Q. Do you know why you have the provisional
16 for these references, or why you have two versions of
17 them?

18 MR. PHILLIPS: Objection. Form.

19 THE WITNESS: Well, yes. Broadly speaking, it has
20 something to do with the priority date.

21 BY MR. WANG:

22 Q. Okay. What's your understanding of that?

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: Well, my understanding is that the
25 provisionals are provided to establish the priority

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1 date of the reference.

2 BY MR. WANG:

3 Q. And is it your understanding that
4 substantively you're relying on the Zhou and Cherian
5 references that are Exhibit 1004 and 1006?

6 MR. PHILLIPS: Objection. Form. Vague.

7 THE WITNESS: Well, no. I mean, I am considering
8 both in my report. I cite to both. So, for instance,
9 to Zhou, I cite to both 1004 as well as provisional
10 1005.

11 BY MR. WANG:

12 Q. I guess my question is for the priority
13 date issue, you said that the provisional is used to --
14 in connection with the priority date issue. Is that
15 your understanding?

16 MR. PHILLIPS: Objection. Form.

17 THE WITNESS: Sort of a broad question. Do you
18 have a more specific question that you have in mind?

19 BY MR. WANG:

20 Q. Okay. So my question is, are you relying
21 on the provisional application to establish an earlier
22 or a necessary priority date?

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: I don't think I opine about the
25 dates. I just have them both in there, and I cite to

Page 22

1 both.

2 BY MR. WANG:

3 Q. And for the -- for your reliance on Zhou or
4 Zhou provisional, is it your understanding that you
5 need to cite to both?

6 MR. PHILLIPS: Objection. Form.

7 THE WITNESS: No, I don't think I need to cite to
8 both.

9 BY MR. WANG:

10 Q. And so in terms of your substantive
11 reliance or citations, do you think it's sufficient to
12 cite to the Zhou and Cherian references, the
13 Exhibit 1004 and Exhibit 1006?

14 MR. PHILLIPS: Objection. Form.

15 THE WITNESS: You know, I really have no opinion
16 on that. The fact is I cited to both. Maybe it's just
17 to be careful, because I was able to find citations in
18 both references, so I went ahead and included them.

19 BY MR. WANG:

20 Q. What's your understanding of the
21 differences or the substantive differences between Zhou
22 and Zhou provisional?

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: I don't have an opinion as to the
25 complete differences, but as it pertains to the parts

Page 23

1 that I'm using in my declaration and the parts that I
2 cite to, they are substantively the same. In many
3 places, they're exactly the same.

4 BY MR. WANG:

5 Q. But apart from that, have you analyzed what
6 differences, if any, there are between the two?

7 MR. PHILLIPS: Objection. Form.

8 THE WITNESS: I don't think I have an opinion on
9 that.

10 BY MR. WANG:

11 Q. Same question for Cherian and Cherian
12 provisional.

13 My question is, do you have an
14 understanding of the differences or the substantive
15 differences between Cherian and Cherian provisional?

16 MR. PHILLIPS: Objection. Form.

17 THE WITNESS: I don't have an opinion. Again, I
18 cited to both, both documents. And for the parts that
19 I'm using in the report, they're substantively the
20 same.

21 BY MR. WANG:

22 Q. Have you analyzed what differences, if any,
23 there are between Cherian and Cherian provisional?

24 MR. PHILLIPS: Objection. Form.

25 THE WITNESS: Similarly, I have no opinion on

Page 24

1 that.

2 BY MR. WANG:

3 Q. My question is slightly different. It is
4 have you considered or analyzed that?

5 MR. PHILLIPS: Objection. Form.

6 THE WITNESS: Could you repeat the question so I
7 know --

8 BY MR. WANG:

9 Q. Yes. My question is, have you considered
10 or analyzed what differences, if any, there are between
11 Cherian and Cherian provisional?

12 MR. PHILLIPS: Objection. Form.

13 THE WITNESS: My answer is the same. I used the
14 same -- I used both references in the report. I cited
15 to both when I was writing the report. I considered
16 both at the same time. As it pertains to like
17 separating the differences, I don't really know what
18 you mean by that.

19 BY MR. WANG:

20 Q. Well, we know that one is a patent;
21 correct?

22 A. Right. It's a patent.

23 MR. PHILLIPS: Objection to form.

24 THE WITNESS: One is the patent, and the other is
25 provisional.

Page 25

1 BY MR. WANG:

2 Q. So that would be one difference. But my
3 question is, have you compared the disclosures? What
4 -- was that part of the work that you did, to consider
5 any substantive differences, if there's different or
6 additional figures or different or additional
7 specification disclosure in one versus the other?

8 MR. PHILLIPS: Objection. Form.

9 THE WITNESS: So you're asking me if I put them
10 side by side and compared them. I don't recall doing
11 that specific activity. But what I do recall is just
12 having both patents open, reading both, considering
13 both, as I wrote my report.

14 BY MR. WANG:

15 Q. Dr. Valenti, you're serving as the expert
16 for petitioner Samsung in this case; correct?

17 A. Yes. I am.

18 Q. When were you retained by Samsung?

19 MR. PHILLIPS: Objection. Form.

20 THE WITNESS: I don't remember the exact date. It
21 was some time probably in early 2025.

22 BY MR. WANG:

23 Q. And did attorneys at Fish & Richardson
24 reach out to you?

25 MR. PHILLIPS: Objection. Form. And potentially

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1 calls for protected attorney work product.

2 You may answer to the extent none is
3 revealed.

4 THE WITNESS: Yes, I think that's how the
5 engagement began, was someone at Fish & Richardson
6 reached out to me.

7 BY MR. WANG:

8 Q. And you've served as an expert for Samsung
9 before this IPR; correct?

10 A. Yes. I have.

11 Q. In about how many cases?

12 A. I think it was a total of about ten cases.
13 Three of which may have been joint with some other
14 parties.

15 Q. Ten cases before this IPR proceeding?

16 A. Yes.

17 Q. And you worked with the law firm, Fish &
18 Richardson, in cases before this IPR; correct?

19 A. Yes, I have.

20 Q. In about how many cases?

21 A. I would say 9 or 10.

22 Q. And the cases we've been talking about for
23 Samsung and working with Fish & Richardson, there's
24 some overlap between them; right?

25 MR. PHILLIPS: Objection. Form.

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1 THE WITNESS: Is your question that some of the
2 cases involved both Fish & Richardson and Samsung?

3 BY MR. WANG:

4 Q. Yes.

5 A. Yes. If that's what you mean by overlap,
6 there have been some cases where the law firm was Fish
7 & Richardson and the party was Samsung.

8 Q. So you testified that you were retained for
9 this IPR in early 2025, to the best of your
10 recollection; is that correct?

11 A. So to answer the immediate question, yes.
12 2025, early 2025 is when I believe I was retained.

13 I would like to go back to your previous
14 question, because I'm looking at my CV. I don't
15 actually recall a specific case where the law firm was
16 Fish & Richardson and the client was Samsung. So I may
17 need to change that answer. My apologies. I should
18 have looked through this more differently. Looking at
19 this, I don't recall that combination previously prior
20 to this case.

21 Q. Okay. So to clarify that, you have worked
22 as an expert for Samsung before, and you have worked
23 with Fish & Richardson, but whether, as I put it, there
24 was overlap, there may or may not have been?

25 MR. PHILLIPS: Objection. Form.

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1 THE WITNESS: Right. Right. So the -- to the
2 best of my recollection and knowledge, there was no
3 overlap where the law firm was Fish & Richardson, and
4 the party was Samsung.

5 BY MR. WANG:

6 Q. Do you know -- do you recall when you
7 submitted these declarations and these IPRs?

8 MR. PHILLIPS: Objection. Form.

9 THE WITNESS: Yes. It would be on or about the
10 date that I signed them, which was May 28, 2025.

11 BY MR. WANG:

12 Q. Did you draft these declarations yourself?

13 MR. PHILLIPS: Objection. Potentially calls for
14 attorney work product.

15 You may answer to the extent you don't
16 reveal any.

17 THE WITNESS: This is my declaration, so I wrote
18 it with the assistance of attorneys, and it represents
19 my opinion.

20 BY MR. WANG:

21 Q. How much time did you spend on this IPR or
22 working on your declaration by the time you submitted
23 the declarations?

24 MR. PHILLIPS: Objection. Form.

25 THE WITNESS: Could you be a little more specific?

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1 BY MR. WANG:

2 Q. Sure.

3 So you testified that you don't remember
4 the exact date, but you were retained in early 2025;
5 correct?

6 A. Yes.

7 MR. PHILLIPS: Objection. Form.

8 BY MR. WANG:

9 Q. And these declarations were submitted on or
10 around May 28, 2025; correct?

11 MR. PHILLIPS: Objection. Form.

12 THE WITNESS: Yes. They were both submitted on
13 that date. Or about that date.

14 BY MR. WANG:

15 Q. How much time, to the best of your
16 recollection, did you spend in these IPRs on your
17 declarations or analyzing the IPR when you submitted
18 the declarations?

19 MR. PHILLIPS: Objection. Form.

20 THE WITNESS: Well, to get to your question, I
21 don't remember exactly how many hours I spent, but I
22 believe leading up to when these were filed across both
23 IPRs, which, of course, are quite similar, I spent
24 about 40 hours.

25 BY MR. WANG:

1 Q. In total for both -- for both declarations?
2 A. Yes. I think that's -- yeah, that's
3 approximate. I don't know the exact number, but, yeah,
4 approximately 40 hours leading up to the filing.
5 Q. And that included drafting the declaration
6 and reviewing documents and analyzing documents?
7 A. Yes. I think that would be fair. That
8 time included reviewing documents, drafting, and
9 editing declarations.
10 Q. Could you turn again to paragraph 20 of
11 your declaration?
12 A. Okay. I'm there.
13 Q. So in paragraph 20, do you see that you say
14 that you reviewed the '035 patent and relevant excerpts
15 of the prosecution history of the '035 patent? Do you
16 see that?
17 A. Yes.
18 Q. And it's attached as Exhibit 1002?
19 MR. PHILLIPS: Objection. Form.
20 BY MR. WANG:
21 Q. Right? The prosecution history?
22 A. Yes. 1002 is the prosecution history or
23 excerpts of it.
24 Q. Do you know if Exhibit 1002 is the entire
25 prosecution history or only excerpts?

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1 A. I believe it's actually the entire
2 prosecution history. I was provided with the entire
3 prosecution history. What I'm saying here is I
4 reviewed portions of it.

5 Q. You didn't review the entire prosecution
6 history of the --

7 MR. PHILLIPS: Objection. Form.

8 BY MR. WANG:

9 Q. -- '035 patent?

10 A. Well, it depends on what you mean by
11 review.

12 Q. I'm asking about your statement in
13 paragraph 20 of your declaration. You say you have
14 reviewed the '035 patent and relevant excerpts of the
15 prosecution history. Do you see that?

16 A. Yes.

17 Q. So I'm trying to determine if, based on
18 that statement, whether or not you reviewed the entire
19 prosecution history of the '035 patent.

20 A. So I think the answer is that I reviewed
21 the portions of the '035 patent that are described in
22 paragraph 71 of the report. So -- 71 and 72.

23 Q. How did you identify those parts of the
24 prosecution history as relevant?

25 MR. PHILLIPS: Objection. Form. Potentially

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1 calls for protected attorney work product.

2 You may answer it subject to not revealing
3 any such information.

4 THE WITNESS: Well, in part, this was in
5 consultation with the attorneys, who helped provide
6 guidance on how to review the file history. But I also
7 relied on my prior knowledge of what is typically in a
8 file history. So you know, looking at things like --
9 you know, reasons to allow potentially things like the
10 examiners reasons for allowance, things like that.

11 BY MR. WANG:

12 Q. Is part of how you determined what was
13 relevant in the prosecution history, what was provided
14 to you by attorneys?

15 MR. PHILLIPS: Objection. Form.

16 THE WITNESS: Yeah. I don't know if provided is
17 an accurate way of explaining it. I mean, we worked
18 together. They provided some guidance, of course.
19 They are the legal experts. But I was able to form my
20 own opinion based on what was in there.

21 BY MR. WANG:

22 Q. And you say that you discussed the
23 prosecution history in your declaration; correct?

24 A. Yes.

25 Q. And what was the paragraph that you

1 mentioned?

2 MR. PHILLIPS: Objection. Form.

3 THE WITNESS: The paragraph where I discussed the
4 prosecution history of the '035 patent is paragraph 71
5 and I think it continues in paragraph 72.

6 MR. PHILLIPS: Excuse me, Philip. We've been
7 going for almost an hour now. Do you see a break in
8 the near future?

9 MR. WANG: Let's go off the record.

10 MR. PHILLIPS: Okay.

11 (A recess was taken, after which the
12 proceedings were resumed as follows.)

13 MR. WANG: I'm ready.

14 THE REPORTER: I'm ready.

15 MR. WANG: Let's go back on the record.

16 BY MR. WANG:

17 Q. Welcome back, Dr. Valenti.

18 Before we were talking about paragraph 71
19 of your declaration. Do you recall that?

20 A. Yes.

21 Q. You say that counsel's informed you about a
22 nonfinal rejection as being obvious. Do you see that?

23 A. Yes. Counsel's informed me and I've
24 reviewed that there was a nonfinal rejection.

25 Q. Okay. And this doesn't say -- doesn't talk

Page 34

1 about any other parts of the prosecution history?

2 A. Well, yeah, that discussion here is talking
3 about the nonfinal rejection, and then the next
4 paragraph talks about the amendment that was made by
5 the applicant.

6 Q. So I'm trying to determine what parts of
7 the prosecution history you reviewed and relied on. Is
8 it just the nonfinal rejection?

9 MR. PHILLIPS: Objection. Form.

10 THE WITNESS: Well, I mean, I reviewed the
11 prosecution history as we discussed before. Counsel
12 informed me of certain parts, including the nonfinal
13 rejection. And then the amendment where the two when
14 clauses were added.

15 BY MR. WANG:

16 Q. And so, then you reviewed the nonfinal
17 rejection and the amendment?

18 A. Yes.

19 MR. PHILLIPS: Objection. Form.

20 BY MR. WANG:

21 Q. And then you said counsel informed you of
22 certain parts, including -- are there any other parts
23 beyond what you said?

24 MR. PHILLIPS: Objection. Form.

25 THE WITNESS: I'm sorry, did I write including or

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1 did I say included?

2 BY MR. WANG:

3 Q. You said -- well, I reviewed the
4 prosecution history as we discussed before counsel
5 informed me of certain parts, including nonfinal
6 rejection. And then the amendment were the two when
7 clauses were added.

8 A. Oh, okay. The including was modifying my
9 reviews. So I reviewed -- maybe a better way to parse
10 the sentence is, yes, I reviewed the document,
11 including the parts that counsel informed me of, which
12 would include this nonfinal rejection.

13 Q. Beyond the nonfinal rejection and the
14 amendment, were there any other parts that counsel
15 informed you of or that you specifically reviewed?

16 MR. PHILLIPS: Objection. Form.

17 THE WITNESS: I would say I haven't relied on any
18 other parts. I mean, I certainly reviewed things like,
19 you know, other parts of the file history, including
20 like the first page of it. But in terms of what I
21 relied on, it would be the parts that are in
22 paragraph 71 and 72.

23 BY MR. WANG:

24 Q. So any other parts you did not rely on for
25 your opinions in this IPR?

1 MR. PHILLIPS: Objection. Form.

2 THE WITNESS: I don't recall outside of what's
3 listed in 71 and 72 being relied upon in my report.

4 BY MR. WANG:

5 Q. Let me ask you specifically in paragraph 71
6 and 72 what you're pointing to, the rejection and the
7 amendment.

8 To what extent do you rely on this, these
9 parts, for your opinion? And to what extent is your
10 opinion affected by these parts of the prosecution
11 history?

12 MR. PHILLIPS: Objection. Form.

13 THE WITNESS: I can't say that I really relied on
14 any part of the prosecution history here. I think I
15 was just -- in these sections just providing an
16 overview of the prosecution history. It didn't really
17 have any bearing on my opinion.

18 BY MR. WANG:

19 Q. And these parts of the prosecution history
20 don't have any bearing one way or the other for your
21 opinion?

22 MR. PHILLIPS: Objection. Form.

23 THE WITNESS: No. I think it would be fair to say
24 I laid out the prosecution history. I'm aware of it.
25 But then it didn't affect my opinion.

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1 BY MR. WANG:

2 Q. You submitted your declarations. We
3 discussed this in May of 2025; correct?

4 A. Yes.

5 Q. Is your -- are your declarations a complete
6 statement of the opinions you offer or intend to offer
7 in these IPRs?

8 MR. PHILLIPS: Objection. Form.

9 THE WITNESS: I do not intend to offer any further
10 opinions.

11 BY MR. WANG:

12 Q. Sitting here, are you aware of any
13 corrections to your declarations?

14 A. No, nothing of substance. There may be a
15 missing comma here and there.

16 Q. And sitting here, do you have any
17 additional opinions regarding this case or this IPR
18 that are not in your declarations?

19 MR. PHILLIPS: Objection. Form.

20 THE WITNESS: No, I have no additional opinions
21 that are not in my report.

22 BY MR. WANG:

23 Q. Beyond your declarations and the exhibits
24 cited in the declarations, have you reviewed any other
25 documents in this IPR?

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1 MR. PHILLIPS: Objection. Form.

2 THE WITNESS: I don't recall reviewing anything
3 other than what's in the record. The only exception --
4 I mean, I do have a technical tutorial background. I
5 may have referred to a textbook or something like that
6 when I was writing my tutorial. But that was a while
7 ago, so I don't really recall.

8 BY MR. WANG:

9 Q. When you say you don't recall reviewing
10 anything other than what's in the record, by "in the
11 record" you mean that are exhibits in the IPR?

12 MR. PHILLIPS: Objection.

13 THE WITNESS: Yes. I would be referring to the
14 exhibit numbers, the cited exhibits.

15 BY MR. WANG:

16 Q. Okay. But since your declaration was
17 submitted, have you reviewed or been provided any other
18 documents or materials in this IPR?

19 MR. PHILLIPS: Objection. Form.

20 THE WITNESS: No. I've not reviewed anything
21 related to the IPR since I filed it. Just the
22 documents that are on the record that we were just
23 discussing.

24 BY MR. WANG:

25 Q. What did you do to prepare for your

1 declaration today?

2 MR. PHILLIPS: Objection. Calls for exposure of
3 attorney work product.

4 You can answer to the extent that none is
5 revealed.

6 MR. WANG: Counsel, I would ask you to limit your
7 speaking objections and to limit them to form. And if
8 you want, you can instruct your witness not to answer.
9 But I don't think these speaking objections are proper.

10 MR. PHILLIPS: Thank you, Philip. I agree that in
11 general that's not. I think the sole exception is with
12 regard to privilege and protected work product in my
13 mind.

14 MR. WANG: Counsel, your objection and this
15 exchange is not appropriate. I simply asked what did
16 you do to prepare for your deposition today, so I will
17 ask Dr. Valenti.

18 MR. PHILLIPS: I disagree with you, but go ahead.

19 THE WITNESS: Okay. So my understanding of the
20 question is what did I do to prepare for the deposition
21 today, and what I did was I went back and I reread my
22 declarations. I went back and reread the patents at
23 issue, and the prior art documents. And, in addition,
24 I did meet with counsel a few times.

25 BY MR. WANG:

1 Q. Did you meet with counsel by phone or Zoom?
2 A. No. Neither.
3 Q. Were your meetings with counsel in person?
4 A. No.
5 Q. How did you meet with counsel a few times?
6 A. We used Microsoft Teams.
7 Q. And you recall it was a few sessions?
8 MR. PHILLIPS: Objection. Form.
9 THE WITNESS: Yes. I want to say maybe four
10 times.
11 BY MR. WANG:
12 Q. And how long were those sessions?
13 A. Each one was relatively short. Maybe an
14 hour. Some might have been two. Nothing super long.
15 Q. And they were across four days?
16 A. No. I would say across about ten days.
17 Over the last week and a half.
18 Q. And did you meet with your counsel,
19 Mr. Phillips?
20 A. Yes. He was present in at least some of
21 those meetings.
22 Q. Who else was present in those meetings?
23 A. There was also Mr. Jonathan Driesslein, who
24 is here on the Zoom.
25 Q. Anyone else?

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1 A. No. Not that I can recall.

2 Q. Could you please turn back to your

3 declaration.

4 Do you see at the beginning of Section 29

5 you have a section on the legal standards?

6 A. Yes.

7 Q. And you're not an attorney; correct?

8 A. No, I'm not.

9 Q. And so did you receive or informed of these

10 legal standards by counsel?

11 A. Yes, I did.

12 Q. Do you see at the bottom of paragraph 29

13 you say that -- you're talking about the critical date

14 of the '035 patent. You say that your opinion does not

15 change if the invention date is earlier. Do you see

16 that?

17 A. Yes, I see that.

18 Q. So what invention date are you referring

19 to?

20 A. I think I'm talking about the critical

21 date, which was September 7th, 2016.

22 Q. What do you mean when you say your opinion

23 does not change if the invention date is earlier?

24 MR. PHILLIPS: Objection. Form.

25 THE WITNESS: I think I'm just talking about my

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1 interpretation of the patent standards, so which law
2 applies. So my opinion would not change if there's an
3 earlier invention date.

4 BY MR. WANG:

5 Q. So in the previous sentence, you're talking
6 about a point in time for claim interpretation
7 purposes. Do you see that?

8 A. Right. Yes.

9 Q. And the next sentence, when you say your
10 opinion would not change if invention date is earlier,
11 do you mean your opinion or your reading of the claims
12 for claim interpretation purposes?

13 MR. PHILLIPS: Objection. Form.

14 THE WITNESS: Yeah. I mean there's certain
15 aspects of my opinion that would not depend on the
16 invention date. I think you gave an example, for
17 instance, claim interpretation.

18 BY MR. WANG:

19 Q. Okay. So when you say my opinion does not
20 change, are you referring to claim interpretation or
21 are you referring to all of your opinions?

22 A. Well --

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: A claim interpretation would be an
25 example. I think -- you know, what I'm not saying here

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1 is that my opinion would not change if the invention
2 date was like, you know, even earlier than the prior
3 art documents; right? That wouldn't make sense. But,
4 you know, putting aside the dates of the prior art
5 references, then, you know, the other aspects of my
6 opinion would not change.

7 BY MR. WANG:

8 Q. Do you see that in subsection C you have a
9 section on anticipation?

10 A. Yes.

11 Q. Do you offer any anticipation opinions in
12 this IPR?

13 MR. PHILLIPS: Objection. Form.

14 THE WITNESS: I'm sorry, could you repeat the
15 question?

16 BY MR. WANG:

17 Q. Do you offer any anticipation opinions in
18 this IPR?

19 A. No. My grounds are all based on
20 obviousness.

21 Q. Why do you have a discussion of
22 anticipation?

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: I think it's just a matter of
25 completeness.

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1 BY MR. WANG:

2 Q. Have you analyzed the question of
3 anticipation in this IPR?

4 MR. PHILLIPS: Objection. Form.

5 THE WITNESS: I'm not exactly sure what that would
6 entail. I looked at the references and did an analysis
7 of it. It turned out to be anticipation, and that
8 would have been my opinion. But my opinion was that
9 obviousness was more appropriate grounds.

10 BY MR. WANG:

11 Q. And so you analyzed and you determined that
12 the claims were not anticipated; is that fair?

13 MR. PHILLIPS: Objection. Form.

14 THE WITNESS: No, I don't think that's fair. I
15 mean, what I did do was I laid forth obviousness
16 grounds. I didn't really consider anticipation.
17 That's not what's in the scope of my report.

18 BY MR. WANG:

19 Q. Okay. Do you see here -- and I'm referring
20 to your report, to be clear. You say in paragraph 34
21 that "if all limitations of the claim are disclosed in
22 the prior reference, either explicitly or inherently;
23 i.e., necessarily present."

24 Do you see that?

25 A. Yes.

1 Q. Do you have any opinion that any
2 limitations of the challenge claims are inherently;
3 i.e., necessarily present?

4 A. I don't know if I can answer that without
5 looking at a specific claim element. I think in the
6 report I do an analysis of each claim element and
7 describe those issues.

8 Q. Okay. Sitting here, do you recall doing
9 that analysis or offering an opinion about inherency,
10 any limitations being inherently present?

11 MR. PHILLIPS: Objection. Form.

12 THE WITNESS: I don't recall sitting here. It's a
13 long report, but we could go through the individual
14 claim elements, if you would like.

15 BY MR. WANG:

16 Q. In paragraph 36 you say "I am informed by
17 counsel and understand that patent claim composed of
18 several elements is not proved obvious merely by
19 demonstrating that each its elements was independently
20 known in the prior art."

21 Do you see that?

22 MR. PHILLIPS: Objection. Form.

23 THE WITNESS: Is that the last sentence of the
24 paragraph?

25 BY MR. WANG:

1 Q. Yes.

2 A. Yes, I see that.

3 Q. You agree with that?

4 A. Yes, I do.

5 Q. And you have the same sentence or a similar

6 one at the top of paragraph 38. Do you see that?

7 A. Yes.

8 Q. At the end of that paragraph you say, "I am

9 informed by counsel and understand that it is improper

10 to use hindsight in obviousness analysis, and that the

11 patent claim should not be used as a roadmap."

12 Do you see that?

13 A. Yes, I do.

14 Q. What's your understanding of that sentence?

15 MR. PHILLIPS: Objection. Form.

16 THE WITNESS: Well, the sentence is saying that

17 it's improper to use hindsight when you do obviousness,

18 so you shouldn't look at the patent, the patent at

19 issue. So, for instance, the '035 and use that as the

20 roadmap for the obviousness analysis.

21 BY MR. WANG:

22 Q. And in your view, how would one do that?

23 Or avoid hindsight while performing an obviousness

24 analysis?

25 MR. PHILLIPS: Objection. Form.

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1 THE WITNESS: Well, there's probably many ways to
2 do it. I think this legal standard is just telling you
3 not to do it. So anything that does not use hindsight,
4 I think, would qualify.

5 BY MR. WANG:

6 Q. Practically how would one avoid using
7 hindsight, when doing proper analysis?

8 MR. PHILLIPS: Objection. Form.

9 THE WITNESS: So, as an example of how to avoid
10 hindsight, perhaps you start with one reference and
11 then you look for maybe something that's missing or
12 perhaps just some reason to improve it. And then you
13 might find another reference that has the improvement,
14 you know -- there may be many motivations to combine,
15 but a lot of times it's just a matter to try to seek a
16 better solution.

17 BY MR. WANG:

18 Q. Well, what do you mean there may be many
19 motivations combined, but a lot of time it's just a
20 matter to try to seek a better solution?

21 MR. PHILLIPS: Objection. Form.

22 THE WITNESS: Well, you just have to put yourself
23 in the role of POSITA, what would have been the demands
24 of industry and the market. And, you know, what would
25 have been known. What would have been obvious to try.

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1 And, you know, what -- what is the objective? The
2 objective in a lot of these types of technologies is to
3 have a solution that just works better.

4 BY MR. WANG:

5 Q. So you're saying that identifying a
6 motivation to try to seek a better solution, that that
7 would not be hindsight?

8 MR. PHILLIPS: Objection. Form.

9 THE WITNESS: I'm not sure if I follow.

10 BY MR. WANG:

11 Q. Okay. Let me clarify. You said it's just
12 a matter to try to seek a better solution. What did
13 you mean by "it"?

14 MR. PHILLIPS: Objection. Vague.

15 THE WITNESS: Well, you know, as an example, if
16 you -- if you use a technique to improve one device,
17 you might recognize that it could improve a similar
18 device of the same -- in the same way. So that would
19 be maybe an another example of some obviousness that
20 wouldn't be hindsight necessarily.

21 And a lot of these are just common sense,
22 and, you know, common sense is sometimes hard to define
23 to a nonexpert. But, you know, just kind of common
24 sense approaches.

25 BY MR. WANG:

1 Q. Can you give me an example of using
2 hindsight in an obviousness analysis?

3 MR. PHILLIPS: Objection. Form.

4 THE WITNESS: Using hindsight? I probably can't.
5 It's not something I think I've ever done. I mean, you
6 could have some instance where you just have -- I don't
7 know if this would be hindsight or not, but two
8 completely unrelated patents and you just kind of pick
9 and choose some claim elements from this patent and
10 then some from the other patent and just combine them
11 in a random way to achieve the same elements that are
12 in the claim. So that may be as an example.

13 BY MR. WANG:

14 Q. Okay. So your example of using hindsight
15 is two completely unrelated patents, using two
16 completely unrelated patents?

17 A. Yes. Right. That would be, I think an
18 example.

19 Q. And by completely unrelated, you mean in a
20 different area of technology?

21 MR. PHILLIPS: Objection. Form.

22 THE WITNESS: Yes, just to make it kind of a clear
23 example. Yeah, if it's unrelated. You're just asking
24 for examples, so that would be my example.

25 BY MR. WANG:

1 Q. Sitting here, can you think of any other
2 examples of using hindsight in an obviousness analysis?

3 A. I don't know. I mean, it's not something I
4 really thought of. Again, it's not something I engage
5 in.

6 Q. Can you turn to paragraph 24 of your
7 declaration?

8 A. I am there.

9 Q. Do you see here you list the three grounds
10 and the different prior art references that you rely
11 on?

12 A. Yes.

13 Q. And so here we're talking about the claims
14 of the '035 patent and you list Zhou, Cherian, and Kim
15 for ground 1, and then Ho for ground 2. And then in
16 ground 3 you used Bharghavan instead of Ho. Do you see
17 that?

18 A. Yes.

19 Q. Were you provided these prior art
20 references in combinations as part of your work in this
21 IPR?

22 MR. PHILLIPS: Objection. Form.

23 THE WITNESS: Well, I was provided the references.
24 The grounds were something that were developed, as I
25 worked on the project.

1 BY MR. WANG:

2 Q. You were not involved in searching for the
3 references or doing prior art searching?

4 A. No. I didn't do the search. So the
5 starting point was the references.

6 Q. Okay. Turning to paragraph 44 of your
7 report, you say a claim can be obvious in light of a
8 single reference without the need to combine
9 references. And it goes on.
10 Do you see that?

11 A. Yes.

12 Q. Do you understand this paragraph to be
13 talking about single reference obviousness?

14 A. Well, to the extent that you mean
15 single-reference obviousness being that a claim can be
16 obvious in light of a single reference, then, yes, I
17 would agree with that.

18 Q. Have you heard of the term single-reference
19 obviousness?

20 A. I can't recall hearing it expressed using
21 that exact term.

22 Q. Do you agree the term makes sense for what
23 you're talking about for -- in paragraph 44?

24 MR. PHILLIPS: Objection. Form.

25 THE WITNESS: Yeah. Sure. If that's the term you

1 would like to use to explain the principal in
2 paragraph 44, I'm willing to accept that.

3 BY MR. WANG:

4 Q. You don't offer any opinion about
5 single-reference obviousness or the claim being obvious
6 in light of a single reference in this IPR?

7 MR. PHILLIPS: Objection. Form.

8 THE WITNESS: No, I don't. All of the grounds use
9 combinations of multiple references.

10 BY MR. WANG:

11 Q. Okay. In this same paragraph you talk
12 about the elements of the claim, you know, that are not
13 found explicitly or inherently in the reference can be
14 supplied by the common sense of one who is skilled in
15 the art. Do you see that?

16 A. Yes.

17 Q. Sitting here, do you recall any opinion
18 about inherent -- inherently or whether or not an
19 element is not found inherently?

20 MR. PHILLIPS: Objection. Form.

21 THE WITNESS: I believe you asked a similar
22 question earlier, and I'll give you the same response,
23 which is it is a long report. I can't remember exactly
24 each and every element off the top of my head. But if
25 you want to look at specific claim elements, there may

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1 be some inherency arguments in there. I just can't
2 recall, sitting here.

3 BY MR. WANG:

4 Q. For the obviousness opinions you do offer,
5 do you opine that any claim elements can be supplied by
6 the common sense of one of skill in the art?

7 MR. PHILLIPS: Objection. Form.

8 THE WITNESS: Again, you're asking me about my
9 entire report, so I don't think I can give you an exact
10 and precise answer without looking at individual claim
11 elements.

12 BY MR. WANG:

13 Q. So here in this paragraph, do you see
14 there's this phrase, "supplied by the common sense of
15 one skilled in the art."

16 Do you see that?

17 A. Yes.

18 Q. And then you also talked about common sense
19 for motivation to combine. Do you recall that?

20 MR. PHILLIPS: Objection. Form.

21 THE WITNESS: Yes, I believe we did talk about
22 common sense and how it can provide obviousness.

23 BY MR. WANG:

24 Q. When you say provide obviousness, do you
25 mean specifically before common sense providing

1 motivation to combine or in the context of motivation
2 to combine?

3 MR. PHILLIPS: Objection. Form.

4 THE WITNESS: No. I'm just talking about
5 obviousness as a whole. And not really pinning it down
6 to any particular combination of references. It's just
7 common sense. Common sense and obviousness are
8 sometimes used interchangeably, especially by the
9 layperson.

10 BY MR. WANG:

11 Q. Okay. In paragraph 44 you have this
12 phrase. "Supplied by the common sense of one skilled
13 in the art."

14 Do you see that?

15 A. Right.

16 Q. And so in this paragraph you're talking
17 about a limitation missing from the prior art that's in
18 the claim?

19 MR. PHILLIPS: Objection. Form.

20 THE WITNESS: Well, it's talking about an element
21 of a claim. May or may not be an entire limitation
22 that's not found explicitly or inherently in the
23 reference.

24 BY MR. WANG:

25 Q. Okay. In your obviousness analysis and

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1 opinions, do you do that? Which is, rely on an element
2 not found explicitly or inherently in a prior art
3 reference and it being supplied by the common sense of
4 one skilled in the art?

5 A. And I feel like this is the same question
6 that I've already answered just expressed differently.
7 I mean, this is a big report. There are a lot of
8 opinions. I think it would be a bit irresponsible for
9 me to characterize my testimony without looking at the
10 individual claim elements. So there may be some in
11 there that are doing what you are expressing, but I
12 would prefer to look at the individual elements before
13 giving you an affirmative answer.

14 Q. What's your understanding of the alleged
15 point of novelty of the '035 patent claims?

16 MR. PHILLIPS: Objection. Form.

17 THE WITNESS: Point of novelty is not something
18 that I think I have opined on. I mean, the patent
19 itself has claims. The claims have elements. I looked
20 at each and every element. Performed an analysis of
21 that. Yes, perhaps some of those elements are more,
22 quote, unquote, novel than others, but I don't think I
23 actually opined on the purported novelty.

24 BY MR. WANG:

25 Q. Okay. What's your understanding of the

1 '035 claims or invention or alleged invention?

2 MR. PHILLIPS: Objection. Form.

3 THE WITNESS: Well, I mean, generally speaking,
4 the '035 patent is directed to a wireless communication
5 terminal that communicates wirelessly with a base
6 communication terminal. And the disclosure focuses on
7 improving the efficiency of wireless communications
8 particularly in scenarios involving contention-based
9 channel access and multi-user uplink transmissions.

10 BY MR. WANG:

11 Q. Is your understanding of the '035 patent in
12 paragraphs 67 to 70 of your declaration?

13 MR. PHILLIPS: Objection. Form.

14 THE WITNESS: Well, 67 through 70 is an overview
15 or summary of the patent. I mean, it probably does not
16 encompass the entirety of my understanding of the
17 patent, but it is an accurate summary of the patent.

18 BY MR. WANG:

19 Q. Do you see in paragraph 68 you talked about
20 the problem purportedly addressed by the '035 patent?

21 A. Yes, I do.

22 Q. Do you agree that this purported problem
23 was a problem in the field at the time of the priority
24 date?

25 MR. PHILLIPS: Objection. Form.

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1 THE WITNESS: I don't know if I quite understand
2 the question. I mean, I'm just summarizing what the
3 patent is doing. But I don't think I'm taking a
4 position as to whether it was a quote, unquote,
5 problem. It may depend on what you mean by problem.

6 BY MR. WANG:

7 Q. Okay. In paragraph 27 you say that all
8 positions in this declaration are from the advantage
9 point of POSITA as of September 2016. Do you see that?

10 A. Yes. Correct.

11 Q. So when I say priority date or invention
12 date, I guess we can agree, because we're talking about
13 your declaration, we're talking about that date,
14 September of 2016. Is that okay?

15 A. Yes.

16 Q. And then you say in the paragraph above it,
17 it would be someone with a bachelor's degree in
18 electrical engineering, computer engineering, computer
19 science or related field and at least three years of
20 experience in the research design and development of
21 wireless communication device systems and/or networks.
22 Do you see that?

23 A. Yes.

24 Q. And that more additional experience can
25 make up for less work experience and vice versa. Do

Page 58

1 you see that?

2 MR. PHILLIPS: Form.

3 THE WITNESS: Yes.

4 BY MR. WANG:

5 Q. And as of that date, would you have been a
6 person more skilled under your definition?

7 A. Yes.

8 Q. Okay. So turning back to your opinion in
9 paragraph 68, I understand you're describing the
10 patent, but do you see how you're talking about the
11 patent, characterizing the patent as discussing a
12 problem arising when multi-user uplink transmissions
13 are scheduled, and then going on?

14 A. Yes.

15 MR. PHILLIPS: Objection. Form.

16 BY MR. WANG:

17 Q. And you say at the end of the paragraph,
18 "When a terminal is scheduled for such a transmission,
19 its normal contention-based behavior might compromise
20 the efficiency of the scheduled transmission or
21 interfere with other terminals also participating in
22 it."

23 Do you see that?

24 A. Yes.

25 Q. Do you agree that that was a problem, as of

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1 the priority date?

2 MR. PHILLIPS: Objection. Form.

3 THE WITNESS: Well, in this paragraph I'm just
4 characterizing what is in the patent. The patent uses
5 the term problem. I'm saying purportedly addressed. I
6 really don't have an opinion as to whether or not it's
7 an actual problem, but, I mean, these are issues that
8 those that were perceived at the time of the invention
9 would be thinking about.

10 BY MR. WANG:

11 Q. Okay. But you don't have an opinion as to
12 whether or not it's an actual problem?

13 MR. PHILLIPS: Objection. Form.

14 THE WITNESS: I don't think I offer that opinion.
15 I'm just characterizing -- paraphrasing what's in the
16 patent.

17 BY MR. WANG:

18 Q. I guess then I'm asking for your opinion as
19 opposed to if you agree with it or not. I understand
20 it's -- the patent may not be what you wrote, but do
21 you agree with the characterization?

22 A. I would agree, yes, these were issues that
23 those working in the industry at the time had to deal
24 with. I don't really appreciate the substance of your
25 question. I mean, it -- it may have been an issue that

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1 is easily solved through obviousness, and isn't really
2 a problem in that sense.

3 Q. Okay. Do you see in the next paragraph you
4 talked about the proposed solution?

5 A. Yes.

6 Q. And you say that it's dynamically adapting
7 its channel access behavior based on whether it's
8 scheduled to participate in uplink transmission?

9 A. Yes.

10 Q. And then you say this involves establishing
11 two sets of channel access parameters, a set of legacy
12 parameters, which are suitable without UL-MU
13 transmissions and a set of MU parameters for use when
14 the STA is scheduled for UL and MU transmissions.

15 Do you see that?

16 A. Yes.

17 Q. And then you continue describing the patent
18 in paragraph 70. Could you -- could you read that as
19 well?

20 A. Okay. I've read it.

21 Q. In your discussion of the patent, are you
22 referring to the specification of the claims?

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: Well, I think more directly this
25 would be the specification, because it describes more

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1 in detail of how it works rather than just the claims.
2 But I think the claims -- you know, at least some of
3 what is in here is also in the claims.

4 BY MR. WANG:

5 Q. Do you know if the claims include anything
6 that's not in these paragraphs?

7 MR. PHILLIPS: Objection. Form.

8 THE WITNESS: Oh, they might. I mean, I don't
9 know if I completely characterized everything that's
10 been claimed in, you know, these four paragraphs. In
11 fact, I think some of the dependent claims in
12 particular are not described in this part of my report.

13 BY MR. WANG:

14 Q. Do you agree that for -- invalidity or
15 infringement analysis, it should be based on the
16 claims?

17 MR. PHILLIPS: Objection.

18 THE WITNESS: Yes.

19 Sorry, yes. It should be based on the
20 claims in light of the specifications.

21 BY MR. WANG:

22 Q. I want to ask about your -- so your
23 description of the '035 patent. We talked about what
24 you discussed as the purported problem in paragraph 68.
25 And then, is it fair that in paragraph 69 to 70 you're

Page 62

1 describing the proposed solution?

2 A. Yes, I think that would be fair enough. 69
3 and 70 is the purported or proposed solution.

4 Q. As -- are you aware of what you described
5 as the proposed solution being done before the priority
6 date?

7 MR. PHILLIPS: Objection. Form.

8 THE WITNESS: Well, I mean, there are aspects of
9 it that were done, as I detail in later parts of my
10 report. And as far as everything together operating in
11 exactly the same way, I don't have an opinion on that
12 right now.

13 BY MR. WANG:

14 Q. Do you have an understanding of the
15 relationship between IEEE standard and the claims?

16 MR. PHILLIPS: Objection. Form.

17 THE WITNESS: Well, there's an IEEE 802.11
18 standard. And, you know, the technology in these
19 patents, I believe, is directed towards 802.11. So I
20 would assume, if there were to an infringement read,
21 there might be an attempt to read it on the 802.11
22 standard.

23 BY MR. WANG:

24 Q. Do you know what version of the 802.11
25 standard the claims pertain to?

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1 MR. PHILLIPS: Objection. Form.

2 THE WITNESS: No. I've not done any sort of
3 infringement analysis of these patents.

4 BY MR. WANG:

5 Q. I'm not talking about the infringement
6 analysis, but you do discuss IEEE in your declaration;
7 right?

8 A. Yes. I in particular discuss the 802.11
9 standards that are published by IEEE.

10 Q. So how does that relate to the claims?

11 MR. PHILLIPS: Objection.

12 BY MR. WANG:

13 Q. Or your opinions?

14 MR. PHILLIPS: Objection. Form.

15 THE WITNESS: Well, there are multiple parts to
16 your question. So as it pertains to my validity
17 opinion, there are times where I do reference the
18 802.11 standard, because a lot of the features that
19 show up in the claim elements were already incorporated
20 in the 802.11 standard at the time of the patent.

21 You may have had another part to the
22 question, so -- I'm sorry.

23 BY MR. WANG:

24 Q. When you say already incorporated into the
25 802.11 standard, are you referring to -- what version

Page 64

1 are you referring to?

2 MR. PHILLIPS: Objection. Form.

3 THE WITNESS: Well, it may depend on the
4 particular part of my report. I think it was primarily
5 the one that's Exhibit Number Samsung 1017, which was
6 the standard as of 2012. But I may have also
7 referenced some other later versions.

8 BY MR. WANG:

9 Q. You said exhibit --

10 A. Yeah. It was Exhibit Samsung 1017.
11 There's that one.

12 I also -- I think at times I reference --
13 there's another exhibit, which is Samsung 1022. Which
14 is also an 802.11 document related.

15 There's also another one which was Samsung
16 1012, which is another IEEE 802.11 related document.

17 Q. You're familiar with the, like, letter
18 terminology of the 802.11 standard; right? You've
19 heard of A, B and --

20 A. Correct.

21 Q. And so what letter or terminology are you
22 referring to with the 802.11 standards documents?

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: Off the top of my head, I don't
25 recall the letter. I don't want to be -- give you an

Page 65

1 imprecise answer. I mean, it could be N or AC.

2 BY MR. WANG:

3 Q. Have you heard of 802.11ax?

4 A. Yes.

5 Q. And that's the same thing as Wi-Fi 6;
6 right?

7 A. I don't recall the exact mapping between
8 the IEEE standard and Wi-Fi number. Sorry.

9 Q. You say that you did reference 802.11
10 simply because a lot of the features that show up were
11 incorporated in the 802.11 standard at the time of the
12 patent. Do you recall that?

13 A. Yes.

14 Q. So you're referring to the time of 2016?

15 A. Yes.

16 Q. And so would that be 802.11n or some other
17 version goes?

18 MR. PHILLIPS: Objection. Form.

19 THE WITNESS: I'm not sure. It's at least N, but
20 whatever was known as of 2016.

21 BY MR. WANG:

22 Q. And then, you say a lot of the features
23 that show up, are you referring to the features in the
24 claims?

25 A. Yes. Some of the features in the claim

Page 66

1 elements would have been known in 802.11. I believe I
2 elaborate on that in my report when I go through the
3 grounds.

4 Q. Do you know if there are features that are
5 describing 802.11ax that are not in previous versions
6 802.11n and earlier?

7 MR. PHILLIPS: Objection. Form.

8 THE WITNESS: Well, to the extent that it's a
9 later standard, I would, of course, assumed there are
10 new features in it, but I can't really opine as to what
11 those new additional features are, sitting here.

12 BY MR. WANG:

13 Q. Were you involved in IEEE formally, or have
14 you been?

15 A. Yes. I'm a member of IEEE. I'm actually a
16 Fellow of the IEEE.

17 But I would qualify that. I haven't been
18 involved in standardization.

19 Q. Have you been involved in any 802.11 work
20 with IEEE?

21 MR. PHILLIPS: Objection.

22 THE WITNESS: I've not been directly involved in
23 the standardization of 802.11 through IEEE. I've
24 certainly written papers that are related and may have
25 been used by those that are working on the standards.

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1 BY MR. WANG:

2 Q. Do you have any experience or knowledge
3 about the standardization process for IEEE
4 specifically?

5 A. For IEEE, I have just a general
6 understanding. But I would not at all claim to be an
7 expert in the IEEE standardization process.

8 Q. If there are features that the claims that
9 are reflected in 802.11ax, you agree that they would
10 not be incorporated in the 802.11 at the time of the
11 patent?

12 MR. PHILLIPS: Objection. Form.

13 THE WITNESS: No, absolutely not. I think -- if I
14 understand your question correctly, I think that's kind
15 of the opposite of what we were just talking about,
16 which is that when you look at a standard like
17 802.11ax, it builds upon previous standards; right? So
18 it includes what's in earlier standards, like 802.11ac
19 and has those features in it and then perhaps some
20 additional features.

21 BY MR. WANG:

22 Q. But the additional features, by definition,
23 would not be in the earlier versions of the standard?

24 MR. PHILLIPS: Objection. Form.

25 THE WITNESS: So I think it's fair to say that a

Page 68

1 feature that's new to 802.11ax -- and by new I mean
2 it's not in 802.11ac -- I think it would be fair to
3 characterize that new feature as not being in IEEE
4 802.11ac.

5 BY MR. WANG:

6 Q. Have you attempted to map the claims to --
7 the claims of the '035 patent to either 802.11ac or
8 802.11ax?

9 MR. PHILLIPS: Objection. Form.

10 THE WITNESS: No, I've not done an infringement
11 analysis against those standards. The closest may be,
12 as is in my report, some discussion of how certain
13 features may have already been incorporated in prior
14 versions of the 802.11 standard at the time of the
15 priority date of the patent.

16 At this point we've gone an hour, take a
17 break if you would like.

18 MR. WANG: Yeah, let's go off the record.

19 (A recess was taken, after which the
20 proceedings were resumed as follows.)

21 BY MR. WANG:

22 Q. Welcome back, Dr. Valenti.

23 Did you have any discussions with counsel
24 during the break?

25 A. This past break I had a quick call with

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1 counsel.

2 Q. Did you discuss the substance of your
3 testimony?

4 A. No.

5 Q. Doctor, can you turn to paragraph 65 of
6 your declaration.

7 A. Okay.

8 Q. Here you're talking about -- you're talking
9 wireless networks and then 802.11 acknowledgments often
10 referred to as ACKs. Do you see that?

11 A. Yes.

12 Q. What version of 802.11 are you referring
13 to?

14 A. Well, all versions of 802.11 use some sort
15 of ACK, even dating back to really 802.11. Specific
16 details here, I can't answer without looking at the
17 specific, you know, version of 802.11.

18 Q. Let me back up and ask something else.

19 Dr. Valenti, is it your understanding that
20 today's deposition is about the two declarations that
21 you submitted, that we've introduced as exhibits in the
22 '035 patent IPR and the '879 patent IPR?

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: Yes. My understanding is I'm being
25 deposed on the contents of those two declarations.

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1 BY MR. WANG:

2 Q. And then there's -- you would agree that
3 there's substantial overlap between those two patent
4 claims and your declarations between the two?

5 A. Yes. There are -- there's overlap in the
6 claims of the two patents, and similarly there's
7 overlap in my two declarations.

8 Q. The problem is when I jump around, I lose
9 my train of thought.

10 Doctor, we were talking about ACK policy.
11 And let's look at paragraph 97 of your declaration.

12 So before you testified that acknowledgment
13 or ACK protocols were used in 802.11; correct?

14 A. Yes.

15 Q. And you said that -- is it your
16 understanding that most or all versions of 802.11 use
17 ACK policies?

18 A. No. I don't think I said that. I think I
19 said that they use ACKs in general. ACK policy, I
20 can't say sitting here what point that was introduced
21 into the 802.11 standards.

22 Q. What's your understanding of an ACK policy?

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: So there's different ways for the
25 access point to acknowledge transmissions through an

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1 ACK. It could be a simple ACK. A Block ACK. A
2 multi-station Block ACK, or perhaps no ACK at all. So
3 acknowledgment policy would be just a way for the
4 system to know which one of those options to use.

5 BY MR. WANG:

6 Q. Okay. So if we just use the word ACK --
7 right? -- acknowledgment, what is that?

8 MR. PHILLIPS: Objection. Form.

9 THE WITNESS: Just the word acknowledgment would
10 be, in this context, a receiver acknowledging that it
11 has correctly received a transmission. .

12 BY MR. WANG:

13 Q. And the concept of an acknowledgment has
14 been known for a long time in computer science or
15 wireless communications?

16 A. Yes. Acknowledgments have been used for a
17 long time in wireless communications.

18 Q. "Roger that" is an acknowledgment?

19 MR. PHILLIPS: Objection. Form.

20 THE WITNESS: Yeah, I think in common use, if
21 someone says something in response to "Roger that,"
22 that might be of some context considered to be an
23 acknowledgment.

24 BY MR. WANG:

25 Q. So then your declaration uses different

1 phrases. It talks about an ACK policy and an ACK
2 protocol. So what do you mean by an ACK policy?

3 A. So specifically the ACK policy is something
4 that the station would send to the access point
5 characterizing what kind of acknowledgment, if any at
6 all, it would expect to receive.

7 Q. Okay. So in paragraph 65 you said the
8 sender's expectations are governed by the ACK policy,
9 which is indicated in the QoS control field of the MAC
10 header.

11 Do you see that?

12 A. Yes.

13 Q. And so the sender indicates or determines
14 that field of the MAC header?

15 MR. PHILLIPS: Objection. Form.

16 THE WITNESS: It indicates it. I'm not sure what
17 you mean by determines, but it's indicated in the QoS
18 control field, which is header.

19 BY MR. WANG:

20 Q. And the recipient is the entity receiving
21 the message; correct?

22 A. I don't know if I used the word recipient,
23 but I think that would be fair. If you have a sender
24 that sends a message, you could call the entity
25 receiving the message a recipient.

1 Q. And the recipient would be the entity
2 sending the acknowledgment or ACK?

3 MR. PHILLIPS: Objection. Form.

4 THE WITNESS: Yes. So recipient being the
5 receiver of the transmission, then that recipient would
6 respond with an ACK. So it would be the recipient
7 that's transmitting the ACK.

8 BY MR. WANG:

9 Q. And the recipient would understand the
10 sender's ACK policy or expectations as to the ACK
11 policy?

12 MR. PHILLIPS: Objection. Form.

13 THE WITNESS: Well, I guess grounding it in this
14 discussion, in paragraph 65, if the senders includes an
15 ACK policy, then, yes, the recipient would receive that
16 ACK policy. And presumably it will look at the ACK
17 policy and interpret it and decide what to do.

18 BY MR. WANG:

19 Q. And you've discussed this more in
20 paragraph 66; correct? You're talking about a station,
21 that would be the sender. And then the AP, would that
22 be the recipient?

23 MR. PHILLIPS: Objection. Form.

24 THE WITNESS: Yes, in terms of our present
25 discussion that access point would be the recipient of

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1 the transmission and would be who would respond with
2 the acknowledgment.

3 BY MR. WANG:

4 Q. And you cite here Exhibit 1022. Do you see
5 that?

6 A. Yes.

7 Q. Is that the 802.11 standard?

8 A. It is an 802.11-related document. I don't
9 know if it's the entire standard. I'm just looking at
10 my list of documents considered back on page 10. And
11 it's listed as IEEE 802.11-16/0024R1.

12 Q. Okay. In this discussion you also quote
13 another exhibit; right? Or cite another exhibit?

14 MR. PHILLIPS: Objection. Form.

15 THE WITNESS: Okay.

16 BY MR. WANG:

17 Q. Exhibit 1017; right?

18 A. Yes.

19 Q. Do you know what 1017 is?

20 A. So 1017, it is the 802.11 part 11
21 specification standard for IEEE. I can pull it up, but
22 I believe that's the full standard as of 2012.

23 Q. Okay. Do you have it with you or you're
24 relying on your understanding?

25 A. I'm just looking at how it's characterized

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1 in my list of references. I think I do have it over
2 here in the floor. It's that large document, I
3 believe.

4 Q. Okay. And do you know what Exhibit 1022
5 is?

6 A. I don't recall exactly what it is. It is
7 related to 802.11.

8 Q. Okay. For convenience, I'm just going to
9 send these two exhibits through the Zoom chat and -- so
10 please download them and open them.

11 A. Okay.
12 Files are large.

13 Q. Are you on Wi-Fi 6?

14 A. I think so. I'm not exactly sure.

15 Q. So I just sent what's already been marked
16 as Exhibits 1017 and 1022 in this IPR.

17 (Exhibit Number 1017 and 1022 were
18 previously marked for identification.)

19 BY MR. WANG:

20 Q. Doctor, can you open up 1017 first.

21 A. Yes. It's open.

22 Q. So just looking at the first page, it says
23 it's part 10, as a heading, and then it has a date
24 March 29, 2012. Do you see that?

25 A. Yes.

1 Q. And is this consistent with your
2 understanding of the exhibit that you cite?

3 A. Yes.

4 Q. Do you know what version this corresponds
5 to, like based on the date if it is AC or something
6 else?

7 A. I don't know for sure. I mean, it doesn't
8 actually say on the cover, and I don't know for sure,
9 like, the letter that would be attributed to this.

10 Q. Okay. Can you look at the -- maybe the
11 third page of the document? Do you see it says
12 approved, February 6, 2012, IEEE SA standards board?

13 A. Yes.

14 Q. So this is a public document. At least as
15 of when it was approved; right?

16 A. I don't know when it would have been made
17 public or publicly available.

18 Q. Is it common for it to be made public or
19 publicly available after the approval date?

20 A. I don't really know. It should be made
21 available at some point, obviously since you have it,
22 but I don't know at what point it became available.

23 Q. Okay. If if the public date is -- may not
24 be exactly the approval date, do you have an
25 understanding if it's soon after or potentially years

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1 after?

2 MR. PHILLIPS: Objection. Form.

3 THE WITNESS: I really don't have an opinion as to
4 when this would have been made public.

5 BY MR. WANG:

6 Q. Okay. Are you relying on this as prior
7 art, this exhibit?

8 A. No. This is not the prior art document.
9 For instance, it's not part of any of the grounds, but
10 I'm using it as an example of what would have been
11 known to POSITA at the time of the invention.

12 Q. So it's not an asserted prior art
13 reference; correct?

14 A. Correct. Yeah. This particular case for
15 these IPRs, that's not part of the grounds.

16 Q. Are you then relying on this as a
17 background reference as what a person of ordinary skill
18 would know?

19 A. Yes. I think that would be fair. It's
20 background, and it is certainly relevant to the prior
21 art that we are using as part of the grounds because
22 the prior art has to do with 802.11.

23 Q. Okay. But then you express uncertainty
24 about whether this document was publicly available.
25 Like the date of that; right?

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1 MR. PHILLIPS: Objection. Form.

2 THE WITNESS: Well, I'm not disputing that it's
3 publicly available. I mean, it's obviously publicly
4 available, because we're looking at it. I just don't
5 know the exact date, so I can't really speculate as to
6 what day this particular document became publicly
7 available. That's something maybe a librarian could
8 help with.

9 BY MR. WANG:

10 Q. Do you believe or assume that it was
11 publicly available before the priority date?

12 MR. PHILLIPS: Objection. Form.

13 THE WITNESS: Yes. I would assume that it was
14 available, you know, at least by the priority date and
15 no later than that.

16 BY MR. WANG:

17 Q. If it weren't publicly available or if it
18 were confidential, do you agree that it wouldn't be
19 part of the knowledge of a person of ordinary skill?

20 A. Well, it may or may not. I mean, someone
21 could have a proprietary document that contains
22 entirely known information. So just because it's
23 proprietary doesn't mean that someone else doesn't know
24 what's in there. Right?

25 I could have my own recipe for a peanut

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1 butter sandwich that I don't share, but you would
2 probably know how to make it as well.

3 Q. But you would agree that a document that
4 was not publicly available as of the relevant date
5 would not be -- used as evidence of what was known by
6 POSITA?

7 MR. PHILLIPS: Objection. Form.

8 THE WITNESS: Yeah. I mean, that gets into some
9 legal aspects as to what you can and cannot use as
10 evidence. I mean, I certainly probably wouldn't use an
11 unknown document as evidence, but that's just me. And
12 I'm not a lawyer.

13 BY MR. WANG:

14 Q. Well, I mean, it wouldn't be unknown. It
15 would just be something we're looking back at it now
16 and it was made publicly available at some time after.
17 My question is, if we're trying to ascertain whether a
18 person of skill would know that relying on a document
19 at the time that was confidential would not be evidence
20 of that. Perhaps you could use other documents that
21 weren't confidential that would show what a person of
22 skill would know, but not appropriate to use
23 confidential documents.

24 MR. PHILLIPS: Objection. Form.

25 THE WITNESS: It sounds like you're asking me to

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1 make a legal opinion as to what would be proper and
2 improper. I'm not a lawyer, so I can't really comment
3 on that.

4 BY MR. WANG:

5 Q. And you have no opinion about what I just
6 said or tried to ask?

7 A. I mean, it sounds --

8 MR. PHILLIPS: Form.

9 THE WITNESS: It sounds a bit legalese as to what
10 would not be permissible to use as evidence.

11 BY MR. WANG:

12 Q. Okay. Could you please open up
13 Exhibit 1022 that I sent?

14 A. Okay.

15 Q. What is this document?

16 A. The document contains a proposal for the
17 TGAX draft amendment. It captures the
18 feature requirements outlined in the TGAX specification
19 framework document in the detailed draft text.

20 Q. What is TGAX? Yes. T-G-A-X.

21 A. I can't say I recall what that stands for.
22 Sitting here, I can't remember exactly what TGAX as an
23 abbreviation means.

24 Q. Do you see that there's a date on the front
25 page that says proposed TGAX draft specification date

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1 March 2nd, 2016?

2 A. Yes. I see that.

3 Q. Do you know what that date refers to?

4 A. It's just a date on the first page of this
5 document.

6 Q. Do you see the right side, there's like a
7 big long gray rectangle?

8 A. Yes.

9 Q. Does that look like -- like something in
10 Microsoft Word, when there's track changes or comments?

11 MR. PHILLIPS: Objection. Form.

12 THE WITNESS: I don't really know why there's that
13 gray rectangle on the right side. In scrolling through
14 it, I don't see any comments or notes or anything in
15 the gray rectangle.

16 BY MR. WANG:

17 Q. I think there is maybe one instance or
18 some -- bear with me.

19 Is this consistent with -- like what would
20 be added in Microsoft Word to track changes or
21 comments, based on your experience?

22 MR. PHILLIPS: Objection. Form.

23 THE WITNESS: I really don't know. I'm not really
24 familiar with documents that have large gray rectangle
25 on the right side and certainly can't speculate as to

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1 why this particular document has a large gray rectangle
2 on the right side.

3 BY MR. WANG:

4 Q. Okay. Let me ask you then, what is this
5 document? And do you know where it came from?

6 A. Well, as we discussed before, this is the
7 proposed TGAX draft amendment. I can't remember
8 exactly where it came from. I do believe it is from
9 IEEE standards association.

10 Q. Do you know if it's publicly available or
11 if it was downloaded from a website?

12 A. No. I do not know the source or provenance
13 of this.

14 Q. This document is not marked confidential;
15 right?

16 A. No, it is not marked confidential.

17 Q. Do you know when this document became
18 publicly available?

19 A. No, I do not.

20 Q. If you have the PDF opened, Doctor, can you
21 turn to page 103 of the PDF?

22 A. Okay.

23 Q. Do you see at the bottom of the page that
24 there's like a green box that says "field code change"?

25 A. Yes.

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1 Q. Does this inform my previous question does
2 this -- is that consistent with like a Microsoft Word
3 bubble when track changes is turned on or comments are
4 turned on?

5 A. Yeah, all I see is it's -- it says field
6 code changed, some sort of comment. I really don't
7 know what kind of software was used to produce this, so
8 it's hard for me to speculate as to how that software
9 was set up or used.

10 Q. You use Microsoft Word frequently -- right?
11 -- as part of your work?

12 A. Yes. I do sometimes use Microsoft Word.

13 Q. And does this look like something generated
14 by Microsoft Word based on your use of the program?

15 A. It could, but again, I don't know.

16 Q. Okay. Do you have any information or
17 opinion about whether this document is publicly
18 available and when it was?

19 MR. PHILLIPS: Objection. Form.

20 THE WITNESS: I really don't have an opinion as to
21 when this was publicly available.

22 BY MR. WANG:

23 Q. Are you relying on this document as
24 background prior art?

25 A. No. This document is not one of the prior

1 art references used to form the grounds. This was more
2 just background, what would have been consistent with
3 what was known by POSITA at the time of the patent.

4 Q. Okay. Turning back to your declaration, do
5 you recall we were talking about paragraph 66?

6 A. Yes.

7 Q. And then we were talking about your
8 citations Exhibit 1017 and 1022. Do you recall that?

9 A. Correct.

10 Q. And now we've kind of taken a quick look at
11 those two exhibits; agreed?

12 A. Yes.

13 Q. So for Exhibit 1017, you expressed the
14 opinion that although you weren't sure when the
15 document became publicly available, it would have been
16 as of the priority date; is that fair?

17 A. Yes.

18 Q. Can you say the same about Exhibit 1022?

19 A. Well, again, I don't know for sure when
20 1022 was made public, just sitting here. I'm not a
21 librarian and I don't remember those details.

22 Q. Okay. So you're not sure when it comes to
23 1022?

24 A. Yeah, I'm not sure one way or the other.
25 It may very well have been before the priority date,

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1 but, you know, just sitting here, just based on looking
2 at the document that I downloaded, I can't say for
3 certain.

4 Q. What makes you more certain for 1017?

5 A. Well, I mean, 1017 is the full IEEE
6 standard. We saw the dates. It was approved on 2012.
7 And as we discussed, you know, it would make sense that
8 it would be made public at some point. And, certainly,
9 you know, within four years you think it would be made
10 public within that timeline.

11 Q. Let's jump up to paragraph 96 of your
12 declaration, please. And for context do you see here
13 you say -- you're talking about the combination.
14 Third, the combination.

15 A. Third, yes, that's the start.

16 Q. "Third, the combination," do you see that?

17 A. Yes.

18 Q. And just for context, when you say "the
19 combination," you're referring to in paragraph 92 the
20 combination of Zhou and Cherian and Kim?

21 A. Yes.

22 Q. Okay. For motivation combined, is it your
23 opinion that POSITA would start with Zhou as the
24 primary or base reference?

25 MR. PHILLIPS: Objection. Form.

1 THE WITNESS: I'm not sure what you mean by base
2 reference. I mean, it's a combination of three
3 references.

4 BY MR. WANG:

5 Q. Okay. So for motivation combined or
6 obviousness, is it your understanding that you start
7 with one reference or it's just a combination of all
8 three?

9 MR. PHILLIPS: Objection.

10 THE WITNESS: Yeah, I don't really have an opinion
11 there. It's a combination.

12 BY MR. WANG:

13 Q. Okay. So the concept of starting with one
14 reference is unfamiliar to you?

15 A. I think that's one approach you could take.
16 I'm not sure if it really materially matters. When you
17 have a combination, you're combining them. I don't
18 think any one needs to be identified as a base.

19 Q. For your opinions in this IPR under the
20 grounds, do you start with one reference or rely on any
21 reference as the base reference?

22 MR. PHILLIPS: Objection. Form.

23 THE WITNESS: Again, I really -- you know, I don't
24 really think that base matters, any other combination.

25 I think when I go through it, there may be

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1 some features that perhaps only require two of the
2 references, but I don't think I need or have identified
3 a so-called base reference.

4 BY MR. WANG:

5 Q. Okay. So look at paragraph 24 of your
6 declaration, which has the three grounds.

7 A. Okay.

8 Q. And then you say ground 1, you say
9 obviousness in view of Zhou, Cherian and Kim. In
10 ground 2, in view of Zhou, Cherian, Kim, Ho. Ground 3
11 in view of Zhou, Cherian, Kim, Bharghavan. Do you see
12 that.

13 A. Yes.

14 Q. And so do you think the order that you list
15 the references doesn't matter for your opinions that,
16 for example, for ground 1, you could have said Cherian,
17 Zhou, Kim?

18 A. Yes. The order is mostly irrelevant. I
19 mean, certainly, you know, when I wrote the grounds, I
20 would have had to describe things in a different way.
21 But the ordering really doesn't matter.

22 Q. When I describe like starting with a base
23 reference and then -- okay. Strike that.

24 Have you heard of the term a secondary
25 reference?

1 MR. PHILLIPS: Objection.

2 BY MR. WANG:

3 Q. For obviousness?

4 A. I don't know. I mean, it's a combination.
5 So, you know, it sounds like it's the same question
6 about base reference and that would imply there would
7 be some secondary reference, but it's not a term I
8 really come across very often.

9 Q. Have you come across the term of base
10 reference or know what I'm referring to?

11 MR. PHILLIPS: Objection. Form.

12 THE WITNESS: Again, as it pertains to base
13 reference, I mean, I may have heard it, but it's not
14 something I use in common every day, but I think I
15 understand what you mean by it.

16 BY MR. WANG:

17 Q. Okay. And I think your testimony was that
18 your obviousness opinions don't rely on that. You said
19 it's just a combination, you're not starting with a
20 base reference?

21 MR. PHILLIPS: Objection. Form.

22 THE WITNESS: Yeah. Correct. It's the
23 combination. So, yeah, the ordering doesn't really
24 matter.

25 BY MR. WANG:

1 Q. Okay. Let's go back to paragraph 97,
2 please. Sorry, 96.

3 So I just wanted to give the context, which
4 is when you say "the combination," you're referring to
5 the combination of Zhou, Cherian, and Kim; correct?

6 A. Yes.

7 Q. And in the second sentence when you say the
8 critical date, was that the September 2016 date that we
9 were referring to?

10 A. Yes.

11 Q. Do you see further in this paragraph you
12 say that -- you talk about it would have been obvious
13 for POSITA to try Kim's method of when to set or
14 otherwise use a timer?

15 MR. PHILLIPS: Objection. Form.

16 THE WITNESS: Which page are we on? It's a long
17 paragraph.

18 BY MR. WANG:

19 Q. Yes. So on page 52.

20 A. What was the passage again?

21 Q. You talk about -- the sentence begins with
22 "In other words, given the limited number of choices as
23 to when to set Cherian's EDCA parameter set timer, it
24 would have been obvious for POSITA to try Kim's method
25 of when to set or otherwise use a timer."

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1 Do you see that?

2 A. Yes. Correct.

3 Q. Okay. Does Kim disclose using a timer?

4 A. No. There's not a timer in Kim. I think

5 what I meant here was I making reference to Kim's

6 acknowledgments and using Kim's acknowledgments to

7 inform when to set the timer.

8 Q. But here you're referring to Kim's method

9 of when to set or otherwise use the timer. Am I

10 reading that wrong?

11 A. Yes. The proper way to parse it -- my

12 apologies, it's probably not written in the most clear

13 method or clear way. I say Kim's method of when. So

14 the when comes from Kim.

15 And then the set or otherwise use a timer,

16 that's pulling Cherian back in. So I am referring to

17 the combination, obviously, in order to describe the

18 timer.

19 Q. You agree that Kim doesn't disclose setting

20 a timer?

21 A. Yeah, I would agree Kim doesn't have a

22 timer, so it would make sense, it doesn't disclose

23 setting a timer.

24 Q. So when you say Kim's method of when, just

25 focusing on that phrase, that's not about a setting a

Page 91

1 timer, right, if there's a when?

2 A. Right. I was referring to Kim's method of
3 acknowledgments using that for timing. So, yeah, I
4 admit this is probably not the most eloquently written
5 sentence in this entire declaration, but I think I am
6 clear when I get into the ground-by-ground or
7 element-by-element analysis what I mean.

8 Q. Okay. And the next sentence, just a
9 phrase, it says Kim provides the acknowledge policies
10 that would allow -- and then it goes on. Do you see
11 that?

12 A. Yes.

13 Q. Does that clarify what you're talking about
14 where -- or what you're referring to?

15 A. Yes, absolutely. I mean, this is a better
16 sentence in terms of the intent of what I meant to say,
17 that Kim provides the acknowledgment policies that
18 would allow the transmitting station to know whether
19 the transmission was successful. And if successful, to
20 set Cherian's timer.

21 Q. Cherian doesn't discuss acknowledgment
22 policies, does it?

23 A. No, I don't believe that it does. I would
24 have to kind of look at the entire document again. It
25 may have some references to acknowledgments, but I

Page 92

1 don't recall acknowledgment policies.

2 Q. What about Zhou? Do you have the opinion
3 that it discloses either setting the timer or
4 acknowledgment policies?

5 A. Well, Zhou definitely talks about
6 acknowledgments. I do recall that. I'm not sure,
7 sitting here, if it uses the term acknowledgment
8 policies. But it does talk about acknowledgments more
9 generally.

10 Q. Okay. What about setting a timer in this
11 context? Does Zhou disclose that, in your opinion?

12 A. So, yes, Zhou does have a timer. It is
13 disclosed in Zhou.

14 Q. Okay. Going back to this paragraph, do you
15 agree that none of the references disclose using or
16 setting an EDCA timer based on an acknowledgment
17 policy?

18 MR. PHILLIPS: Objection. Form.

19 THE WITNESS: Okay. So let's back up. You're
20 talking about within the context of a single paragraph,
21 what I stated?

22 BY MR. WANG:

23 Q. We're just talking about paragraph 96. We
24 were talking about Cherian and Kim first. Do you
25 recall that?

1 A. Yes.

2 Q. Okay. And we were talking about what they
3 disclose or don't disclose. Do you agree that neither
4 discloses using or setting an EDCA timer based on an
5 acknowledgment policy?

6 MR. PHILLIPS: Objection. Form.

7 THE WITNESS: I don't know if I've considered
8 that. You're asking -- if I understand the question,
9 you're asking if Cherian and Kim individually
10 anticipates a certain claim element?

11 BY MR. WANG:

12 Q. No, I didn't use the word anticipate. I
13 think I'm asking you about -- yeah, the references,
14 individually, that neither -- because we're talking
15 about these references in this part of the paragraph --
16 discloses using an EDCA timer based on an
17 acknowledgment policy?

18 MR. PHILLIPS: Objection. Form.

19 THE WITNESS: Okay. So you may have to repeat the
20 question. It seems different than the previous one.

21 BY MR. WANG:

22 Q. All right. One step at a time.

23 A. Okay.

24 Q. You said that Kim doesn't disclose using a
25 timer; right?

1 A. Right.

2 Q. So, therefore, Kim does not disclose using
3 the timer or an EDCA timer based upon an acknowledgment
4 policy?

5 A. Yes. To the extent that Kim does not
6 disclose a timer, I think that would be a fair
7 statement.

8 Q. You say that Cherian discloses using an
9 EDCA timer; right?

10 MR. PHILLIPS: Objection. Form.

11 THE WITNESS: Yes.

12 BY MR. WANG:

13 Q. You agree that Cherian does not disclose
14 using an EDCA timer based on an acknowledgment policy?

15 A. Yeah. That's something where I don't think
16 I've opined on that. So if you're asking me to
17 affirmatively say if it discloses it, I can't answer
18 that one way or the other.

19 Q. So you have no opinion about whether it
20 does or not?

21 MR. PHILLIPS: Objection. Form.

22 THE WITNESS: Right. So what's in my report is,
23 you know, the opinions that I've formed. And you're
24 asking me to form a different opinion. I could tell
25 you what opinions I've formed, but not what I've not

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1 formed.

2 BY MR. WANG:

3 Q. Okay. Let me put it a different way.

4 You offer no opinion that Kim -- sorry.

5 You offer no opinion that Cherian discloses
6 using an EDCA timer based on an acknowledgment policy?

7 MR. PHILLIPS: Objection. Form.

8 THE WITNESS: Could you repeat the question?

9 BY MR. WANG:

10 Q. Yes.

11 You offer no opinion that Cherian discloses
12 using an EDCA timer based on an acknowledgment policy?

13 MR. PHILLIPS: Objection. Form.

14 THE WITNESS: Yes. I think it's fair enough to
15 say that I don't offer that opinion. But, again, it's
16 a large report, and it could be in there.

17 BY MR. WANG:

18 Q. Well, first I asked if it does or not, and
19 you said that I was asking you about something that you
20 didn't have an opinion on. Hence, I was trying to get
21 to the bottom of this, which is -- then you offer no
22 opinion that it does.

23 And is there best testimony now that you
24 agree you don't offer that opinion?

25 MR. PHILLIPS: Objection. Form.

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1 THE WITNESS: Before I answer, maybe if you could
2 form it into a self-contained question so I know what
3 I'm --

4 BY MR. WANG:

5 Q. Do you offer the opinion that Cherian
6 discloses using an EDCA timer based on acknowledgment
7 policy?

8 MR. PHILLIPS: Objection. Form.

9 THE WITNESS: To the best of my recollection and
10 looking through my report right now, I don't believe
11 that I have offered that opinion, that Cherian alone
12 discloses that feature.

13 BY MR. WANG:

14 Q. Okay. Do you offer the opinion that Zhou
15 discloses using an EDCA timer based on an
16 acknowledgment policy?

17 A. So my answer would be the same. To the
18 best of my recollection and looking through my report
19 right now, I haven't rendered an opinion that Zhou
20 alone discloses that particular feature.

21 MR. PHILLIPS: Philip, finish up your line of
22 questioning of course, but do you see a break coming
23 ahead?

24 MR. WANG: Yeah. We've been going for less than
25 an hour, but let me keep going. Your request is noted.

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1 BY MR. WANG:

2 Q. I want to at a high level discuss -- turn
3 to paragraph 93, please.

4 Do you see here you list like factors that
5 a person of skill would be motivated by?

6 A. Yes.

7 Q. All right. I just want to discuss them at
8 a high level. So the first one you say is motivated to
9 optimize transmissions between MU and MU modes -- SU
10 and MU modes. Do you see that?

11 A. Yes.

12 Q. What do you mean optimize transitions?

13 A. So the transitions that are being discussed
14 here are transitions from an uplink multi-user mode
15 back to an uplink single-user mode. And so this
16 combination here would provide an efficient way to
17 transition back from the multi-user mode back to the
18 single-user mode. So efficiency. For instance, not
19 remaining in the multi-user mode any longer than it
20 needs to and moving back at an appropriate time.

21 Q. So to optimize transitions, that's just a
22 goal of computer systems and communications in general;
23 right?

24 MR. PHILLIPS: Objection. Form.

25 THE WITNESS: I'm sorry, one of the words I did

Page 98

1 not hear.

2 BY MR. WANG:

3 Q. I said, optimizing transitions is a goal in
4 computer systems and communications systems in general;
5 right?

6 A. I don't know if I would agree that that's
7 always an objective of a computer system or a
8 communications system. I would agree there are many
9 examples where you would want to do that, but I don't
10 think that's a universal goal of communications.

11 Q. Well, when you say optimize, that just
12 means making something better; right?

13 A. Yes. I mean, I think you would always
14 strive to make things better.

15 Q. And as a computer scientist or an
16 electrical engineer, you always want to optimize?

17 MR. PHILLIPS: Objection. Form.

18 THE WITNESS: Possibly. I mean, there's different
19 ways to optimize. It could be performing or it could
20 be cost, for instance.

21 BY MR. WANG:

22 Q. Let's look at paragraph 95. Here you say
23 POSITA would have been motivated to implement the
24 transitions between UL and SU and UL and MU modes in an
25 efficient manner by reducing wasted overhead.

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1 Do you see that?

2 A. Yes.

3 Q. Do you agree that in computer systems it's
4 always the goal to work in an efficient manner and to
5 reduce wasted overhead?

6 A. Again, I don't know if that is a universal,
7 you know, criteria for designing systems. It may in
8 fact be a common objective, but it's hard for me to
9 comment that's always the objective for every computer
10 scientist.

11 Q. The word efficiency kind of like
12 optimization just implies improvement; right?

13 MR. PHILLIPS: Object to form.

14 BY MR. WANG:

15 Q. Something that's more efficient?

16 A. Yeah. I mean, I would agree that efficient
17 is kind of a type of improvement.

18 Q. And it's always good, if you have the
19 phrase wasted overhead, to reduce it; right?

20 A. Generally speaking, if you can avoid
21 wasting overhead, that would generally be a good thing.

22 Q. Okay. Let's look at paragraph 96. You say
23 -- we looked at this before.

24 Addressed a known design need for robust,
25 efficient wireless networks.

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1 A. Yes.

2 Q. Do you see that?

3 A. Yes.

4 Q. What does robust mean?

5 MR. PHILLIPS: Objection. Form.

6 THE WITNESS: Well, robust generally means the

7 ability to operate under a variety of conditions.

8 BY MR. WANG:

9 Q. Okay. And in general, a wireless network

10 or any computer system being robust and efficient is

11 good; right?

12 MR. PHILLIPS: Objection. Form.

13 THE WITNESS: Well, generally speaking. Maybe not

14 in all cases having a more robust system would be a

15 good thing.

16 BY MR. WANG:

17 Q. Okay. Let's turn to paragraph 97. Do you

18 see -- you say "Fourth"?

19 A. Yes.

20 Q. And at the end there you say reliable data

21 delivery. Ensure reliable data delivery.

22 A. Yes.

23 Q. And reliable data or reliable data delivery

24 is a good thing for all computer systems; right?

25 MR. PHILLIPS: Objection. Form.

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1 THE WITNESS: Not to generalize, but I think in
2 most cases you would want to have reliable
3 communications. That would be the typical objective.

4 BY MR. WANG:

5 Q. Would you ever want computer systems or
6 communications to be unreliable?

7 A. Not usually. There may be some strange
8 cases, but I can't think of any.

9 Q. Okay. Paragraph 98, you say, "Fifth," and
10 then you say "Potential for enhanced performance across
11 multiple dimensions of a wireless LAN system."

12 Do you see that?

13 A. Yes.

14 Q. That phrase, "potential for enhanced
15 performance," enhanced performance is a good thing;
16 right?

17 MR. PHILLIPS: Objection. Form.

18 THE WITNESS: Yes, generally, as we've been
19 discussing, if you can improve or enhance performance
20 it's usually considered to be a good thing.

21 BY MR. WANG:

22 Q. It's like self-evidently a good thing when
23 you use like enhanced; right? That word.

24 MR. PHILLIPS: Objection. Form.

25 THE WITNESS: Yeah. Generally enhanced is a good

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1 thing.

2 BY MR. WANG:

3 Q. And then you say "enhanced performance
4 across multiple dimensions." That just means in
5 multiple ways; right?

6 MR. PHILLIPS: Objection. Form.

7 THE WITNESS: Yes. Multiple dimensions would be a
8 performance in different ways as approved.

9 BY MR. WANG:

10 Q. Okay. And then in paragraph 99 you say --
11 in that first sentence it says "Contribute to the
12 overall performance of WLAN." Do you see that?

13 A. No. Is that the first sentence?

14 Q. Yeah. The end of the first sentence in
15 paragraph 99, and then the end of it. "And contribute
16 to the overall performance of WLAN."

17 A. Yes.

18 Q. And then that's a good thing, improving or
19 contributing, if you use the phrase, overall
20 performance, that's good; right?

21 MR. PHILLIPS: Objection. Form.

22 THE WITNESS: Well, I think it would be fair
23 enough to characterize that these each would contribute
24 to improving the overall performance.

25 BY MR. WANG:

1 Q. And for any computer system or
2 communications system, improving the overall
3 performance is good?

4 MR. PHILLIPS: Objection. Form.

5 THE WITNESS: Well, again, as we've discussed,
6 improving performance is generally considered good.

7 MR. WANG: Let's go off the record.

8 (A recess was taken, after which the
9 proceedings were resumed as follows.)

10 BY MR. WANG:

11 Q. Dr. Valenti, welcome back.

12 Did you have any discussions with counsel
13 during our break?

14 A. No, I did not.

15 Q. Going back to your grounds in paragraph 22,
16 can we do that?

17 A. Okay.

18 Q. I'm sorry, 24.

19 A. Okay.

20 Q. For ground two, do you rely on the
21 additional ground of Ho for the additional elements in
22 the depending claims, 4 and 5?

23 A. Yes. I do.

24 Q. Because those elements are not found in
25 Zhou, Cherian, and Kim?

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1 MR. PHILLIPS: Objection. Form.

2 THE WITNESS: I don't know if I would opine on
3 that. I've added Ho in because it discloses those
4 features, which is not to say they may or may not have
5 been in the other references. I just didn't offer an
6 opinion on that.

7 BY MR. WANG:

8 Q. Okay. Did you analyze if they were in the
9 first three references?

10 A. No. I didn't conduct an analysis if the
11 features were independently in there. We may want --
12 if you want, we can walk through those. Because they
13 may have multiple elements.

14 Q. Do you recall what additional elements that
15 are in claims 4 and 5?

16 MR. PHILLIPS: Objection. Form.

17 THE WITNESS: So claim 4 talks about -- there's a
18 process to calculate a random integer within a
19 contention window and accessing the channel based on
20 the back host timer and particular time slot. And then
21 it provides some guidance on parameters like CW, CW
22 Min, CW Max. Those are the type of features in at
23 least claim 4.

24 BY MR. WANG:

25 Q. Okay. For ground 3, do you rely on the

Page 105

1 additional reference of -- sorry for the background
2 noise.

3 You rely on the additional reference of
4 Bharghavan; right?

5 A. Yes.

6 Q. For defending claims 6 and 7?

7 A. Correct.

8 Q. Do you recall what feature is in claim 6
9 and 7 that you relied on Bharghavan?

10 A. So, for instance, Bharghavan has a method
11 to operate a plurality of queues that are classified
12 according to an access category of data stored in the
13 queue.

14 Q. So it's the concept of access categories?

15 MR. PHILLIPS: Objection. Form.

16 THE WITNESS: No. It's not just access
17 categories. That was well known. It was having a
18 plurality of queues. That's just one -- that's part of
19 claim 6. There's some other elements in claim 6 as
20 well.

21 BY MR. WANG:

22 Q. Doctor, in the context of the '035 patent,
23 what is a backoff counter?

24 A. So a backoff counter is something that's
25 used for channel access. And it determines the time to

1 wait before a station would attempt to make a
2 transmission, representing an amount of time that the
3 channel has been clear before the station tries to
4 transmit.

5 Q. Well, do you see that you discuss backoff
6 counters in your discussion of the Ho reference in
7 paragraphs 85 to 86?

8 A. Yes, in paragraph 85 to 86 I talk about
9 backoff counters.

10 Q. And is that discussion of backoff counters
11 consistent with that term and concept in the '035
12 patent?

13 A. Yes, it is. '035 also talks about backoff
14 counters. I believe it's the same term. But there's a
15 backoff counter in the '035 as well.

16 Q. And it's the same concept as -- or
17 technically the same thing that you're discussing in
18 paragraphs 85 to 86?

19 MR. PHILLIPS: Objection. Form.

20 THE WITNESS: So, could you repeat the question so
21 it's clear?

22 BY MR. WANG:

23 Q. Sure. Sure.

24 I just want to be clear on the terms. We
25 discussed that in paragraphs 85 to 86 you discuss

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1 backoff counters in the context of the Ho reference;
2 correct?

3 A. Yes.

4 Q. And we also discussed that the '035 patent
5 uses that term and that phrase, backoff counters?

6 A. Yes. I think my sticking point there was
7 you're asking me about specific terminology of the
8 '035 patent, which my recollection is it does have
9 backoff counter. I don't recollect if it uses the
10 exact same precise term.

11 Q. So is that something you need to look at or
12 can we --

13 A. So to answer your question, yes. The Ho
14 reference, as described in 85 and 86, describes backoff
15 counter that would be consistent with the type of
16 backoff counter described in the '035 patent.

17 Q. Okay. What is an EDCA timer?

18 A. Can you give me the context? Because I
19 know what an EDCA is of course. And timer as well.
20 But maybe it depends on the context.

21 Q. Sure.

22 So I think you offer the opinion that
23 Cherian discloses EDCA timers. So I'm -- I'm asking
24 you in that context, if it helps.

25 If it helps, I can point you to paragraphs

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1 137 to 138, if you want to read that.

2 A. Okay. The precise term, I think you said
3 it was EDCA parameter, and called it an EDCA timer?

4 Q. Yes.

5 A. I need to correct you. It is an MU EDCA
6 timer. The MU is critical.

7 So the MU EDCA timer, if that's what your
8 question is about, that would be a timer that controls
9 the amount of time that the station is in the
10 multi-user mode. And so when the timer expires, it
11 would switch back to the single-user mode.

12 Q. Okay. So your opinion is that Cherian
13 discloses an MU EDCA timer?

14 A. Correct.

15 Q. Okay. And your opinion is that this is a
16 second parameter set timer; correct?

17 A. Yes.

18 Q. This is not a backoff counter; right?

19 A. No. That would be a -- it's a different
20 type of timer, and it's not the same thing as the
21 backoff timer that we were talking about a few minutes
22 ago.

23 Q. It's not a backoff counter or a backoff
24 timer?

25 A. No. No. It's a timer that determines

1 which mode it's in, whether that be single-user or
2 multi-user. It's not a backoff timer.

3 Q. Okay. By the way, for all of the -- you
4 don't propose any claim constructions in your
5 declaration; right?

6 A. Correct. There's no claim constructions in
7 the declaration.

8 Q. Your view is that every term should be
9 construed plain and ordinary meaning to a person of
10 ordinary skill in the art?

11 MR. PHILLIPS: Objection. Form.

12 THE WITNESS: Yes. I've interpreted the claim
13 terms according to plain and ordinary meaning to a
14 person of ordinary skill in the art.

15 BY MR. WANG:

16 Q. Do you plan to offer any supplemental or
17 additional opinions regarding claim construction?

18 A. That, I do not know. It's hard to say what
19 I may do in the future.

20 Q. Sitting here and as of today, are you -- do
21 you have any intention of doing that?

22 MR. PHILLIPS: Objection. Form.

23 THE WITNESS: Whereas we may submit some
24 supplemental filings, I do not know if it will get into
25 matters of -- can't say one way or another.

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1 BY MR. WANG:

2 Q. Okay. Do you see in paragraph 139 you talk
3 about resetting the timer?

4 A. Yes.

5 Q. Resetting the timer means that the timer's
6 already running; right?

7 A. Not necessarily.

8 Q. Why not?

9 A. Well, you just hit like a reset button;
10 right? So if there's an analogy -- some engineers use
11 the term set. Some say reset. So it may be be indeed
12 running, but the first time you reset it, it might not
13 have been running. So I don't think that the term
14 reset is really any different than set in this context.
15 It's just set or reset. It's -- it could be either.

16 Q. In Zhou, can you think of any instance
17 where the timer is not already running and then it gets
18 reset?

19 A. Yeah. I mean -- I would think the first
20 time -- the first time you do this, you would be
21 setting it. I think set and reset, I mean, from a
22 technical standpoint, I think they are used
23 interchangeably. You think of like, you know, a button
24 on a device. It's sometimes called a reset button.
25 It's irrelevant as whether the device is running or

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1 not. You just turn it on.

2 Q. Do you offer any opinion in your
3 declaration of reset and set mean the same thing?

4 A. I don't think I offer a specific opinion.
5 I didn't even think that that was all that important.
6 I just interpreted set and reset to be equivalent.

7 Q. Okay. Do you have evidence that Zhou
8 describes resetting the timer when it's not already
9 running, that the timer is not running?

10 MR. PHILLIPS: Objection. Form.

11 THE WITNESS: I don't actually think that Zhou
12 discloses that it is running, you know, one way or the
13 other. We could walk through that column. But when I
14 read that in its entirety, using my knowledge and
15 expertise in the field, I took that to be set. I
16 looked at the entire column that included that. I
17 would be happy to go through that again, but I don't
18 think we've introduced Zang as evidence.

19 BY MR. WANG:

20 Q. I'm sorry?

21 A. I'm sorry, wrong name.

22 Q. Does Cherian disclose setting a timer based
23 on the transmission of a PPDU?

24 A. I can't recall that sitting here.

25 Q. Do you have any opinions that Cherian

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1 discloses setting a timer based on the transmission of
2 a PPDU?

3 A. So sitting here looking at my report and
4 not Cherian, I don't have an opinion of when Cherian
5 sets the timer, but it has a timer.

6 Q. Does Zhou disclose setting a timer based on
7 the transmission of a PPDU?

8 A. Yes. So this is in paragraph 139, I think
9 we were looking at that. And it says, you know, after
10 the station 106 transmits a scheduled uplink
11 transmission, so that would be after the transmission
12 of an uplink PPDU.

13 MR. WANG: Let's go off the record.

14 (A recess was taken, after which the
15 proceedings were resumed as follows.)

16 BY MR. WANG:

17 Q. Everyone ready?

18 Welcome back, Dr. Valenti.

19 So we talked before the break. You said it
20 was your opinion that Zhou discloses setting a timer or
21 resetting a timer based on the transmission of a PPDU?

22 A. Yes.

23 Q. What's your basis for saying that it's
24 based on transmission of a PPDU?

25 A. So really what I mean is more specifically

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1 when the transmission of the trigger-based PPDU ends.

2 Q. Okay. So for that you're just relying on
3 when it ends. It doesn't?

4 A. Correct. That was one of the disclosures
5 in Zhou, to set the timer after the uplink
6 transmission.

7 Q. But it's not -- apart from when it's not
8 based on the uplink transmission?

9 MR. PHILLIPS: Objection. Form.

10 THE WITNESS: So I -- maybe I'm a little confused
11 about what you're referring to based on. Is there like
12 some claim language?

13 BY MR. WANG:

14 Q. I'm just using the plain meaning of that.
15 And I want to understand -- because you testified
16 earlier that your opinion that Zhou discloses setting a
17 timer based on the transmission of the PPDU.

18 A. Okay.

19 Q. Is your testimony just what you have, your
20 opinion what you have there, that about when?

21 A. Yes. So when I said based on, which I
22 think was just a response to your question, I mean,
23 more specifically, when the transmission of the
24 trigger-based PPDU ends.

25 Q. Okay. Let's turn to paragraph 140 of your

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1 declaration. You say that determining when to set the
2 timer is a design choice.

3 A. Yes.

4 Q. Does Zhou describe it as a design choice?

5 A. I believe he does. He -- there's a whole
6 column about the timer. We could look at it, if you
7 would like. But it mentions several alternatives as to
8 when to set the timer. I would assume that that means
9 it's a design choice.

10 Q. But do you recall if Zhou uses that term,
11 design choice?

12 A. Oh, without seeing the Zhou reference, I
13 can't recall whether or not he used a specific term
14 design choice.

15 Q. You say that there's a finite number of
16 options available to POSITA. Do you see that?

17 A. Yes.

18 Q. Have you attempted to quantify the finite
19 number of options?

20 A. Well, I give a few examples setting the
21 timer immediately after the transmission of a PPDU,
22 after acknowledgment of that PPDU. Those are two
23 choices. I think Zhou has a few others. One other
24 that would come to mind is immediately after receiving
25 the trigger frame.

1 Q. What do you mean available under the 802.11
2 standard in that paragraph?

3 A. Well, probably consistent with 802.11. So
4 everything is timed according to time units. The
5 acknowledgment protocol works a certain way. There's
6 only so many instances of when a station would be
7 allowed to transmit.

8 Q. Okay. So by available, you just mean
9 compatible or supportable?

10 A. I think that would be fair enough. So
11 there's only so many instances that a station could
12 transmit that would comply or comport with the 802.11
13 standard.

14 Q. Do you agree that your obviousness theory
15 involves multiple design choices?

16 A. Which obviousness theory are we talking
17 about?

18 Q. Your obviousness combination of Zhou,
19 Cherian, and Kim?

20 A. In what aspect? I don't know if I quite
21 understand.

22 Q. Okay. I'm referring to specifically your
23 opinion in paragraph 140.

24 A. Right. What is that question about now
25 that we know the context?

1 Q. Do you agree that what you're proposing
2 involves multiple design choices?

3 MR. PHILLIPS: Objection. Form.

4 THE WITNESS: Yes. I clearly state that there are
5 finite number of options. To the extent that multiple
6 and finite are synonymous, I would agree with that.

7 BY MR. WANG:

8 Q. The design choices include changing or
9 modifying Zhou; right?

10 A. I don't really think of Zhou as the design
11 choice. I mean Zhou contains designs. What I'm
12 referring to by design choice is specifically limited
13 to when to set the timer. And that's what I'm
14 referring to here.

15 Q. Does those choices include -- more possible
16 design choices include changing the Cherian timer start
17 time?

18 A. Well, to the extent that Cherian is a
19 timer, then, yes, you would have design choices,
20 especially in light of Zhou to identify multiple
21 options for when to start the timer.

22 Q. Do the design choices include changing the
23 timer to be based on an access category?

24 A. I don't know if that really makes sense in
25 the context of 140, because 140 is talking about when

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1 to set the timer. And you just -- if I heard you
2 correctly, you asked me about changing a timer based on
3 an access category, which doesn't seem to be within the
4 scope of paragraph 140. That doesn't -- I don't know,
5 to me that just doesn't really make sense.

6 Q. You describe the -- you discuss access
7 categories in subsequent paragraphs; right? Like 142,
8 143?

9 A. I don't think 142 covers -- okay.

10 Q. Or 143?

11 A. Right. Right. So my reading of the timer
12 is that the timer is for the access category. But what
13 paragraph 140 is about is when to set it. It's not
14 based on an access category. It's for an access
15 category. That's consistent with what the claim
16 language says. The claim language does not say set it
17 based on an access category. It says set it for an
18 access category.

19 Q. Turn to paragraph 145. Your opinion is
20 that Cherian describes the use of access categories;
21 right?

22 A. Correct.

23 Q. And then you have a Figure 6. This is a
24 packet; right?

25 A. Yes. Figure 6 shows some sort of packet

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1 that's in Cherian.

2 Q. This same packet has the MU EDCA timer --
3 let me rephrase that.

4 This packet shown has MU EDCA timer 2;
5 right? Right in the middle; right?

6 A. Yes. The element approximately in the
7 middle of the packet is labeled MU EDCA timer and its
8 size is 2 octets.

9 Q. How many bits is an octet?

10 A. I actually don't recall. I think an octet
11 is a byte. But now actually sitting here, I can't
12 remember. I don't know that it's important to this.

13 Q. I'm just testing you.

14 This MU EDCA timer, it's the same one that
15 you rely on that we discussed before?

16 A. Well, this is a data element that is
17 informing the station what the duration of the timer
18 is. So this is information about the timer. I mean,
19 the timer itself is literally an item or component that
20 would be running on the station itself and not
21 something that could be communicated within a packet.

22 Q. Okay. I just want to make sure that this
23 MU EDCA timer that's shown in Figure 6 is the same one
24 that you relied on before?

25 MR. PHILLIPS: Objection. Form.

1 THE WITNESS: They're related, but no. A timer is
2 a hardware component that runs for a period of time. A
3 timer is not a 2 octet length data element in a data
4 packet. So what this is showing -- and we can go into
5 Cherian. I think it does explain it. This is just
6 information about the timer. But it's not literally
7 the timer.

8 BY MR. WANG:

9 Q. So it's information for the timer, that
10 corresponds to it?

11 A. Yes. I think it would be fair enough to
12 say that MU EDCA timer in Figure 6 is information about
13 the timer that informs the station about the duration
14 of the timer.

15 Q. Does Cherian disclose individual MU EDCA
16 timers based on access category?

17 A. Without looking at it, I don't recall that
18 it does. I mean, to the best of my recollection, it
19 would be a single timer that would correspond to all
20 access categories.

21 Q. So you say in the first sentence of 146
22 applies to at least an access category. Do you see
23 that, the first sentence?

24 A. Yes.

25 Q. Which of the citations says that? That

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1 talks about your, quote, applying to access category.

2 MR. PHILLIPS: Objection. Form.

3 THE WITNESS: I think that's impossible for me to
4 answer because these are -- we haven't really
5 introduced these two references. I mean, I do have
6 them here, if you want me to look at them.

7 BY MR. WANG:

8 Q. Yeah, if you could look at the citations.

9 Doctor, sorry to interrupt you, but just to
10 clarify my question. Like in the next sentence you say
11 Cherian teaches that MU EDCA parameters are valid for
12 one or more access category. My question is that just
13 specifically in these cites what talks about -- in
14 Cherian talks about MU EDCA timer or validity duration
15 applying to access categories?

16 MR. PHILLIPS: Objection. Form.

17 THE WITNESS: Okay. So I can answer your
18 question. Since I've been reading, maybe if you want
19 to reask it kind of a clearer way to make sure I've got
20 the right question.

21 THE REPORTER: Mr. Wang, you're on mute.

22 MR. WANG: Oh, I'm sorry. Let me try to ask that
23 again.

24 BY MR. WANG:

25 Q. My question is, can you point me to the

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1 cites to support your statement that Cherian describes
2 a duration of time for which the provided MU EDCA
3 parameters are valid being applied to access categories
4 for one or more access category?

5 MR. PHILLIPS: Objection. Form.

6 THE WITNESS: Okay. Sure. I could break it down.

7 So a good starting point would be
8 paragraph 76, which is about the timer. It just says
9 the MU EDCA timer indicates the duration of time, time
10 units, for which the provided MU EDCA parameters are
11 valid. So clearly this is a timer that times the
12 MU EDCA parameters. And then of course in
13 paragraph 67, it goes on to disclose the actual
14 transmissions.

15 So paragraph 67 starts with the trigger
16 frames. So it says as shown in 400A, a trigger frame,
17 402, is transmitted by AP scheduling uplink resources
18 for stations, for simultaneous uplink transmissions.
19 One or more of the stations may be operating in a
20 default SU mode before receiving the trigger frame from
21 the AP. In response to receiving the trigger frame,
22 the station's transition to the MU mode and
23 simultaneously transmit packets on the uplink on
24 resources scheduled by the trigger frame, and then the
25 AP does not transmit another trigger frame before a

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1 predetermined timeout period expires.

2 So what it is transmitting, that is the
3 other cite, which is 49. 49 basically says that
4 quality of service may be implemented by utilizing
5 several access categories by which can help effectively
6 establish a different backoff generation procedure per
7 queue.

8 So taken together, what does it say? It
9 says you have a timer. The EDCA parameter timer, and
10 that the timer determines how long the station is in
11 the multi-user mode. And while it's in the multi-user
12 mode, it would be sending different access categories.
13 So it would apply to one or more access categories.

14 BY MR. WANG:

15 Q. Okay. So that citation that you're talking
16 about is about backoff counters; right? In
17 paragraph 49?

18 A. Right. So that -- okay. This may seem
19 defeating to you, but each -- each access category has
20 its own backoff counter. Okay? When it's in
21 multi-user mode, it uses one set of parameters. And
22 then, when it switches back to single-user mode, it
23 uses a separate set of parameters, a separate set of
24 backoff counters.

25 Q. Do you agree that backoff counters are

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1 about the time between transmissions; right?

2 A. Yes.

3 Q. And that's different than the use of a
4 parameter set?

5 A. Well, no. It's consistent. The parameter
6 set contains information about the different backoff
7 counters. That's what the EDCA parameter set is.

8 Q. Okay.

9 Doctor, are you aware that these
10 references, -Zhou, Cherian, and Kim -- were considered
11 during prosecution of the patents?

12 MR. PHILLIPS: Objection. Form.

13 THE WITNESS: To the best of my knowledge and
14 having reviewed the file history, my understanding is
15 that Cherian and Zhou were before the examiner. I am
16 not aware of Kim being before the examiner.

17 BY MR. WANG:

18 Q. Okay. But you are aware of Cherian and
19 Zhou being before the examiner?

20 A. Yes, I am.

21 Q. And does the fact that they were before the
22 examiner, before affect your opinions in this IPR?

23 A. No. It doesn't. And in particular, we're
24 not relying on Zhou and Cherian alone. You're also
25 relying on Kim.

1 Q. And have you analyzed like what the prior
2 rejections were and how they were overcome by the
3 applicant?

4 A. Yes. I did review the prosecution history,
5 as we discussed earlier. And my understanding was that
6 the way they were overcome by the applicant was to
7 include the two when clauses, which in the '035
8 declaration I've labeled as elements 1.4 and 1.5.

9 Q. And so the examiner found that the when
10 clauses, you know, would be novel and nonobvious over
11 the cited prior art that included Cherian and Zhou?

12 A. That is my understanding, that there was
13 clauses in the eyes of the attorney allowed for the
14 amended claims to be allowed.

15 Q. You said in the eyes of the attorney. You
16 mean the eyes of the examiner?

17 A. Yes. Thank you. I meant the eyes of the
18 examiner.

19 Q. Do you have an understanding of why the
20 examiner reached that conclusion from the file history?

21 MR. PHILLIPS: Objection. Form.

22 THE WITNESS: I'm not sure if the examiner really
23 elaborated why it was allowed, but just allowed it.
24 You can go back to the file history to refresh my
25 recollection of what the examiner -- what comments the

1 examiner made when the claim, amended claim, was
2 allowed.

3 BY MR. WANG:

4 Q. Okay. But I believe you testified that the
5 examiner's comments or reasons for allowance doesn't
6 affect the opinions you're offering in this IPR; is
7 that right?

8 MR. PHILLIPS: Objection. Form.

9 THE WITNESS: Yes, that is correct.

10 MR. WANG: Thank you, Doctor. I'll pass the
11 witness.

12 MR. PHILLIPS: Okay. We have no redirect.

13 MR. WANG: Thank you very much, Dr. Valenti.

14 THE WITNESS: Yeah, thank you.

15 (Deposition concluded at 5:46 p.m.)

16 * * * * *

17

18 MR. DRESSELEIN: Could you give us a rough? Just
19 send it to me, and I'll make sure it gets to John.

20 * * * * *

21

22

23

24

25

1 CERTIFICATION OF COURT REPORTER AND NOTARY PUBLIC

2

3 I, Jo Ann Betler, Registered Diplomate
4 Reporter and Notary Public within and for the State of
5 West Virginia, duly commissioned and qualified, do
6 hereby certify that the foregoing deposition was duly
7 taken by me and before me at the time and place and for
8 the purpose specified in the caption hereof, the said
9 witness having been by me first duly sworn.

10

11 I do further specify that the said
12 deposition was correctly taken by me in Stenotype and
13 that the same was reduced to computer print by me or
14 under my direct supervision.

15

16 I further certify that I am neither
17 attorney or counsel for, nor related to or employed by,
18 any of the parties to the action in which this
19 deposition is taken, and further that I am not a
20 relative or employee of any attorney or counsel
21 employed by the parties hereto, or financially
22 interested in the action.

23

24 I certify that the attached transcript
25 meets the requirements set forth within Article 27,

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1 Chapter 47 of the West Virginia Code.

2

3 Before completion of the deposition, review
4 of the transcript [] was [X] was not requested. If
5 requested, any changes made by the deponent (and
6 provided to the reporter) during the period allowed are
7 appended hereto.

8

9 Given under my hand this 8th day of
10 February, 2026.

11

12 My Commission expires June 18, 2027.

13

14

Jo Ann Betler
Jo Ann Betler

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A			
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