

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TESLA, INC, :
Petitioner, :

IPR2025-00217

v. : U.S. Patent 10,952,153
INTELLECTUAL : IPR2025-002019
U.S. Patent 9,706,500

VENTURES II, LLC, :
Patent Owner. :

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November 24, 2025

Remote Deposition of:

GARY R. LOMP, Ph.D.,
called for oral examination by counsel for the
Petitioner, pursuant to notice, before Christina S.
Hotsko, RPR, CRR, of Veritext Legal Solutions, a
Notary Public in and for the District of Columbia,
beginning at 10:06 a.m., when were present on behalf
of the respective parties:

A P P E A R A N C E S

On behalf of Petitioner:

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Also Present:

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C O N T E N T S

EXAMINATION BY:	PAGE
Counsel for Petitioner	04
Counsel for Patent Owner	54

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

2 Whereupon,

3 GARY R. LOMP, Ph.D.,

4 being first duly sworn or affirmed to testify to
5 the truth, the whole truth, and nothing but the
6 truth, was examined and testified as follows:

7 EXAMINATION BY COUNSEL FOR PETITIONER

8 BY MR. SMITH:

9 Q. All right. Good morning, Dr. Lomp. How
10 are you?

11 A. I'm fine, thank you.

12 Q. Could you please state your full name for
13 the record.

14 A. Gary Raymond Lomp.

15 Q. That would be Dr. Gary Raymond Lomp?

16 A. Yes.

17 Q. Okay. Just making sure.

18 Approximately how many times have you
19 been deposed previously?

20 A. 75.

21 Q. That's quite a few.

22 A. Yes.

1 Q. So you generally know how depositions
2 work; is that fair?

3 A. Yes.

4 Q. Okay. Do you understand that you must
5 provide verbal answers to my questions so that
6 the court reporter can make an accurate
7 transcript?

8 A. Yes.

9 Q. And so because we're forming a record
10 here, it's important that we don't talk over each
11 other. So if you could let me finish my
12 question, I'll let you finish your answers.

13 Does that sound fair?

14 A. Sounds fair.

15 Q. Okay. You understand that your counsel
16 might object to a question, but you still must
17 provide an answer to that question unless
18 otherwise instructed, correct?

19 A. Yes.

20 Q. If you're confused as to a question I
21 ask, I'd appreciate it if you'd let me know so
22 that I can perhaps ask it in a different way.

1 Can we agree on that?

2 A. Yes.

3 Q. Okay. Is there any reason you can't
4 provide full and accurate testimony today?

5 A. No.

6 Q. Okay. And you understand the testimony
7 you're providing today will be used in two
8 inter partes review proceedings; is that correct?

9 A. Yes.

10 Q. Okay. And do you understand that those
11 IPR proceedings are IPR2025-00217 challenging
12 U.S. patent number 10,952,153 and IPR2025-00219,
13 challenging U.S. patent number 9,706,500?

14 Does that sound right?

15 A. Sounds right.

16 Q. Okay. And if I say the '153 patent, will
17 you understand that to be referring to U.S.
18 patent number 10,952,153?

19 A. Yes. Of course.

20 Q. Okay. And if I say the '500 patent, will
21 you understand that to be referring to U.S.
22 patent 9,706,500?

1 A. Yes.

2 Q. Okay. And if I say "this proceeding"
3 or "this IPR" or "these proceedings" or "these
4 IPRs," will you understand that to be referring
5 to both IPR2025-00217 and IPR2025-00219?

6 A. So regardless of whether you say "this"
7 or "these," you mean both.

8 Q. That's right. Yes.

9 A. Okay. Yes, I understand.

10 Q. Okay. Do you understand that your
11 testimony you give today will be publicly
12 available if the transcript is filed in this --
13 in these proceedings, excuse me?

14 A. Yes. I guess I would assume that.

15 Q. Okay. And do you understand that if the
16 transcript is filed, any member of the public
17 will be able to download and read the transcript?

18 A. Yes.

19 Q. Okay. About how many IPRs have you
20 worked on?

21 A. Let's see. A lot. I mean, almost the
22 same amount as the depositions, but a lot of

1 those were also trials.

2 I'll say 50 to 75, just to --

3 Q. Okay.

4 A. -- be -- you know, cover the bases.

5 Q. Got you.

6 And of those IPRs, how many were you
7 working for patent owner Intellectual
8 Ventures II?

9 A. I don't know exactly, but five to ten I
10 guess sounds about right.

11 Q. And just some other deposition -- excuse
12 me, definitions for today.

13 If I use the acronym "POSITA" -- that's
14 P-O-S-I-T-A -- will you understand that to mean a
15 person of ordinary skill in the art?

16 A. Yes.

17 Q. Okay. And you submitted a separate
18 declaration in each of the two IPRs we're
19 discussing today; is that correct?

20 A. Yes, I did.

21 Q. Okay. Am I correct that those
22 declarations are numbered Exhibit 2016 in the IPR

1 to which they pertain?

2 A. I am not sure of the exhibit numbers. I
3 have them in PDF here. Let me see what --

4 Q. If you look at the bottom of the page, do
5 you see the -- bottom of page 1, do you see the
6 exhibit number?

7 A. Let me check.

8 Unfortunately, I don't see an exhibit
9 number on the copy I have.

10 Q. Okay.

11 A. Let me just check one other thing here.

12 The copy I have was the -- I guess the
13 penultimate one because it's not signed.

14 Q. It's not signed?

15 A. No. This is not the signed final, I
16 guess.

17 Q. Okay. In that case, let me go ahead and
18 introduce...

19 A. Yeah.

20 Q. We can see how this process works.

21 A. I also have the signed final someplace in
22 my myriad files, but it might be quicker to send

1 it if you have it handy.

2 Q. Right. Let's see how this works.

3 VERITEXT CONCIERGE: I just put the
4 permalink in the chat for the witness as well.

5 THE WITNESS: So I should click that
6 permalink, I guess?

7 VERITEXT CONCIERGE: Yes, please.

8 If we want to go off the record.

9 MR. SMITH: Yes. Why don't we go off the
10 record for just a second.

11 (Discussion off the record.)

12 BY MR. SMITH:

13 Q. So Dr. Lomp, you are logged into the
14 Veritext Exhibit Share now, correct?

15 A. Yes, I am.

16 Q. Do you see two exhibits in that folder?

17 A. There's a folder called marked exhibits,
18 right?

19 Q. Yes. That's the one.

20 A. I clicked on it. There's nothing in it.

21 MR. SMITH: All right. We'll go off the
22 record again. Let's see if we can get this

1 worked out.

2 (Discussion off the record.)

3 BY MR. SMITH:

4 Q. Just --

5 A. The answer to the question is, yes, I do
6 see Exhibit 16.

7 Q. Okay. The other question I was going to
8 ask is the standard question after any break is,
9 did you speak to your counsel during -- to
10 counsel or anyone else during the break?

11 A. Yes. He called me to ask if everything
12 was okay, because I was struggling to get back
13 online.

14 Q. Got you. Okay.

15 Okay. And now, do you see -- do you have
16 access to both copies of Exhibit 2016?

17 A. Yes. Yes, I do.

18 Q. And do you see that both of those are
19 marked on the bottom of the first page; is that
20 correct?

21 A. Yes.

22 Q. Okay. And what -- do those documents

1 appear to be your declarations submitted in the
2 IPR2025-00217 and IPR2025-00219 proceedings?

3 A. Yes, they are.

4 Q. Okay. And -- so when I say, "your
5 declarations," will you understand that I'm
6 referring to those Exhibits 2016 that you just
7 downloaded?

8 A. Yes.

9 Q. Okay. Who wrote your declarations?

10 A. I did.

11 Q. You wrote them entirely by yourself?

12 A. No. Of course we collaborated with
13 editorial aspects and finalization.

14 Q. Who did you collaborate with?

15 A. The attorneys at VK Law.

16 Q. Okay. Were you provided with a first
17 draft by the attorneys, or did you produce the
18 first draft yourself?

19 A. We -- you know, a few weeks ago, maybe
20 more, months -- I don't remember exactly, but
21 there was an exchange of argument, ideas. We
22 also had oral discussions at length, you know,

1 live on Teams and Zoom meetings. And that's how
2 we started the process.

3 Q. Okay. So would you say it was a
4 collaborative process?

5 A. Yes.

6 Q. Okay. How much of the declarations did
7 you write yourself?

8 A. I would -- well, including all the
9 keyboarding and editing and everything, I would
10 say it probably got to be about 50/50. I tend to
11 like counsel to have a lot of editorial control
12 where I have control over the content because
13 they're much more adept at editing than I am, I
14 think, from an hours point of view.

15 Q. Got you.

16 Who came up with the positions in your
17 declarations?

18 A. Those were collaboration conversations
19 that we had about the prior art and its relevance
20 and bearing on the patents.

21 Q. Okay. In drafting your declarations, did
22 you choose your words carefully?

1 A. Considering the number of times that we
2 re-read them, or I re-read them, I would say yes,
3 definitely.

4 Q. Do you still stand by all of the opinions
5 that you've provided in your declarations?

6 A. Yes, I do.

7 Q. Let's take a look at the Exhibit 2016 in
8 proceeding IPR2025-00217.

9 A. Okay.

10 Q. And don't worry, I'm going to shortcut
11 all of that naming.

12 A. Okay.

13 Q. Just let me know when you have it up.

14 A. Oh, I have it open.

15 Q. Okay. Can you confirm that this document
16 is your declaration filed in IPR2025-00217?

17 A. Yes.

18 Q. And could you go to the last page of the
19 document?

20 A. I have done that already.

21 Q. Okay. Is that your signature -- is that
22 the signature page?

1 A. Yes, it is.

2 Q. And is that your signature on that page?

3 A. Yes, it is.

4 Q. Okay. Is it okay if we refer to this
5 document as the '153 declaration?

6 A. Yes.

7 Q. Okay. Could you bring up the --
8 Exhibit 2016 in the other proceeding,
9 IPR2025-00219?

10 A. Yes.

11 Q. Okay. And can you -- same thing. Can
12 you go to the last page?

13 A. Yes. I have it.

14 Q. It gives your signature on this last
15 page?

16 A. It is.

17 Q. Okay. And is it okay if we refer to this
18 as the '500 declaration?

19 A. Yes.

20 Q. Okay. After you signed the declarations,
21 were any changes to either the '153 declaration
22 or the '500 declaration made by you or anyone

1 else?

2 A. I did not make any changes, and I don't
3 believe anybody else made any changes.

4 Q. Okay. Are there any typographical errors
5 that you'd like to correct in either the '153
6 declaration or the '500 declaration?

7 A. Not that I'm aware of.

8 Q. Okay. Are there any errors in your
9 analysis in either the '15e declaration or the
10 '500 declaration that you'd like to correct?

11 A. Not that I'm aware of.

12 Q. And these declarations contain only your
13 opinions, correct?

14 A. Yes.

15 Q. Okay. They don't contain the opinions of
16 other people, correct?

17 A. That is correct.

18 Q. Okay. Did you review both declarations
19 thoroughly before signing?

20 A. Yes. Of course.

21 Q. Okay. Did you review every paragraph in
22 both declarations prior to signing it?

1 A. Yes, I did.

2 Q. Did you review for inaccuracies in
3 content?

4 A. Yes.

5 Q. Did you review for inaccuracies in
6 formatting?

7 A. Yes.

8 Q. Did you review for typographical errors?

9 A. To the best of my ability to catch them,
10 yes.

11 Q. Did you review whether quotes were from
12 the correct sources?

13 A. The cites? I probably did not check
14 every single time I reviewed, to be honest. I
15 don't think they changed.

16 Q. Would you agree -- hold on just one
17 second.

18 So these two IPR proceedings are
19 challenging the -- one second -- are challenging
20 U.S. patent -- oh, no -- actually, I'm sorry I
21 already did introduce the '153 and '500 patents.

22 A. Yes.

1 Q. So were -- those terms have been defined
2 previously in your testimony, correct?

3 A. Yes.

4 Q. Okay. Would you agree that the
5 specifications of the '153 patent and the
6 '500 patent are similar?

7 A. Yes, I would.

8 Q. In fact, they're nearly identical,
9 correct?

10 A. I would say that's true. Yes.

11 Q. Because the '153 patent is a continuation
12 of the '500 patent; is that correct?

13 A. I believe that's correct. Yes.

14 Q. Would you agree that the issues across
15 both of the two IPR proceedings today are
16 similar?

17 A. They involve the same technology and
18 largely the same exact specification in the
19 underlying patent, so yes. But the claims are
20 different and, hence, the meat of the issues is
21 different in two cases.

22 Q. So would it be fair to say that any

1 testimony you provide during this deposition
2 applies to both IPR2025-00217 and IPR2025-00219?

3 A. Well, anything that I say that's specific
4 to claim language in the respective patents would
5 obviously only apply to that patent.

6 Q. Can I assume that any testimony you
7 provide today applies to both proceedings unless
8 you specify otherwise?

9 A. I'll do my best to be clear about that.
10 Yes.

11 Q. Okay. Let's -- really quick, let's take
12 a look at -- do you have the ability to put both
13 the '153 declaration and the '500 declaration
14 side by side?

15 A. Theoretically, that should be easy.

16 Let me see. It's not that easy.

17 THE WITNESS: Does anybody know a quick
18 shortcut in Adobe to do that? I don't.

19 MR. SMITH: Oh, you have got tabs, I
20 guess?

21 THE WITNESS: I have tabs. I'm going to
22 try to open it into --

1 BY MR. SMITH:

2 Q. Actually, just look at the
3 '153 declaration. We can do it that way.

4 A. Okay. Thank you.

5 Q. Go to the table of contents.

6 A. Yeah. I have it.

7 Q. And do you see the first five sections?

8 A. Yes.

9 Q. And those are -- one second.

10 Those are introduction, professional
11 background, relevant legal standards,
12 specification of the '153 patent, and other
13 concepts and terminology; is that correct?

14 A. That's correct.

15 Q. And you see that there are 30 -- based on
16 the table of contents, the last subsection in
17 section V begins on page 30?

18 A. That's correct.

19 Q. Go to paragraph 63. And let me know when
20 you're there, if you don't mind.

21 A. 63 of the '153 declaration?

22 Q. Yes.

1 A. I have it. I have that.

2 Q. Okay. Can you confirm that paragraph 63
3 is the last paragraph in section V?

4 A. Yes.

5 Q. Okay. And can you open up the
6 '500 declaration?

7 A. I have that.

8 Q. Okay. Go to the table of contents, if
9 you don't mind.

10 A. Okay.

11 Q. And the first five sections are
12 introduction, professional background, relevant
13 legal standards, specification of the '500 patent
14 and other technical concepts and terminology; is
15 that correct?

16 A. Yes.

17 Q. And those -- other than the mentioning of
18 the '500 patent, are those section titles the
19 same as the '153 declaration?

20 A. Yes, they are.

21 Q. Okay. And do you see that the last
22 subsection in section V begins on page 30?

1 A. Yes, I do.

2 Q. And that's the same as -- same page as
3 the '153 declaration, correct?

4 A. Yes, that's correct.

5 Q. Let's go to, again, paragraph 63.

6 A. Okay. I have it.

7 Q. And can you confirm that paragraph 63 is
8 the last paragraph in section V?

9 A. Yes.

10 Q. Okay. And that is the same
11 paragraph number as the last paragraph in the
12 corresponding section in the '153 declaration,
13 correct?

14 A. Yes, sir.

15 Q. So we have the same number of pages and
16 the same number of paragraphs in the -- in those
17 first five sections in both declarations,
18 correct?

19 A. That is correct.

20 Q. Okay. So is it fair to say that the
21 content in sections 1 through 5 is similar
22 between the '153 declaration and the

1 '500 declaration?

2 A. Yes, it is.

3 Q. Is it substantially identical besides the
4 mentionings of the specific patents?

5 A. I believe that's the case. Yes.

6 Q. Okay. So if I ask you questions about
7 the first five sections of the '153 declaration,
8 your answers would also apply to your testimony
9 in the '500 declaration; is that correct?

10 A. Yes.

11 Q. Okay. That should make things much
12 simpler.

13 Okay. So let's -- so, actually, I wanted
14 to ask you, do you have any other materials open
15 on your computer besides the two exhibits that I
16 have provided to you, the '153 declaration and
17 the '500 declaration?

18 A. I also have the two patents open.

19 Q. Okay. Could you go ahead and close those
20 exhibits, the two patents? And I'll provide you
21 with the marked copies through the Exhibit Share.

22 A. Okay.

1 Q. And just to make sure that we're looking
2 at the same documents, I'll go ahead and --
3 just -- any documents that I'm referring to, I'll
4 just go ahead and provide through the Exhibit
5 Share; is that all right?

6 A. Fair enough.

7 Q. Okay.

8 MR. SMITH: Let me go ahead and provide
9 those.

10 Is there a way to not have it kick me
11 out?

12 VERITEXT CONCIERGE: Did it kick you out
13 again?

14 MR. SMITH: Yeah. Can we go off the
15 record?

16 (Discussion off the record.)

17 BY MR. SMITH:

18 Q. Okay. So Dr. Lomp, you were provided
19 with a link to a file share on Box.com; is that
20 correct?

21 A. That is correct.

22 Q. And you have downloaded the '500 and the

1 '153 patent from that link; is that correct?

2 A. Yes, I have.

3 Q. Okay. Do you have any documents open on
4 your computer other than the '153 and
5 '500 declaration that you downloaded earlier or
6 the '500 and '153 patent that you just downloaded
7 from that Box share?

8 A. I do not.

9 Q. You do not?

10 A. Sorry. I do not. Yes.

11 Q. Okay. During the deposition, can you --
12 can we agree to only refer to documents that I've
13 provided you either through the Veritext Exhibit
14 Share or through the Box link?

15 A. Yes.

16 Q. Okay. Do you have any other programs
17 running on your computer besides, I guess,
18 Adobe Acrobat and Zoom?

19 A. No.

20 Q. Okay. Excellent.

21 All right. So if you need a break during
22 questioning, please let me know. I'll try to

1 break every hour. Since we've taken quite a few
2 breaks in this first section, I've basically
3 started the hour timer now. So I'll try to break
4 within an hour. If you need a break earlier,
5 just let us know. Okay?

6 A. Okay.

7 Q. All right. Can you bring up the
8 '153 declaration? I'm going to be referring to
9 that.

10 A. All right. I have it.

11 Q. Did you say you have it up? I'm sorry.

12 A. Yes.

13 Q. Okay. So what is fading?

14 A. Well, I think I gave a discussion or a
15 definition in the declaration. But just to
16 high-level paraphrase it, it's the reduction in
17 radio signal strength or intensity at a radio
18 receiver that is caused by various phenomenon on
19 propagation.

20 Q. And what are some examples of those
21 phenomena?

22 A. The signal may be blocked by terrain or

1 foliage. If the receiver is moving, that
2 blockage will change with time.

3 There's also a phenomena called
4 multi-path, which is the presence of multiple
5 routes or paths that the radio signal can
6 propagate over. And when those two paths reach
7 the receiver, they are not aligned as they would
8 be if they were one path, and the interference
9 that results can cause and often does cause
10 fading.

11 Q. And that interference can cause -- that
12 can be constructive or destructive; is that
13 correct?

14 A. That is correct.

15 Q. And what is fast fading?

16 A. It means that the fading changes as a
17 function of time rapidly, compared to, for
18 example, fading that would change, you know,
19 simply because the user is, you know, walking,
20 for example, as opposed to driving.

21 Q. And does that fast fading phenomena, can
22 it -- phenomenon, is that worse if the mobile

1 device is moving faster?

2 A. Generally speaking, the faster the
3 platforms are moving relative to one another, the
4 more rapidly the signal will vary. So the fast
5 qualification becomes more and more significant
6 as the platforms increase their speeds.

7 Q. Okay. And one of the ways that you --
8 one of the techniques used to deal with fading
9 and fast fading is transmission power control; is
10 that correct?

11 A. Yes. That is one of the techniques that
12 is used.

13 Q. And in your declaration you discuss a
14 couple different types of power control:
15 Closed-loop power control and open-loop power
16 control; is that correct?

17 A. Yes.

18 Q. And what is open-loop power control?

19 A. It has to do with the way and deviation
20 of the received signal level is calculated and
21 where it's calculated.

22 So in open-loop power control, a

1 calculation is done based on measurements that
2 estimate the received signal level. And that
3 information is transmitted back to the controlled
4 transmitter.

5 In closed-loop power control, the actual
6 signal level is measured at the base station and
7 compared with a referenced target amount. And
8 that error generates a connection.

9 So it's a difference in configuration of
10 the feedback process.

11 Q. And the '153 patent describes using -- in
12 different circumstances using only loop -- sorry,
13 only open-loop, only closed-loop, or a
14 combination of the two to determine a transmit
15 power level; is that correct?

16 A. Yes, it is.

17 Q. Okay. And when it describes using a
18 combination of open and closed-loop power
19 control, do the results of the two techniques
20 contribute equally to the determined power level?

21 A. Not necessarily.

22 Q. And how does the system determine how

1 much each of open and closed-loop power control
2 contribute to the determined transmit power
3 level?

4 A. Well, first let's refer to the teachings
5 of the patent. In the patent, methods and
6 circuits, systems, algorithms and so forth are
7 described, which allow the combination of
8 open-loop and closed-loop power control to be
9 varied. But the patent, as I recall, without
10 reading through it again right now, doesn't make
11 any recommendations about the relative amounts of
12 control that should be applied. I think that is
13 left up to the implementation.

14 So the system makes no explicit
15 estimation of the power control -- effect of the
16 closed-loop aspect and the open-loop aspect.
17 Although there is an implicit relationship
18 between them, that's not part of the algorithm,
19 as I understand it.

20 Q. So it's not limited to any particular
21 implementation effect; is that correct?

22 A. Well, the variation of some of the

1 parameters that are described in the teachings of
2 the patent will affect that combination of open
3 and closed-loop technique -- behavior. And that
4 latitude is what allows the implementation or the
5 user or the system, whatever noun you want to
6 use, to control that mix. But the patent doesn't
7 teach exactly how to control the mix, as I
8 recall.

9 Q. Would one way of controlling that mix be
10 assigning a weighting factor to each of the open
11 and closed-loop power control components?

12 A. Yes. There are weights, for example, in
13 -- in how much the open-loop measurement is
14 weighted, -I believe that was one of the
15 parameters.

16 Q. Okay. In your declaration you mention an
17 acronym TDD.

18 What does that acronym stand for?

19 A. It stands for time division duplexing.

20 Q. Okay. And what is time division
21 duplexing?

22 A. It's a term used in contradistinction

1 with frequency division duplexing. In frequency
2 division duplexing, which is a more conventional
3 and older, common technique, the two stations
4 transmit on different frequencies and,
5 correspondingly, the other stations receive on
6 different frequencies.

7 And because they're on different
8 frequencies, they can transmit and receive at the
9 same time because of the separation in radio
10 signal -- radio frequency.

11 In time division duplexing, transmission
12 and reception take place on the same radio
13 frequency. And generally speaking, the radio
14 cannot transmit and receive at the same time on
15 the same radio frequency. Although it's not
16 impossible, it's technically very difficult and
17 not done.

18 So instead, what happens in time division
19 duplexing, there's an alternation between
20 receiving and transmitting that takes place, and
21 the alternation takes place relatively rapidly --
22 well, let me put it this way: Rapidly enough

1 that it's not perceptible.

2 Q. So in time division duplexing,
3 effectively one side -- in time division
4 duplexing, only one side is transmitting at a
5 particular time, and the two sides basically swap
6 off this transmitting role, according to
7 agreed-upon time intervals; is that correct?

8 A. That is correct.

9 Q. Is time division duplexing, is that --
10 would you say that's a technique used in wireless
11 networks?

12 A. Yes.

13 Q. Okay. And it's not particular to any one
14 wireless system, right?

15 A. I think it's broadly applicable, yes.
16 But...

17 Q. You said broadly applicable; is that
18 correct?

19 A. Yes.

20 Q. Okay. So it can be used in different
21 types of wireless systems?

22 A. In general, I would say that's a true

1 statement. Yes. I guess I'll add that it
2 depends on the system. There may be some reason
3 why simultaneous transmission is required or
4 necessary for a protocol to work. So, you know,
5 you can't make a blanket statement without
6 knowing a little bit more about the systems that
7 are involved. But on a broad base, it could be
8 applied to different systems, yes.

9 Q. Okay. Let's talk about TPC command
10 accumulation. Let's look at -- actually, let's
11 look at page 43 -- I'm sorry, paragraph 43 of
12 your declaration.

13 A. I have it.

14 Q. Okay. Is it fair to say that this
15 paragraph analyzes the TPC command accumulation
16 functionality described in the '153 patent?

17 A. Let me just scan for a minute here.

18 So yes, this does refer to aspects of the
19 '153 patent power control.

20 Q. Okay. And in paragraph 43 of your
21 declaration, you describe TPC command
22 accumulation as follows: You say, "Rather than

1 adjusting the transmit power immediately and
2 independently in response to each TPC command,
3 the UE keeps a running tally of all the 'up' and
4 'down' commands."

5 Do you see that?

6 A. Yes, I do.

7 Q. Okay. So is it your opinion that, in TPC
8 command accumulation, the transmit power cannot
9 be updated each time a new TPC command is
10 received?

11 A. No, that's definitely not the case.

12 Q. What do you mean in that sentence, then,
13 when you say, Rather than adjusting the transmit
14 power immediately and independently -- actually,
15 strike that.

16 So you agree that the -- that in TPC
17 command accumulation, the transmit power can be
18 updated every time a new TPC command is received;
19 is that correct?

20 A. Yes. There's a separation here between
21 the two aspects of the process. One of them is
22 the accumulation process, which is exactly that,

1 an accumulation or a summing or integration of
2 increments. And then there is the application of
3 the result of that summation, which is the total,
4 if you will, correction that's been generated by
5 the increments.

6 And the time of the application of that
7 correction is a variable that's independent of
8 the process of accumulating itself. So you can
9 accumulate and, after each new sample is
10 accumulated, you can apply the correction
11 immediately, as the patent discloses, or you can
12 do it in intervals that are larger than the
13 accumulation clock rate, which would give a gap
14 between correct and -- corrective actions during
15 which accumulation would still take place.

16 Q. Okay. Looking at paragraph 28 of your
17 declaration.

18 A. Okay. I have that.

19 Q. And if you -- I believe it's the third
20 sentence.

21 You use the term "adjustment magnitudes."
22 Do you see that?

1 A. Third sentence of paragraph --

2 Q. 28.

3 A. I'm sorry, the --

4 Q. I'm sorry, fourth sentence.

5 A. Yeah, I don't know whether the exhibit
6 cite is a sentence, but -- okay.

7 Q. Okay. And it's the sentence that begins,
8 "The patented system" --

9 A. I have it. I see the words "adjustment
10 magnitudes."

11 Q. Okay. What is an adjustment magnitude?

12 A. Well, I can give it to you in concrete
13 terms.

14 We usually measure transmit power in a
15 radio system in a unit of -- called a decibel or,
16 more precisely, a DBM, decibel relative to a
17 milliwatt. Very, very common term in radio
18 engineering. I'm sure you know it. Right?
19 Well, I'll assume you know it for the moment.

20 So the amount that the power is adjusted
21 by is given in decibels. So when we say to
22 increase the power by 1 decibel, it means to

1 increase the power by 25 percent, for example.

2 You can also use fractions of a DB,
3 fractions of a decibel.

4 So that's what the adjustment magnitude
5 refers to.

6 Q. Is the adjustment magnitude different
7 than the values received in a TPC command?

8 A. Let's see now. That depends on the
9 context, I guess, that question. So a TPC
10 command, especially if it's a multi-level TPC
11 command, could be instructing the transmitter to
12 change by precisely an amount that is received,
13 or the TPC commands can be set into an
14 accumulator, the output of which is not equal to
15 any individual TPC command value, but it is an
16 accumulation value. And that could be playing
17 the role as the adjustment magnitude.

18 So it does depend on the configuration of
19 the system.

20 Q. Does the '153 patent discuss the concept
21 of a step amount or step size?

22 A. If you don't mind, I'll just take a quick

1 look at that. I think that's the case, but let
2 me just verify the reference here.

3 And could you just repeat the question,
4 please, so I can answer it?

5 Q. Sure. I was going to say -- or I believe
6 I said, in the '153 patent, the adjustment
7 magnitude is controlled by a step size or step
8 amount parameter; is that correct?

9 A. Let me -- the adjustment magnitude is
10 affected by the step size of the power control
11 increment, but it's not equal to it and it could
12 be coming out of the accumulator that is fed by
13 the step -- the increments.

14 So there's definitely a relationship
15 between them, or a correspondence between them,
16 but they're not the same thing.

17 And I thought you asked me something
18 about a variable step size, which I believe is
19 also contemplated at.

20 Q. So the value in each TPC command is not
21 the same as the adjustment magnitude in all
22 cases; is that correct?

1 A. That's correct.

2 Q. Okay. So what is an integrator?

3 A. In this context, it is a storage --
4 storage means, I guess, like a register.
5 Everything is digital these days, so we usually
6 talk about registers instead of analog
7 components. I will do that here.

8 So there's a register which has a number
9 in it. And when new inputs to that accumulator
10 arrive, the input number is added to the contents
11 of the register to create a new value. So the
12 new value is equal to the old value, plus the
13 increment that comes to the input.

14 That's one instance which describes an
15 integrator.

16 Q. So an integrator stores a numerical
17 value; is that correct?

18 A. When things are controlled in the digital
19 implementation numerically, yes. There are
20 analog circuits that can function as an
21 integrator wherein the integrator value is
22 voltage, for example. But of course, a voltage

1 can be described by a number, too.

2 I don't know -- you know, I don't want to
3 split hairs, but I want to make sure we're clear.

4 Q. And you said that the -- that values are
5 added to the stored value in the integrator; is
6 that correct?

7 A. Yes. The most fundamental implementation
8 of an integrator is new value equals old value
9 plus new data.

10 Q. And so after that operation -- or --
11 yeah, after that operation, the value in the
12 integrator represents a sum of the old value and
13 the new value being added; is that correct?

14 A. That is correct.

15 Q. And in the '153 patent, one example of an
16 integrator is an accumulator; is that correct?

17 A. I believe that is the term. Yes. That
18 term is in the patent, correct.

19 Q. So just to be clear, the accumulator
20 described in the '153 patent is an integrator; is
21 that right?

22 A. It's a form of an integrator, yes, as I

1 described before. And in fact, it's the form of
2 integrator that I used to explain what an
3 integrator is.

4 Q. Got you.

5 MR. SMITH: You know what? This would be
6 a good time for a break. I know we had lots of
7 breaks in the first -- you know, first hour, but
8 I'm about to, you know, get into another module
9 and think it would be -- this would be a logical
10 time for a break.

11 THE WITNESS: That works for me.

12 MR. SMITH: All right.

13 (A recess was taken.)

14 BY MR. SMITH:

15 Q. Dr. Lomp, did you speak to anybody during
16 the break?

17 A. I did not.

18 Q. All right. Could you go and download the
19 Andersson reference from the Box share? It's
20 Exhibit 10 -- or 1009.

21 A. Yeah.

22 Q. I guess we could have done that off the

1 record, but -- sorry about that.

2 A. That's okay. I already downloaded all of
3 them so it's easy.

4 It's open.

5 Q. Okay. Perfect.

6 And do you have -- just let me know when
7 you have Andersson up.

8 A. I do.

9 Q. Okay. Could you go to column 9, line 14,
10 of Andersson? Actually, it's lines 14 to 15.

11 A. Okay. I have it.

12 Q. Actually, it is line 14 to be precise.
13 Let me know when you're there.

14 A. I'm on that page now.

15 Q. Okay. So Andersson line -- Andersson
16 column 9, lines 14 to 15, refers to a dedicated
17 physical control channel (DPCCH).

18 Do you see that?

19 A. Yes.

20 Q. Okay. And if you look at figure 5 of
21 Andersson -- you may have to rotate it.

22 You see in figure 5, Andersson shows --

1 it labels the box at the top "DPCCH format."

2 Do you see that?

3 A. Yes.

4 Q. Okay. Let's turn to paragraph 60 in your
5 declaration, the '153 declaration.

6 And let me know when you're there.

7 A. Yeah. I have it.

8 Q. And looking at the last sentence in
9 paragraph 60, you say that "a POSITA reading
10 Andersson and interested in implementation
11 details for downlink TPC commands related to the
12 DPCCH would have looked to 3GPP TS 25.211 Release
13 99 and would have found the corresponding
14 downlink channel."

15 Do you see that?

16 A. Yes.

17 Q. And then that sentenced continues, that
18 corresponding download [sic] dedicated physical
19 channel (DPCH), which was used to transmit TPC
20 commands in the downlink, similar to the DPCCH in
21 the uplink.

22 Do you see that?

1 A. Yeah. You misspoke, though. You said
2 download; you meant to say downlink.

3 Yes, I do see the sentence.

4 Q. Okay. Sorry about that. It was not
5 intentional.

6 A. I understand.

7 Q. And Release -- excuse me.

8 And 3GPP TS 25.211 Release 99 is
9 Exhibit 2016; is that correct?

10 A. I don't remember, but if you say it is, I
11 will certainly agree. Or do you want me to look
12 it up?

13 THE REPORTER: Dr. Lomp, I'm having a
14 hard time hearing you.

15 MR. SMITH: Let's actually go off the
16 record because I can get you to download that
17 exhibit as well.

18 THE WITNESS: Okay.

19 (Discussion off the record.)

20 BY MR. SMITH:

21 Q. So if you look at Exhibit 2014.

22 A. Yes.

1 Q. And Exhibit 2014 is 3GPP TS 25.211
2 Release 99?

3 A. Yes, it is.

4 Q. And that's what you were referring to in
5 the sentence that we read from paragraph 60?

6 A. Yes, it is.

7 Q. Okay. So in your analysis, are you
8 replacing Andersson's disclosure of its DPCCH
9 with the disclosure of the DPCH in 3GPP TS 25.211
10 Release 99?

11 A. That was not my intention, no.

12 Q. What are you -- when you say a POSITA
13 reading Andersson and interested in
14 implementation details for downlink TPC commands
15 would have looked to 3GPP TS 25.211 Release 99,
16 what do you mean by that?

17 A. I mean that it would be natural for
18 someone designing a system to refer to the
19 standard to get guidance as to recommendations
20 and techniques that had already been deliberated
21 and standardized.

22 Q. Was 3GPP TS 25.211 Release 99 a standard

1 when Andersson was filed?

2 A. I don't know that off the top of my head.
3 I don't know the exact dates. I would imagine
4 the answer is yes because it was cited as a
5 reference here in the -- in my declaration, that
6 a POSITA would have looked at this -- presumably
7 the POSITA that would look at it is the person
8 who was inventing the new technology. But I'd
9 have to verify the dates.

10 Q. If you look at the top of Exhibit 2014.

11 A. Yes.

12 Q. Do you see that in parentheses it says
13 2002-03?

14 A. Yes.

15 Q. Does that mean that this was propagated
16 in March of 2002?

17 A. I believe so.

18 Q. So it was released after Andersson was
19 filed; is that correct?

20 A. What is the filing date?

21 That is after the filing date of
22 Andersson -- well, hold on. Which Andersson are

1 you talking about? I'm sorry. The --

2 Q. Exhibit 1009. Apologize, I forgot.

3 A. Yeah. That's okay.

4 Q. Can we agree that, when I refer to
5 Andersson, I'm referring to Exhibit 1009?

6 A. Yes. And the other one is the '153.

7 Q. Yes.

8 A. Okay. So yes. It also predates the
9 version of the standard that we were looking at a
10 second ago.

11 Q. And Andersson's filing date is April 9th,
12 1999; is that correct?

13 A. Yes.

14 Q. So did you know that the standard of --
15 the 3GPP TS 25.211 Release 99 standard was
16 published after Andersson was filed?

17 A. Yes. I saw the dates, yes. I didn't
18 remember them just now, but I did see them at the
19 time I was looking at this. Yes.

20 I think it's important to realize that
21 the standards are deliberated for many months and
22 years before they're actually released, and there

1 are many other versions that are released earlier
2 than, for example, the one that we've just looked
3 at in Exhibit 14. And so it is still the case
4 that a person involved in the design of the
5 systems would -- especially systems that are
6 going to be used in standardized communications,
7 cellular communications, would look at the
8 standards in general. Obviously couldn't look at
9 one that wasn't yet public.

10 Q. And Andersson's specification doesn't
11 mention 3GPP TS 25.211 Release 99, correct?

12 A. No, I don't believe it does. I don't see
13 any references to 3GPP in Andersson, correct.

14 Q. Okay. So just to reset, you said -- or
15 your testimony in your declaration says that a
16 POSITA reading Andersson would have looked to
17 3GPP TS 25.211 Release 99 for details on how
18 Andersson's DPCCH is implemented; is that
19 correct?

20 A. Let me read the sentence again.

21 I believe that's what I said, although it
22 may be incorrect in terms of the time at which

1 the other document was published. But still I
2 would think the point here is that the POSITA
3 would have looked at the standards and consulted
4 with the standards to get references to the
5 techniques that were being discussed as
6 standardized.

7 Q. If the techniques described in the
8 standard are different than those described in
9 Andersson, would a POSITA have used the
10 techniques from the standard instead of those
11 described in Andersson?

12 A. I think the idea was simply that the
13 technique that was used in the downlink -- let me
14 get that -- could also be used in the uplink. I
15 think that was really the point of the paragraph.

16 Q. Which --

17 A. Or the other way around: What was used
18 in the uplink could also be used in the downlink.

19 Q. That what was described -- you mean what
20 was described in Andersson can be used in the
21 uplink and downlink?

22 A. Well, yes. Because Andersson, as it

1 says -- as I said here, is contemplating TPC
2 command set in both directions. So the DPCCH was
3 existing as an uplink channel. The idea of using
4 a similar structure in the downlink would have
5 been natural and something that you would find,
6 for example, in looking at the standards.

7 Q. So you said that the idea of using a
8 similar structure in the downlink would have been
9 natural and something that you would find, for
10 example, in looking at the standards.

11 You're talking about the DPCCH described
12 in Andersson, correct?

13 A. Yes. And what I said is actually that it
14 makes sense to me because, for example, there
15 is -- for example, the Release 99, which did come
16 later, as I also note here in my paragraph, is --
17 exemplifies the fact that the community -- well,
18 POSITAs, if you will -- would naturally adopt
19 that technique for the downlink.

20 That's really the only point I was making
21 there, is that it makes sense or it would be
22 natural to do this.

1 Q. When you say "to do this," you mean to
2 use Andersson's DPCCH format as described in its
3 specification and in figure 5 in both the uplink
4 and downlink directions?

5 A. Yes. Or -- in either. Either/or.

6 Q. So in your opinion, is Andersson limited
7 only to WCDMA?

8 A. I don't think there's an explicit
9 limitation, but I believe that was the context of
10 Andersson's work, WCDMA -- UMTS/WCDMA.

11 Q. Could you go to column 7 of Andersson?
12 And looking at line 16.

13 Let me know when you're there.

14 A. Okay. I have it.

15 Q. Okay. And do you see that sentence --
16 the first sentence of that paragraph says, "A
17 mobile radio cellular communications system 10 is
18 shown in figure 1 and may be, for example, a CDMA
19 or a wideband CDMA communications system"?

20 Do you see that?

21 A. Yes.

22 Q. And wideband CDMA is WCDMA; is that

1 correct?

2 A. I believe that's correct. Yes.

3 Q. Okay. So does that sentence say that the
4 context of -- strike that.

5 Does that sentence mean that the context
6 of Andersson includes both CDMA and WCDMA?

7 A. I think that's a fair interpretation of
8 the sentence.

9 Q. All right.

10 MR. SMITH: Let's go off the record. I
11 might be done. I just want to make sure that --
12 just go over my notes and make sure that I got --
13 you know, I asked everything I needed to ask.

14 Give me five minutes.

15 MR. THEISS: Works for us.

16 (Discussion off the record.)

17 MR. SMITH: All right, Dr. Lomp. I have
18 no further questions.

19 And I will pass the witness.

20 MR. THEISS: Great. Can I just have five
21 minutes? Come back at 12:05?

22 MR. SMITH: Yes.

1 MR. THEISS: I might have one or two
2 quick questions.

3 MR. SMITH: Absolutely.

4 MR. THEISS: Okay. Off the record.

5 (Discussion off the record.)

6 EXAMINATION BY COUNSEL FOR PATENT OWNER

7 BY MR. THEISS:

8 Q. Dr. Lomp, opposing counsel asked you some
9 questions regarding the Release 99 version of the
10 standard, Exhibit 2014.

11 Do you remember that?

12 A. Yes, I do.

13 Q. Great. Specifically, counsel asked you
14 about the date of that reference. I believe you
15 said it was March 2002.

16 Do you remember that?

17 A. Based on the heading of the document,
18 yeah, I think that's what it means.

19 Q. Great. Is that before or after the
20 patent in question -- the two patents in question
21 today, the '153 and the '500 patent?

22 A. Before or after the filing date or the

1 issue --

2 Q. Exactly.

3 A. The filing date?

4 Q. Yeah.

5 A. It's after the filing date. But I
6 think --

7 Q. Of the --

8 A. -- I --

9 Q. Of the '153 patent?

10 A. Hold on a second, let me check again. I
11 may be making the same mistake twice here.

12 Oh, no. I'm way --

13 Q. Since --

14 A. I think I mixed up the patents.

15 The '153 was filed in 2019.

16 Q. Does the '153 patent claim priority to
17 any other documents, any other prior patents?

18 A. Prior publication information is dated
19 2020. I don't think so.

20 Q. Can I suggest that you look at column 1,
21 line 7? That first paragraph.

22 A. I was looking at the front page. I'm

1 looking at a long string of continuations.

2 Yes. I see that.

3 Q. What's the earliest continuation?

4 A. The earliest continuation is August 12th,
5 2004.

6 Q. Great. So the priority date of this
7 application is August 12th, 2004.

8 A. Yes. That's right.

9 Q. Which is before or after the reference we
10 were talking about with the 99 standard?

11 A. That is after.

12 Q. Okay. So why did you look to the 99
13 standard when looking at our patent today?

14 A. To find information relevant to the power
15 control problem that was being solved.

16 Q. At what time period were you looking at
17 that?

18 A. The time period during which this patent
19 was being created.

20 Q. Okay. Okay.

21 MR. THEISS: Thank you. I have no
22 further questions.

1 THE WITNESS: I'm sorry for the missteps
2 on my part on the dates.

3 MR. THEISS: That's absolutely fine.
4 It's been a long day for all of us. But I have
5 no further questions.

6 Dan, do you have any further questions?

7 MR. SMITH: Give me five minutes to --

8 MR. THEISS: No problem.

9 MR. SMITH: I don't think so, but give
10 me, like, five minutes.

11 (A recess was taken.)

12 MR. SMITH: No further questions from
13 petitioner, so I think we're done.

14 Thank you, Dr. Lomp. Appreciate your
15 time.

16 THE WITNESS: You're welcome.

17 (Whereupon, at 12:12 p.m., the remote
18 deposition of GARY R. LOMP, Ph.D., was
19 concluded.)
20
21
22

CERTIFICATE OF NOTARY PUBLIC

I, CHRISTINA S. HOTSKO, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me in stenotypy and thereafter reduced to typewriting under my direction; that said statement is a true record of the proceedings; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this statement was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.



CHRISTINA S. HOTSKO

Notary Public in and for the
District of Columbia

My commission expires:

1 January 2027

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

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