

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

APPLE INC.,	IPR2024-01362
	U.S. patent 8,381,974
Petitioner,	IPR2024-01363
	U.S. patent 9,405,947
v.	
	IPR2024-01364
	U.S. patent 8,127,984
VARIA HOLDINGS LLC,	
Patent Owner.	

DEPOSITION OF MICHAEL SHAMOS, PH.D.

August 14, 2025
10:32 a.m. Eastern Time

Reported by: Lori J. Goodin, RPR, CLR, CRR,
RSA, California CSR #13959

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1 REMOTE DEPOSITION of
2 MICHAEL SHAMOS, PH.D., in the above-titled
3 action, held on Wednesday, August 14, 2025,
4 commencing at approximately 10:32 a.m. before
5 Lori J. Goodin, RPR, CRR, RSA, California CSR
6 #13959, Registered Professional Reporter,
7 Certified Realtime Reporter, Realtime Systems,
8 Administrator, and Certified Shorthand Reporter,
9 and Notary Public of the State of Florida, State
10 of California, and District of Columbia.

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1 INDEX TO EXAMINATION

2 WITNESS: MICHAEL SHAMOS, PH.D.

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4 EXAMINATION BY

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5 MR. CHOWDHURY

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1 INDEX TO EXHIBITS
MICHAEL SHAMOS, PH.D.
2 Apple Inc. v Varia Holdings LLC
Thursday, August 14, 2025
3 Lori J. Goodin, RPR, CRR, RSA,
California CSR #13959

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5

PREVIOUSLY MARKED EXHIBITS

6	PRIOR MARKED EXHIBITS	FIRST REFERRAL
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1 THURSDAY, AUGUST 14, 2025, 10:32 a.m. EST

2 PROCEEDINGS

3 * * *

4 Whereupon,

5 MICHAEL SHAMOS, PH.D.,

6 a witness called for examination, having been
7 first duly sworn, was examined and testified as
8 follows:

9 THE REPORTER: Unless an objection
10 is heard at this time, all parties to this
11 deposition are appearing remotely and have
12 agreed to the witness being sworn in
13 remotely.

14 * * *

15 EXAMINATION

16 BY MR. CHOWDHURY:

17 Q. Good morning, sir. Could you please
18 state your full name for the record.

19 A. Michael Ian, I-A-N, Shamos,
20 S-H-A-M-O-S.

21 Q. And, where are you located today?

22 A. Pittsburgh, Pennsylvania.

1 Q. Dr. Shamos, my name is Ryan
2 Chowdhury, and I represent the petitioner in
3 three inter partes or IPR proceedings relevant to
4 today's deposition.

5 For the record, we are conducting a
6 single deposition today, to cover topics, for the
7 three IPRs.

8 Do you understand that?

9 A. Yes, I do.

10 Q. And those three IPRs have proceeding
11 numbers 2024-0132(sic), 2024-01363, and
12 2024-01364.

13 MR. JAFFESS: Object to the form.

14 THE WITNESS: You made an error in
15 reading the designation of the first one.

16 You left out the 6, I believe. It is

17 IPR 2024-01362.

18 BY MR. CHOWDHURY:

19 Q. That's right. Thank you.

20 And these IPRs are pertinent to U.S.
21 Patent numbers 8,381,974, 9,405,947 and
22 8,127,984.

1 Did I get that right?

2 A. Yes.

3 Q. So, I wanted to state for the record
4 how we are breaking up the deposition. There is
5 quite a bit of overlap between the '974, '984,
6 and '947 IPRs.

7 Dr. Shamos, is it fair to say that
8 your declaration for the '974 IPR is similar to
9 those for the '984 and '947 IPRs, except for a
10 few topics?

11 A. Yes --

12 MR. JAFFESS: Object to the form.

13 THE WITNESS: Yes, that is correct.

14 Because the, the patents are all in the same
15 family. And one is a continuation of
16 another. And another is a continuation of
17 that one.

18 So, they have the same
19 specification.

20 BY MR. CHOWDHURY:

21 Q. For simplicity for today's
22 deposition, I will refer you to your declaration

1 in the '974 IPR. Is that okay?

2 A. Yes.

3 Q. Afterwards, I may ask you to turn to
4 your declarations in the '984 and '947 IPRs.

5 Does this make sense to you?

6 A. Yes.

7 Q. Okay. And, before we get started,
8 could you please let me know what documents you
9 have brought to this remote deposition?

10 A. So, I have three folders, one for
11 each of the IPRs. They have all of the documents
12 that were filed with the Patent Trial and Appeal
13 Board.

14 Q. And these documents have no
15 annotations, markings or notes in them, correct?

16 A. That's right. I downloaded them
17 from the PTAB website. I don't have paper
18 copies. Everything is electronic.

19 Q. Great. And have you been deposed
20 previously?

21 A. Yes.

22 Q. If you could estimate, how many

1 times do you think you have sat for deposition?

2 A. So, I don't count the individual
3 depositions. I count the number of cases in
4 which I have been deposed.

5 So, if I get deposed three times in
6 the same case, that counts as one.

7 So, under that enumeration scheme,
8 this will be the 165th case in which I have been
9 deposed.

10 Q. So, given your experience, I just
11 wanted to refresh your understanding of how
12 today's deposition would be conducted so that we
13 are on a level playing field.

14 Is that okay with you?

15 A. You don't need my permission.

16 Q. So, you understand you have taken an
17 oath, yes?

18 A. Yes.

19 Q. That oath requires you to tell the
20 truth, the whole truth and nothing but the truth,
21 correct?

22 A. That's right.

1 Q. You will do that here today?

2 A. To the best of my ability.

3 Q. It is very important that we try not
4 to talk over one another.

5 So, if you give me the courtesy of
6 getting my questions out, I will extend the same
7 courtesy over to you in responding completely.

8 Can we agree on that?

9 A. Sounds very gentlemanly.

10 Q. And this is especially true in these
11 remote depositions because there is always a
12 little bit of lack of clarity when someone has
13 finished speaking.

14 So, I will try my best not to step
15 on your toes.

16 Fair?

17 A. Yes.

18 Q. And is it fair that if you don't ask
19 me to clarify a question, that you have a
20 reasonable understanding of what I am asking?

21 A. I will --

22 MR. JAFFESS: Object to the form.

1 THE WITNESS: I will think that I
2 have an understanding.

3 BY MR. CHOWDHURY:

4 Q. And since the questions and answers
5 are being typed out by the court reporter, I just
6 ask you to audibly answer every question.

7 So, a nod of the head is not
8 sufficient. We would need a yes in that
9 instance.

10 Do you understand?

11 A. Yes.

12 Q. And your attorneys, including
13 Mr. Jaffess, may pose objections to some of my
14 questions from time to time.

15 But, unless he expressly instructs
16 you not to answer, you understand that you are
17 obligated to answer, given the oath you have
18 provided. Yes?

19 A. Basically.

20 Q. I will try to also take a break
21 every hour just so that the court reporters and
22 others can get up, take bio breaks and do

1 whatever they need. And the breaks will be about
2 ten minutes.

3 If at any point you need to take a
4 break during the deposition, will you please let
5 me know?

6 A. Yes.

7 Q. And the only thing I ask is that if
8 there is a question pending, absent an
9 attorney/client assertion, that you answer the
10 question before we take a break.

11 Will you agree to that?

12 A. What did you mean by an
13 attorney/client assertion? I didn't -- I didn't
14 get that.

15 Q. An instruction from your attorney
16 not to answer a question.

17 A. Instruction, yes, okay. Could you
18 repeat the question?

19 Q. The only thing I ask is if there is
20 a question pending and absent an attorney/client
21 instruction, or an attorney instruction that you
22 answer the question before we take a break.

1 Will you agree to that?

2 A. Yes.

3 Q. Any reason that you can't provide
4 your best, most accurate testimony here today?

5 A. Not to my knowledge.

6 Q. Great. Can we please turn to
7 Exhibit 2004 in the '974 IPR, which is your
8 declaration in that proceeding.

9 (Whereupon, previously marked
10 Exhibit 2004,
11 first referral.)

12 BY MR. CHOWDHURY:

13 Q. Do you have access to that document
14 or would you like me to upload the document into
15 the chat?

16 A. Well, you don't have to do that,
17 unless the reporter needs a record.

18 I have a PDF of it that I am
19 looking, I am observing in Adobe acrobat.

20 Q. Excellent. Let's go ahead and do
21 that for the exhibits that we will refer to for
22 today's deposition.

1 A. Sorry, do what?

2 Q. I will tell you the exhibit to load
3 and you can just load that up, based on the
4 documents you have brought up.

5 A. Okay.

6 Q. Brought to this deposition. Do you
7 have the document open?

8 A. Yes. I'm sorry. I said that I had
9 it open in Acrobat.

10 Q. Great. Sorry. I must have misheard
11 you.

12 Could we turn to Page 35 of your
13 declaration? And that is the PDF page.

14 A. I am there.

15 Q. Is that your signature on this page?

16 A. I guess you and I have different
17 PDFs. For me, it is Page 35 -- oh, I'm sorry.
18 So, it is the page that has the numerals 3-5 at
19 the bottom, right?

20 Q. Correct, yes.

21 A. That is actually PDF Page 37, but it
22 is Page 35 of the document. So I'm on page --

1 document Page 35 and that is my signature.

2 Q. And you signed this declaration on
3 June 4th, 2025, correct?

4 A. Yes.

5 Q. Did you review this declaration in
6 preparing -- sorry, strike that.

7 Did you review this declaration when
8 preparing for deposition today?

9 A. Yes, I did.

10 Q. Do you have any corrections you want
11 to make to your declaration at this time?

12 A. Not at this time. It is possible
13 that during the deposition I may discover
14 something.

15 Q. Let's turn to Paragraph 34 of your
16 declaration.

17 A. I am there.

18 Q. Around the fifth line your
19 declaration states, "The specification states
20 that the inventive mobile communication device
21 contains hardware and/or software."

22 Do you see that?

1 A. Yes.

2 Q. And in the next line your
3 declaration states, "The device requires software
4 implementation of its functions."

5 Did I read that right?

6 A. Yes.

7 Q. Your opinion in this paragraph is
8 based on the specification and not the claim
9 language, correct?

10 MR. JAFFESS: Object to the form.

11 THE WITNESS: I am reading the
12 paragraph. In this paragraph, I don't make
13 specific reference to the claim language.

14 BY MR. CHOWDHURY:

15 Q. And you would agree with me that a
16 person with a bachelor's degree in electrical
17 engineering and with a background in
18 radio-frequency communications can also have
19 software training and experience, correct?

20 A. I am sorry. I would agree with you
21 that what?

22 Q. A person with a bachelor's degree in

1 electrical engineering with a background in
2 radio-frequency communications can also have
3 software training and experience, correct?

4 A. You mean that such a person would
5 have software training and experience or should
6 have software training and experience?

7 Q. I guess my question is can someone
8 with a bachelor's degree in electrical
9 engineering also have software training and
10 experience?

11 A. Oh, is it possible for such a person
12 to have that? Of course.

13 Q. Could you please turn to
14 Paragraph 37 of your declaration. And let me
15 know when you are there.

16 A. I am there.

17 Q. On the first line of Paragraph 37,
18 your declaration states -- references the claimed
19 invention.

20 Do you see that?

21 A. Yes.

22 Q. And in the next sentence your

1 declaration states, "It requires emulation of an
2 RFID signal, not a signal from an actual RFID
3 transponder."

4 Do you see that?

5 A. Yes.

6 Q. By it, you are referring to the
7 claimed invention from the first sentence?

8 A. Yes.

9 Q. And the claimed invention in this
10 sentence refers to the claims of the '974 patent?

11 A. That's right.

12 Q. Could you please turn to
13 Paragraph 39 of your declaration and let me know
14 when you are there.

15 A. I am there.

16 Q. In the first line of Paragraph 39,
17 your declaration references the fact that the
18 term "emulating" does not literally appear in any
19 independent claim.

20 Do you see that?

21 A. Yes.

22 Q. You would agree with me that

1 independent Claims 1, 8, and 12 of the '974
2 patent do not use the words "emulating,
3 emulation, or emulated," correct?

4 A. Correct.

5 Q. And you would also agree with me
6 that independent Claims 1, 8, 12 of the '974
7 patent also do not use the phrase "without use of
8 physical RFID transponder," correct?

9 A. That's correct.

10 Q. And independent Claims 1, 13, 21 and
11 32 of the '984 patent also do not use the words
12 "emulating, emulation, or emulated," correct?

13 A. That's correct.

14 Q. And you would also agree with me
15 that Claims 1, 13, 21 and 32 of the '984 patent
16 also do not use the phrase "without use of a
17 physical RFID transponder," correct?

18 A. Correct.

19 Q. And none of the claims of the '947
20 patent use the words "emulating, emulation, or
21 emulated"?

22 MR. JAFFESS: Object to the form.

1 THE WITNESS: I'm just checking
2 that. I'm sorry, can you repeat the
3 question?

4 BY MR. CHOWDHURY:

5 Q. None of the claims of the '947
6 patent use the words "emulating, emulation, or
7 emulated," right?

8 A. That's correct.

9 Q. You would also agree with me that
10 none of the claims of the '947 patent use the
11 phrase "without use of a physical RFID
12 transponder," correct?

13 A. Correct.

14 Q. Let's turn to the '974 patent
15 specification, which is Exhibit 1001 in the '974
16 IPR.

17 (Whereupon, previously marked
18 Exhibit 1001,
19 first referral.)

20 BY MR. CHOWDHURY:

21 Q. And I will just give you a moment to
22 get there.

1 A. I am there. It is a tab that is
2 open in Acrobat. I had a feeling we might look
3 at it.

4 Q. You are faster than I anticipated.
5 If you could turn to the abstract,
6 which is on Page 1.

7 A. I am there.

8 Q. In the first sentence, do you see
9 where the abstract reads, "Emulating output of
10 the data by either an active or a passive RFID
11 transponder," do you see that?

12 A. Yes.

13 Q. And a few sentences later the
14 abstract reads, "Emulation of an active RFID
15 transponder includes facilitating selection of
16 the data and instruction to output by a user."

17 Do you see that?

18 A. Yes.

19 Q. It also describes, "Emulation of a
20 passive RFID transponder includes detecting for
21 proximal presence of an RFID reader." Right?

22 A. If you read a word incorrectly, do

1 you want me to correct you?

2 Q. Sure, that would be great.

3 A. I don't think this is really
4 significant, but it says "presence of a RFID
5 reader".

6 You read it as "an RFID reader".

7 Q. My mistake. Thank you for the
8 correction.

9 A. I myself would say "an RFID reader,"
10 but I think the idea is the abbreviation is
11 intended to be expanded so it would be in the
12 presence of an -- sorry, of a radio-frequency ID
13 reader.

14 That is probably why it is "a"
15 instead of "an". I think it is awkward as it is
16 written.

17 Q. In your opinion the abstract
18 describes emulation of an RFID signal as noted in
19 Paragraph 37 of your declaration?

20 A. Yes.

21 MR. JAFFESS: Object to the form.

22 BY MR. CHOWDHURY:

1 Q. And you would agree with me that the
2 abstract does not define the term "emulation",
3 correct?

4 A. It does not give an express
5 definition, that's right.

6 MR. JAFFESS: Object to the form.

7 BY MR. CHOWDHURY:

8 Q. Could you please turn to Column 2 of
9 the '974 patent, starting at around Line 41.

10 A. I am there.

11 Q. In the second sentence the
12 specification describes, "As well understood by
13 those skilled in the art, these quantities take
14 the form of electrical, magnetic or optical
15 signals capable of being stored, transferred,
16 combined, and otherwise manipulated through
17 electrical and/or optical components of a
18 processor and its subsystems."

19 Do you see that?

20 A. It does say that.

21 Q. So, the specification states that
22 signals may be electrical, magnetic, or optical,

1 true?

2 A. It says that.

3 Q. And you would agree with me that the
4 specification uses the word "signal" in its plain
5 and ordinary sense?

6 MR. JAFFESS: Object to the form.

7 THE WITNESS: Sort of. So, I think
8 the sentence is a little strange.

9 It refers to "these quantities".

10 And so, if you go back to the
11 previous sentence to see what the quantities
12 are, they seem to be data, selection,
13 retrieval, generation.

14 I don't see how retrieval can take
15 the form of a signal. But, you know, it is
16 kind of colloquial. I think I know what the
17 point is. It is just not phrased precisely.

18 BY MR. CHOWDHURY:

19 Q. Okay. And I appreciate that
20 explanation.

21 You would agree with me, though,
22 that the specification describes magnetic,

1 electrical or optical signals?

2 A. Yes. It says that. And then I look
3 at the phrase "optical signals capable of being
4 stored".

5 Optical signals are not capable of
6 being stored. Optical signals may represent data
7 and the data is capable of being stored.

8 So, as I say, it is not a precise
9 characterization.

10 Q. In the same column, around Line 63,
11 the specification describes, "The term 'number'
12 as used in this application to describe a data
13 including both its usage in the specification and
14 the claims typically refers to numeric data."

15 Do you see that?

16 A. Yes.

17 Q. Is that statement a definition of
18 the term "number"?

19 MR. JAFFESS: Object to the form.

20 THE WITNESS: Well, it may be an
21 attempt to define it, because it says "as
22 used in this application".

1 However, at the end it says,

2 "typically refers to numeric data".

3 So, it seems to be somewhat

4 open-ended.

5 It might refer to numeric data. It

6 might not refer to numeric data.

7 BY MR. CHOWDHURY:

8 Q. You would agree with me that the

9 phrase "RFID signal" is not defined in the

10 terminology section of the specification,

11 correct?

12 MR. JAFFESS: Object to form.

13 THE WITNESS: Yes. To be clear, the

14 terminology section begins at Column 2,

15 Line 41, and extends through Column 3,

16 Line 8.

17 And, RFID does not appear in, within

18 those lines.

19 BY MR. CHOWDHURY:

20 Q. The specification as a whole does

21 not specifically define the phrase "RFID signal",

22 right?

1 MR. JAFFESS: Object to the form.

2 THE WITNESS: Well, I'm looking.

3 So, the only place in the
4 specification that the term "RFID signal" is
5 used outside of the claims is in Column 8,
6 Line 14 -- Lines 14 through 20. And it talks
7 about RFID signalling.

8 So, I wouldn't say it is
9 definitional.

10 BY MR. CHOWDHURY:

11 Q. You would agree with me that the
12 phrase "voice call signal" is not defined in the
13 terminology section of the specification, right?

14 MR. JAFFESS: Object to the form.

15 THE WITNESS: We were just looking
16 at that section.

17 And it does not appear that the word
18 "voice" appears in the lines that I read into
19 the record earlier.

20 BY MR. CHOWDHURY:

21 Q. The specification as a whole does
22 not specifically define the phrase "voice call

1 signal", right?

2 MR. JAFFESS: Object to the form.

3 THE WITNESS: I'm looking. So, at
4 Column 7, beginning at Line 14, it is a short
5 paragraph that I will read.

6 "For the embodiment, high frequency
7 signal processing 410 performs up and down
8 conversions of the transmit and receive
9 signals of the primary communication function
10 of mobile communication device 102, e.g. the
11 transmit and receive signals of a voice call.

12 "In one embodiment the transmit and
13 receive signals are transmitted and received
14 in the gigahertz ranges."

15 It is not definitional. It is
16 exemplary.

17 BY MR. CHOWDHURY:

18 Q. Could you now turn to Paragraph 38
19 of your declaration and let me know when you are
20 there.

21 A. I am there.

22 Q. In this paragraph your declaration

1 states 23 occurrences of the word "emulated" or
2 other forms of that word in the specification.

3 Do you see that?

4 A. Yes.

5 Q. The specification does not define
6 the words "emulating, emulated or emulation"
7 within these 23 occurrences, right?

8 A. I don't think it gives express
9 lexicography.

10 Q. Could you please turn to
11 Paragraph 53 of your declaration and let me know
12 when you are there.

13 A. I am there.

14 Q. In this paragraph your declaration
15 states, "A POSITA would have understood that an
16 RFID signal" -- sorry, strike that. Sorry.

17 In Paragraph 53, in the second
18 sentence your declaration states, "The term 'RFID
19 transponder data' as a radio-frequency signal
20 should be construed in a manner consistent with
21 its usage in Claim 6?"

22 Do you see that?

1 A. Yes.

2 Q. And in the last sentence you state,
3 "A POSITA reading the patent would have
4 understood that the signal in RFID transponder
5 data as a radio-frequency signal is an RFID
6 signal emulated by a mobile communications device
7 without a physical transponder."

8 Did I read that right?

9 A. Yes.

10 Q. Is your opinion that the claim term
11 "RFID signal" is to be construed to mean an RFID
12 transponder signal emulated by a mobile
13 communications device without the use of a
14 physical RFID transponder?

15 MR. JAFFESS: Object to the form.

16 THE WITNESS: I am referring to
17 Paragraph 47 or the paragraph before 48.

18 Could you please read the question
19 again?

20 BY MR. CHOWDHURY:

21 Q. In Paragraph 53 of your declaration,
22 is your opinion that the claim term "RFID signal"

1 is to be construed to mean an RFID transponder
2 signal emulated by a mobile communications
3 device, without the use of a physical RFID
4 transponder?

5 MR. JAFFESS: Object to the form.

6 THE WITNESS: I am looking for where
7 RFID signal appears on the claim. Just a
8 second.

9 So, I think we need to go to
10 specific claims for me to answer that
11 question. So, there are RFID signals that go
12 two ways.

13 So, there is a receiver, for
14 example. And the receiver is constantly
15 emitting a signal so that any passive RFID
16 that may be in its neighborhood will be able
17 to pick up, will be able to pick up those
18 signals.

19 Those signals emitted by the reader
20 are not emulated. The signals that are
21 emitted by the invention are emulated.

22 BY MR. CHOWDHURY:

1 Q. The claims use different phrases to
2 refer to RFID signals, right?

3 A. Well, the -- the phrase "RFID
4 signal" appears in the claims. But, there are
5 three other versions.

6 For example, RFID transponder signal
7 was also used. And RFID transponder data as a
8 radio frequency is used.

9 And second -- RFID as a second
10 radio-frequency signal is also used. All of
11 those are being emitted by the invention.
12 Therefore, they are emulated.

13 Q. So, just to confirm, your opinion is
14 that all of the variations of these terms that
15 you just described in your previous answer should
16 be construed the same way?

17 MR. JAFFESS: Object to the form.

18 THE WITNESS: No. In the table
19 before Paragraph 48, I list three of those
20 phrases and three constructions of those
21 phrases.

22 They are logically the same but they

1 are not identical to one another.

2 BY MR. CHOWDHURY:

3 Q. And your opinion is that each of
4 these claim phrases require some form of
5 emulation?

6 A. Yes.

7 Q. And your opinion is that that form
8 of emulation does not require use of a physical
9 RFID transponder, correct?

10 MR. JAFFESS: Object to the form.

11 THE WITNESS: Well, I think not only
12 does it not require the use of a physical
13 transponder, it doesn't permit the use of a
14 physical transponder, because if it did that
15 wouldn't be emulation.

16 BY MR. CHOWDHURY:

17 Q. Could you please turn to Figure 4 of
18 the specification which is on Page 6 of the
19 document.

20 Just let me know when you are there.

21 A. I am there.

22 Q. Figure 4 is a block diagram of a

1 transceiver, correct?

2 MR. JAFFESS: Objection.

3 THE WITNESS: Yes.

4 BY MR. CHOWDHURY:

5 Q. And the transceiver is configured to
6 transmit and receive voice call signals and RFID
7 signals?

8 MR. JAFFESS: Object to the form.

9 THE WITNESS: Yes.

10 BY MR. CHOWDHURY:

11 Q. In the middle right of Figure 4
12 there is a text that says "to/from antenna".

13 Do you see that?

14 A. Yes.

15 Q. You would agree with me that
16 Figure 4 depicts a shared antenna path for
17 transmitting and receiving voice call signals and
18 RFID signals?

19 MR. JAFFESS: Object to the form.

20 THE WITNESS: Maybe, maybe. What

21 seems to be shown there are two antennas

22 actually, because there are two arrows going

1 out of Box 420, the switch.

2 And it seems as though you can
3 switch a signal to either antenna, or I
4 suppose you could also possibly use one
5 antenna.

6 But, the diagram shows two.

7 BY MR. CHOWDHURY:

8 Q. In your opinion there is an
9 embodiment shown in Figure 4 using a single
10 antenna with a shared antenna path?

11 MR. JAFFESS: Object to the form.

12 THE WITNESS: I don't -- it is not
13 shown in Figure 4. I don't think that there
14 is anything that precludes using the same
15 antenna.

16 But this one shows two antennas. It
17 is right there in black and white.

18 BY MR. CHOWDHURY:

19 Q. So, the same antenna path could be
20 used for voice call signals and RFID signals,
21 correct?

22 A. Well, when you --

1 MR. JAFFESS: Object to the form.

2 THE WITNESS: I have to understand
3 what you mean by the antenna path.

4 So, there are lots of arrows in the
5 diagram. What do you mean by the antenna
6 path?

7 Do you mean the thing that comes out
8 to the right from Box 402?

9 Or do you mean the entire sequence
10 of everything that goes from the left to the
11 right in the diagram?

12 BY MR. CHOWDHURY:

13 Q. You testified here earlier today
14 that there is nothing that, in Figure 4, that
15 precludes using the same antenna.

16 So, my question is, are there
17 embodiments shown in Figure 4 that use the same
18 antenna for transmitting RFID signals and voice
19 call signals?

20 MR. JAFFESS: Object to the form.

21 THE WITNESS: It is not in Figure 4.
22 Figure 4 shows two antennas.

1 BY MR. CHOWDHURY:

2 Q. Let's now turn to Paragraph 43 of
3 your declaration. And let me know when you are
4 there.

5 A. I should expand on my previous
6 answer.

7 The -- it makes sense to have two
8 antennas because the voice calls and the RFID
9 signals are transmitted in different frequency
10 ranges.

11 And for better performance, you
12 would use an antenna that is tuned to those
13 particular frequencies.

14 So, that is -- I think that is the
15 reason behind showing the two arrows in Figure 4.
16 By which I mean the two arrows coming out to the
17 right from block 402.

18 Q. Thank you. I appreciate that
19 explanation.

20 Could you please turn to
21 Paragraph 43 of your declaration and just let me
22 know when you are there.

1 A. 43. I am there.

2 Q. In Paragraph 43, your declaration
3 states, "The specification contains express
4 lexicography for this term."

5 Do you see that?

6 A. Yes.

7 Q. And the term you are referring to in
8 this paragraph is "wireless mobile phone",
9 correct?

10 A. Yes.

11 Q. And your opinion is that the phrase
12 "wireless mobile phone" in the claims means a
13 class of telephony devices equipped to facilitate
14 a user in communicating with another user of
15 another communication device notwithstanding the
16 user's movement around different geographic areas
17 so long as the wireless mobile phone is in
18 contact with a base/service station of a wireless
19 network service provider?

20 A. Yes. That is what the specification
21 says. It is a definition.

22 Q. A mobile telephone is one type of

1 telephony device equipped to facilitate a user in
2 communicating with another user of another
3 device, correct?

4 MR. JAFFESS: Object to the form.

5 THE WITNESS: Yes.

6 BY MR. CHOWDHURY:

7 Q. And a mobile telephone is one type
8 of telephony device equipped to facilitate a user
9 in communicating with another user of another
10 communication device, correct?

11 MR. JAFFESS: Object to the form.

12 THE WITNESS: Please repeat the
13 question. I want to get it precisely.

14 BY MR. CHOWDHURY:

15 Q. A mobile telephone may be a device
16 configured to contact a base/service station of a
17 wireless network service provider as a mobile
18 telephone moves around different geographic
19 areas, correct?

20 MR. JAFFESS: Object to the form.

21 THE WITNESS: That sounds right,
22 yes.

1 BY MR. CHOWDHURY:

2 Q. And that is because this is what
3 makes the telephone mobile as opposed to a land
4 line telephone, correct?

5 MR. JAFFESS: Object to the form.

6 THE WITNESS: I think you stated a
7 correct fact.

8 BY MR. CHOWDHURY:

9 Q. Telephony devices equipped to
10 facilitate a user in communicating with another
11 user of another communication device were known
12 around the critical time period as having
13 Bluetooth voice communication capabilities,
14 right?

15 MR. JAFFESS: Object to the form.

16 THE WITNESS: I wasn't completely
17 ready for the question, so please repeat it
18 slowly.

19 BY MR. CHOWDHURY:

20 Q. Sure. Could you please turn to
21 Page 11 of your declaration.

22 A. I am there.

1 Q. So, near the bottom of the Page 11
2 there is a footnote in your declaration.

3 Do you see that?

4 A. Yes.

5 Q. So, you are referencing in this
6 footnote, June 13th, 2003.

7 Do you see that?

8 A. Yes.

9 Q. In your view, did you use June 13th,
10 2003, as the priority date for the '974 patent?

11 MR. JAFFESS: Object to the form.

12 THE WITNESS: No. If you read
13 Paragraph 36, it says the opposite.

14 I was using the PCT filing date of
15 June 10th, 2004.

16 BY MR. CHOWDHURY:

17 Q. In your opinion, what is the
18 priority date of the '974 patent?

19 MR. JAFFESS: Object to the form.

20 THE WITNESS: I think I express that
21 in the footnote. It should be June 13th,
22 2003, but I didn't use that date in writing

1 my declaration.

2 BY MR. CHOWDHURY:

3 Q. By June 13th, 2003, would you agree
4 with me that telephony devices equipped to
5 facilitate a user in communicating with another
6 user of another communication device were known
7 to have Bluetooth voice communication
8 capabilities?

9 MR. JAFFESS: Object to the form.

10 THE WITNESS: One, I don't know.

11 Two, I'm not sure what you mean by voice
12 communication capability.

13 Do you mean could somebody have a
14 Bluetooth headset that received signals from
15 a mobile phone? Probably. I just don't
16 happen to know.

17 BY MR. CHOWDHURY:

18 Q. By June 13th, 2003, would you agree
19 with me that telephony devices were known to be
20 capable of contacting a base/service station of a
21 wireless network service provider?

22 A. Yes.

1 Q. By June 13th, 2003, would you agree
2 with me that mobile telephones were known to be
3 capable of contacting a base/service station of a
4 wireless network service provider?

5 MR. JAFFESS: Object to the form.

6 THE WITNESS: Yes. Because I don't
7 see the difference between that question and
8 the previous question.

9 And so I answered yes to both of
10 them.

11 BY MR. CHOWDHURY:

12 Q. Let's turn to Paragraph 48 of your
13 declaration. And just let me know when you are
14 there.

15 A. I am there.

16 Q. And my apologies. I actually meant
17 to ask you to turn to Paragraph 47 of your
18 declaration.

19 A. I am there.

20 Q. In Paragraph 47, your declaration
21 states, "A POSITA would have understood that
22 voice call signals are the transmit and receive

1 signals of a voice call over a network of a
2 network -- wireless network service provider."

3 Did I read that right?

4 MR. JAFFESS: Object to the form.

5 THE WITNESS: I think you corrected
6 yourself in the middle. But, with that
7 correction, it was correct.

8 BY MR. CHOWDHURY:

9 Q. Is your opinion that the claim term
10 "voice call signal" means transmit and receive
11 signals of a voice call over a network of a
12 wireless network service provider?

13 A. Yes.

14 Q. And the specification doesn't
15 specifically define the phrase "voice call
16 signal", right?

17 MR. JAFFESS: Object to the form.

18 THE WITNESS: Not separately, no.

19 BY MR. CHOWDHURY:

20 Q. And that is because the phrase
21 "voice call signal" does not appear in the
22 specification, fair?

1 MR. JAFFESS: Object to the form.

2 THE WITNESS: It is an interesting
3 question you raise.

4 Is it possible to define the term
5 without stating the term in the
6 specification? I suppose not.

7 BY MR. CHOWDHURY:

8 Q. Is there a difference between a
9 voice call signal and a cellular voice call
10 signal?

11 A. I don't know. I haven't considered
12 that. So, typically we think of mobile phones as
13 being cellular phones.

14 I haven't even considered the idea
15 that there might be mobile phones that aren't
16 cellular phones. For example, satellite phones
17 would enable you to move around among different
18 geographical areas, but they are not cell phones.

19 But, this is the first I have given
20 any consideration.

21 Q. Is a mobile telephone a type of a
22 cell phone?

1 MR. JAFFESS: Object to the form.

2 THE WITNESS: I might turn it around
3 and say that a cell phone is a type of mobile
4 phone. Not all mobile phones are cell
5 phones.

6 The example I just gave, a satellite
7 phone. It is not a cell phone.

8 BY MR. CHOWDHURY:

9 Q. Is it fair to say that a mobile
10 telephone may be a cell phone?

11 A. Yes.

12 MR. JAFFESS: Object to the form.

13 BY MR. CHOWDHURY:

14 Q. By June 13th, 2003, would a person
15 of ordinary skill in the art understand that a
16 mobile telephone could be a cell phone?

17 A. Yes.

18 Q. If we can turn to Paragraph 71 of
19 your declaration. And just let me know when you
20 are there.

21 A. I am there.

22 Q. In the second sentence of

1 Paragraph 71, your declaration states,
2 "Therefore, Willgert's physical RFID transponder,
3 2, cannot satisfy any limitation of the
4 challenged claims."

5 Did I read that correctly?

6 A. Yes.

7 Q. Did you review the disclosure of the
8 Willgert reference in preparing your
9 declarations?

10 A. Yes.

11 Q. And based on this review, your
12 opinion is that signals output by Willgert's RFID
13 transponder do not satisfy the requirements of
14 the RFID signal or similar claim terms, correct?

15 A. That's right, because they are not
16 emulated.

17 Q. Could you please open the Willgert
18 reference, which is Exhibit 1004 of the '974 IPR,
19 and just let me know when you are there.

20 (Whereupon, previously marked
21 Exhibit 1004,
22 first referral.)

1 THE WITNESS: I am working on it. I
2 am there.

3 BY MR. CHOWDHURY:

4 Q. Could you turn to Paragraph 30 of
5 Willgert and let me know when you are there.

6 A. I am there.

7 Q. In Paragraph 30, Willgert says -- or
8 Willgert describes, "In one highly user friendly
9 application, a transponder can also be included
10 in a wireless telephone design for a Bluetooth
11 communication."

12 Do you see that?

13 A. It doesn't say that. It says
14 mobile, not wireless.

15 Q. My apologies. Let me re-ask the
16 question.

17 In Paragraph 30, Willgert describes,
18 "In one highly user friendly application a
19 transponder can be included in a mobile telephone
20 designed for Bluetooth communication."

21 Do you see that?

22 A. Sort of. You left out the word

1 "also" when reading it. How about another try,
2 just for a clean record.

3 Q. In Paragraph 30, Willgert describes,
4 "In one highly user friendly application, a
5 transponder can also be included in a wireless
6 telephone" -- sorry, strike that.

7 "In one highly user friendly
8 application, a transponder can also be included
9 in a mobile telephone designed for Bluetooth
10 communication."

11 Did I read that right?

12 A. Yes.

13 Q. And, Willgert also references a
14 mobile telephone in Paragraphs 31 and 32,
15 correct?

16 A. Yes.

17 Q. You would agree with me that the
18 primary purpose of a mobile telephone is to act
19 as a telephone, correct?

20 MR. JAFFESS: Object to the form.

21 THE WITNESS: Yes.

22 BY MR. CHOWDHURY:

1 Q. And the telephone is used to enable
2 voice calls, right?

3 A. Yes.

4 Q. And you would also agree with me
5 that voice calls are enabled by outputting and
6 receiving voice call signals, right?

7 MR. JAFFESS: Object to the form.

8 THE WITNESS: Yes.

9 BY MR. CHOWDHURY:

10 Q. A mobile telephone is one type of
11 telephony device equipped to facilitate a user in
12 communicating with another user of another
13 communication device.

14 Correct?

15 A. Yes.

16 Q. And a mobile telephone may also be a
17 device configured to contact a base/service
18 station of a wireless network service provider,
19 correct?

20 A. Yes.

21 Q. And a mobile telephone may also be a
22 device configured to contact a base/service

1 station of a wireless network service provider as
2 the mobile telephone moves around different
3 geographic areas?

4 A. Yes.

5 Q. Could you please turn to Figure 1 of
6 the Willgert reference, and that is on PDF
7 Page 2. Just let me know when you are there.

8 A. I am there. I am highly amused by
9 diagrams that have no textual characters in them
10 whatsoever but only have numerical references.

11 It is meaningless as we look at it.
12 We have to refer to the specification to try to
13 understand what is going on here.

14 Q. Figure 1 is the block diagram of the
15 communications unit described in Willgert,
16 correct?

17 MR. JAFFESS: Object to the form.

18 THE WITNESS: I suppose so. I'm
19 going to have to go to where he describes
20 what Figure 1 is.

21 It is described in Paragraph 14.

22 "Shown in Figs 1 and 2 is a communications

1 unit for identifying objects or persons."

2 So, yes.

3 BY MR. CHOWDHURY:

4 Q. And the communications unit that is
5 depicted in Figure 1 is configured to transmit
6 and receive Bluetooth signals, correct?

7 MR. JAFFESS: Object to the form.

8 THE WITNESS: Yes.

9 BY MR. CHOWDHURY:

10 Q. And the communications unit depicted
11 in Figure 1 is configured to transmit and receive
12 RFID signals, correct?

13 A. Well, not as claimed. But --
14 because it doesn't emulate them. It uses an
15 actual RFID transponder.

16 Q. So, the communications unit depicted
17 in Figure 1 is configured to transmit and receive
18 Bluetooth signals and RFID signals?

19 MR. JAFFESS: Object to the form.

20 THE WITNESS: Not RFID as claimed.

21 It does send and receive Bluetooth signals,
22 but it does not emulate the RFID signals.

1 BY MR. CHOWDHURY:

2 Q. Does the communications unit shown
3 in Figure 1 output RFID signals?

4 A. Not --

5 MR. JAFFESS: Object to the form.

6 THE WITNESS: Not RFID signals as
7 claimed in the patent. They are not
8 emulated.

9 BY MR. CHOWDHURY:

10 Q. Do you see reference numeral 5 in
11 Figure 1 near the top?

12 A. Just a second. I've got to get back
13 to it. Reference numeral 5, yes. I see that.

14 Q. And that is an antenna 5, correct?

15 A. Yes.

16 Q. You would agree with me that
17 Figure 1 of Willgert depicts antenna 5 as
18 providing an antenna path for transmitting and
19 receiving voice call -- Bluetooth signals,
20 correct?

21 MR. JAFFESS: Object to the form.

22 THE WITNESS: Yeah, I'm not so happy

1 about the word "path". I see an antenna.

2 And yes, indeed, there is a wire coming out
3 of the antenna going into block 8.

4 But, I don't know what you actually
5 mean by the antenna path.

6 Does it include radio signals? Or
7 does it only include the copper wire signals?

8 BY MR. CHOWDHURY:

9 Q. Antenna 5 is used to transmit
10 Bluetooth signals, correct?

11 A. Yes.

12 Q. Antenna 5 is used to transmit RFID
13 signals, right?

14 MR. JAFFESS: Object to the form.

15 THE WITNESS: Not RFID signals as
16 claimed because they are not emulated
17 signals. They are coming from a transponder.

18 BY MR. CHOWDHURY:

19 Q. Antenna 5 is used to transmit both
20 Bluetooth signals and RFID signals, correct?

21 MR. JAFFESS: Object to the form.

22 THE WITNESS: Not RFID signals as

1 claimed, as I have explained many times. And
2 I will do so every time you ask the question
3 that way.

4 BY MR. CHOWDHURY:

5 Q. And I appreciate that. My question
6 wasn't about emulated RFID signals. I am
7 referring to RFID signals, whether or not they
8 are emulated.

9 Based on that understanding,
10 antenna 5 is used to output RFID signals,
11 correct?

12 MR. JAFFESS: Object to the form.

13 THE WITNESS: Not RFID signals as
14 claimed.

15 BY MR. CHOWDHURY:

16 Q. By June 13th, 2003, would a person
17 of ordinary skill in the art understand that
18 there are RFID signals that are not emulated?

19 A. Not RFID signals as claimed. I'm
20 not giving you the sound bite, okay?

21 You want me to say that RFID signals
22 do not have to be emulated. I'm not going to say

1 that, because RFID signals is a term that is used
2 in the patents that are at issue in these cases.

3 Q. I'm just trying to understand how a
4 person of ordinary skill in the art would have
5 understood the term "RFID signal".

6 And my question is: Were there
7 examples of RFID signals that were not emulated
8 as you say are described in the specification?

9 A. Okay, let's --

10 MR. JAFFESS: Object to the form.

11 THE WITNESS: I'm willing to put it
12 this way.

13 That, outside the context of the
14 patents at issue in these IPRs, one of
15 ordinary skill would have thought that an
16 RFID transponder was emitting an RFID signal
17 and was receiving an RFID signal.

18 That is not true within the context
19 of the patents that are at issue.

20 BY MR. CHOWDHURY:

21 Q. Is the communications unit depicted
22 in Figure 1 of Willgert an example of an RFID

1 transponder?

2 MR. JAFFESS: Object to the form.

3 THE WITNESS: Well, a communications
4 unit contains a transponder.

5 I wouldn't say that the whole thing
6 is a transponder. But, I haven't thought
7 about it.

8 BY MR. CHOWDHURY:

9 Q. So, the communications unit is
10 configured to transmit RFID signals, correct?

11 MR. JAFFESS: Object to the form.

12 THE WITNESS: Not as claimed. So,
13 Paragraph 14 says, "The communications unit
14 also includes a transponder 2 in accordance
15 with a so-called RFID system."

16 So, the transponder is identified as
17 block 2 in Figure 1.

18 It does not emit RFID signals as
19 claimed because they are not emulated.

20 BY MR. CHOWDHURY:

21 Q. In Paragraph 16 of Willgert, do you
22 see the sentence that says, "The invention

1 relates to a communications system for
2 communication with both an RFID system and a
3 Bluetooth system"?

4 Do you see that?

5 A. Yes.

6 Q. How does transponder 2 enable
7 communications with an RFID system?

8 MR. JAFFESS: Object to the form.

9 THE WITNESS: Because transponder 2
10 emits what outside the context of the patents
11 would be referred to as an RFID signal. And
12 that ultimately gets to antenna 5 and it is
13 transmitted.

14 MR. CHOWDHURY: Dr. Shamos, we have
15 been going for about an hour. Would now be a
16 good time to take a ten-minute break?

17 THE WITNESS: Sure.

18 MR. CHOWDHURY: Let's go off the
19 record.

20 (Recess taken -- 11:33 a.m.)

21 (After recess -- 11:44 a.m.)

22 BY MR. CHOWDHURY:

1 Q. Dr. Shamos, could you turn to
2 Paragraph 86 of your declaration. Just let me
3 know when you are there.

4 A. I am there.

5 Q. In the second sentence of
6 Paragraph 86, your declaration states, "Holloway
7 discloses RFID communication, but all RFID
8 transmission and reception is by means of RFID
9 chips, i.e. physical transponders."

10 Did I read that correctly?

11 A. Yes.

12 Q. And did you review the disclosure of
13 the Holloway reference in preparing your
14 declarations?

15 A. Yes.

16 Q. And based on this review, your
17 opinion is that signals output by Holloway's RFID
18 chips do not satisfy the requirements of the RFID
19 signals as claimed for similar claim elements,
20 correct?

21 MR. JAFFESS: Object to the form.

22 THE WITNESS: That's right because

1 of no emulation.

2 BY MR. CHOWDHURY:

3 Q. Let's turn to the Holloway
4 reference, which is Exhibit 1006 in the '974 IPR,
5 and please let me know when you have that up.

6 (Whereupon, previously marked
7 Exhibit 1006,
8 first referral.)

9 THE WITNESS: I am there.

10 BY MR. CHOWDHURY:

11 Q. Could you please turn to the
12 abstract, which is on Page 1 of the PDF document,
13 and let me know when you are there.

14 There at the bottom of the page.

15 A. Oh, yes. It looked like a footnote.
16 Yes, I am there.

17 Q. In this paragraph Holloway describes
18 that -- it describes the following.

19 "Also connected to processor 11 is
20 an RFID radio frequency identity chip 16."

21 Do you see that?

22 MR. JAFFESS: Object to the form.

1 THE WITNESS: Wait a second. Where
2 are you reading?

3 BY MR. CHOWDHURY:

4 Q. I am sorry. I might have gotten my
5 text mixed up.

6 Near the, near about the fifth line.

7 A. The fifth line of what?

8 Q. The fifth line of the abstract in
9 Holloway.

10 A. Yes.

11 Q. In this line, Holloway's abstract
12 states, "The telephone also includes a short
13 range communication means (16, 17) for
14 undertaking RFID smart card transactions."

15 Do you see that?

16 A. Yes.

17 Q. And the following sentence says, "A
18 user can load data representing money by means of
19 a telephone communication into a memory 16 for
20 use" in -- for uses --

21 Should be "in subsequent
22 transactions".

1 Do you see that?

2 A. I see that. And I agree with your
3 correction.

4 Q. Would you agree with me that
5 Holloway describes integrating an RFID chip into
6 a mobile telephone?

7 MR. JAFFESS: Object to the form.

8 THE WITNESS: Yes.

9 BY MR. CHOWDHURY:

10 Q. And incorporation of the RFID chip
11 into the mobile telephone allows the mobile
12 telephone to have the functionality of RFID smart
13 cards, correct?

14 A. Yes.

15 Q. And you would also agree with me
16 that incorporation of the RFID chip into the
17 mobile telephone allows the mobile phone to
18 function as a RFID smart card, right?

19 A. Yes.

20 MR. JAFFESS: Object to the form.

21 THE WITNESS: Well, it not only
22 allows it, it is, essentially. It becomes an

1 RFID smart card by including the RFID smart
2 card chip.

3 BY MR. CHOWDHURY:

4 Q. You would agree with me that the
5 mobile telephone described in Holloway is
6 configured to communicate with an RFID reader,
7 correct?

8 A. Yes.

9 Q. And you would also agree with me
10 that when the RFID reader receives a signal
11 output by the mobile telephone, the reader
12 receives the signal as being output by an RFID
13 smart card?

14 MR. JAFFESS: Object to the form.

15 THE WITNESS: Yes. Please repeat
16 the question.

17 BY MR. CHOWDHURY:

18 Q. You would also agree with me that
19 when the RFID reader receives a signal output by
20 the mobile telephone, the reader receives the
21 signal as being output by an RFID smart card,
22 correct?

1 MR. JAFFESS: Object to the form.

2 THE WITNESS: Yes.

3 BY MR. CHOWDHURY:

4 Q. Could you please turn to
5 Paragraph 55 of your declaration. And let me
6 know when you are there.

7 A. I am there.

8 Q. Paragraphs 55 to 82 of your
9 declaration provide your opinions regarding the
10 combination of Willgert and Mooney as applied in
11 Ground 1a of the petition, correct?

12 MR. JAFFESS: Object to the form.

13 THE WITNESS: Yes. I'm not saying
14 there aren't opinions elsewhere, but
15 Paragraphs 55 to 82 certainly contain what
16 you said.

17 BY MR. CHOWDHURY:

18 Q. You would agree with me that you
19 offer no opinion within Paragraphs 55 to 82
20 addressing how the teachings of Willgert and
21 Mooney would be understood under the plain and
22 ordinary meaning of RFID signal, correct?

1 MR. JAFFESS: Object to the form.

2 THE WITNESS: I don't agree with
3 that. The plain and ordinary meaning is the
4 plain and ordinary meaning in the context of
5 the patent.

6 I think the plain and ordinary
7 meaning in the patent is that it is an
8 emulated signal.

9 BY MR. CHOWDHURY:

10 Q. Just to confirm, your opinion is
11 that the plain and ordinary meaning of RFID
12 signal requires emulation of the RFID signal?

13 MR. JAFFESS: Object to the form.

14 THE WITNESS: RFID signal as used in
15 the subject patents, yes.

16 BY MR. CHOWDHURY:

17 Q. In your opinion, the plain and
18 ordinary meaning of RFID signal cannot use a
19 physical RFID transponder?

20 A. Not in the context of the subject
21 patents.

22 Q. You also offer no opinion in

1 Paragraphs 55 to 82 addressing how the teachings
2 of Willgert and Mooney would be understood under
3 the plain and ordinary meaning of voice call
4 signal, correct?

5 MR. JAFFESS: Object to the form.

6 THE WITNESS: I don't agree with
7 that. The plain and ordinary meaning of
8 voice call signal as used in the subject
9 patents.

10 We are not talking about outside the
11 context of the patents.

12 BY MR. CHOWDHURY:

13 Q. Do you offer any opinions within
14 Paragraphs 55 to Paragraph 82 addressing the
15 interpretation of voice call signal outside the
16 context of the subject patents?

17 A. No. There would be no point to
18 that, because we are talking about the subject
19 patents.

20 Q. Do you offer any opinions within
21 Paragraphs 55 to 82 addressing the interpretation
22 of RFID signal outside the context of the subject

1 patents?

2 A. No. There would be no point,
3 because we are talking about the subject patents.

4 Q. Could you turn to Paragraph 83 of
5 your declaration. And just let me know when you
6 are there.

7 A. I am there.

8 Q. Paragraphs 83 to 85 of your
9 declaration provide your opinions regarding the
10 Willgert reference as applied in Ground 1b of the
11 petition, correct?

12 A. Well, I would --

13 MR. JAFFESS: Object to the form.

14 THE WITNESS: I would probably
15 include Paragraph 86 also.

16 BY MR. CHOWDHURY:

17 Q. Paragraphs 83 to 86 of your
18 declaration provide your opinions regarding the
19 Willgert reference as applied in Ground 1b of the
20 petition, correct?

21 MR. JAFFESS: Object to the form.

22 THE WITNESS: Sorry. Ground 1b is

1 discussed in Paragraphs 83 and 84. 85 is the
2 beginning of Ground 2.

3 BY MR. CHOWDHURY:

4 Q. Paragraphs 83 and 84 of your
5 declaration provide your opinions regarding the
6 Willgert reference as applied in Ground 1b of the
7 petition, correct?

8 A. Yes.

9 Q. And you would agree with me that you
10 offer no opinion in Paragraphs 83 and 84
11 addressing how the teachings of Willgert would be
12 understood under the plain and ordinary meaning
13 of RFID signal?

14 MR. JAFFESS: Object to the form.

15 THE WITNESS: I don't agree with
16 that. It is the plain and ordinary meaning
17 in the context of the subject patents.

18 Terms have different meaning
19 depending on the context in which they are
20 used.

21 BY MR. CHOWDHURY:

22 Q. Do you offer any opinions within

1 Paragraphs 83 and 84 addressing the
2 interpretation of RFID signal outside the context
3 of the subject patents?

4 A. I don't think so. I don't see why I
5 would need to.

6 Q. Do you offer any opinions within
7 Paragraphs 83 and 84 addressing the
8 interpretation of voice call signal outside the
9 context of the subject patents?

10 A. No. I don't see why I would need
11 to.

12 Q. Could you please turn to
13 Paragraph 85 of your declaration. Let me know
14 when you are there.

15 A. I am there.

16 Q. Paragraphs 85 through 98 of your
17 declaration provide opinions regarding Willgert,
18 Mooney, Holloway and Pitroda as applied in
19 Ground 2 of the petition, correct?

20 A. Yes.

21 Q. You would agree with me that you
22 offer no opinion in Paragraphs 85 to 98

1 addressing how the teachings of Willgert, Mooney,
2 Holloway and Pitroda would be understood under
3 the plain and ordinary meaning of RFID signal?

4 MR. JAFFESS: Object to the form.

5 THE WITNESS: I don't agree with
6 that.

7 As I have said many times already,
8 plain and ordinary meaning of RFID signal is
9 explained in my declaration within the
10 context of the subject patents.

11 BY MR. CHOWDHURY:

12 Q. You would agree with me that you
13 offer no opinion in Paragraphs 85 to 98
14 addressing -- sorry, strike that.

15 Do you offer any opinions within
16 Paragraphs 85 to 98 addressing the interpretation
17 of RFID signal outside the context of the subject
18 patents?

19 A. No. And I don't see why I would
20 have to, because we are talking about the subject
21 patents.

22 Q. Do you offer any opinions within

1 Paragraphs 85 to 98 addressing the interpretation
2 of voice call signal outside the context of the
3 subject patents?

4 A. No. Same answer.

5 MR. CHOWDHURY: I think I am --
6 could we go off the record?

7 MR. JAFFESS: Sure.

8 (Recess taken -- 11:59 a.m.)

9 (After recess -- 12:15 p.m.)

10 MR. CHOWDHURY: I have no further
11 questions.

12 THE WITNESS: Okay. Ari, how many
13 hours do you have? I think you are muted.

14 MR. JAFFESS: Excuse me. Can I just
15 have like literally two minutes, please?

16 Can we go off the record, just two
17 minutes.

18 THE WITNESS: Sure.

19 (Recess taken -- 12:15 p.m.)

20 (After recess - 12:16 p.m.)

21 MR. JAFFESS: No questions at this
22 time.

1 THE WITNESS: Okay, I would like to
2 read and sign.

3 (Whereupon, signature not having been waived,
4 the deposition suspended at 12:16 p.m.)

5 * * *

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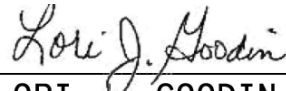
21

22

1 CERTIFICATE OF NOTARY

* * * * *

2 I, LORI J. GOODIN, RPR, CRR, RSA,
3 CA CSR # 13959 the Notary for this proceeding, do
4 hereby certify that the witness whose testimony
5 appears in the foregoing proceeding was sworn by
6 me; that I am neither counsel for, related to,
7 nor employed by any of the parties to the action
8 in which this deposition was taken; and, further,
9 that I am not a relative or employee of any
10 attorney or counsel employed by the parties
11 hereto, or financially or otherwise interested
12 in the outcome of this action.



11 LORI J. GOODIN, RPR, CLR, CRR
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13 CA CSR# 13959

14 Notary Public in and for:

15 STATE OF FLORIDA, COUNTY OF SARASOTA

16 Notary Commission Number: GG987804

17 My Commission expires: May 12, 2028

18 STATE OF CALIFORNIA, CA CSR# 13959

19 My Commission expires: February 22, 2026

20

21 DISTRICT OF COLUMBIA, WASHINGTON DC

22 My Commission expires: June 1, 2026

1 Michael Shamos, Ph.D., c/o
2 LISTON ABRAMSON LLP
3 405 Lexington Avenue, 46th Floor
4 New York, New York 10174
5

6 Case: Apple Inc. v. Varia Holdings LLC
7 Date of deposition: August 14, 2025
8 Deponent: Michael Shamos, Ph.D.
9

10 Please be advised that the transcript in the above
11 referenced matter is now complete and ready for
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12 The deponent may come to this office to sign the
transcript,
13 a copy may be purchased for the witness to review and
sign,
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signing. Please advise us of the option selected.
15 Please forward the errata sheet and the original signed
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8 Witness Name: Michael Shamos, Ph.D.

9 Deposition Date: August 14, 2025

10

I do hereby acknowledge that I have read
11 and examined the foregoing pages
of the transcript of my deposition and that:

12

(Check appropriate box):

13

() The same is a true, correct and
complete transcription of the answers given by
14 me to the questions therein recorded.

() Except for the changes noted in the
15 attached Errata Sheet, the same is a true,
correct and complete transcription of the
16 answers given by me to the questions therein
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7

8 Case: Apple Inc. v. Varia Holdings LLC

9 Witness Name: Michael Shamos, Ph.D.

10 Deposition Date: August 14, 2025

11 Page No. Line No. Change

12

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17

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19

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21

22

Signature

Date

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