1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3
4 APPLE INC.,
Petitioner,
5
v.
6
VARIA HOLDINGS LLC,
7 Patent Owner.
8
IPR2024-01362
9 Patent 8,381,974 B2
10 IPR2024-01363
Patent 9,405,947 B2
11
IPR2024-01364
12 Patent 8,127,984 B2
13
14
15
16 REMOTE DEPOSITION UNDER ORAL EXAMINATION OF
17 DR. ZHI DING
18 DATE: May, 22, 2025
19
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22
23
24 REPORTED BY: CHARLENE FRIEDMAN, CCR, RPR, CRR
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8 TRANSCRIPT of the deposition of the
9 DR. ZHI DING, called for Oral Examination in the
10 above-captioned matter, said deposition being taken by
11 and before CHARLENE FRIEDMAN, a Notary Public and
12 Certified Court Reporter, a Registered Professional
13 Reporter, and a Certified Realtime Reporter, via video
14 teleconference, by Zoom, on May 22, 2025, commencing at
15 approximately 12:00 p.m., Eastern Standard Time.
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1 A P P E A R A N C E S:

2

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1 I N D E X

2 WITNESS NAME PAGE

3 DR. ZHI DING

4 By Mr. Jaffess 7

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10 E X H I B I T S

11 EXHIBIT NO. DESCRIPTION PAGE

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13 (None marked.)

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2 Deposition Support Index

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5 Direction to witness not to answer

6 Page Line

7 None

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9 Request for production of documents

10 Page Line

11 None

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13 Questions marked

14 Page Line

15 None

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1 CERTIFIED SHORTHAND REPORTER: My
2 name is Charlene Friedman, a Certified
3 Shorthand Reporter and Notary Public of the
4 State of New Jersey. This deposition is
5 being held via video teleconference
6 equipment.
7 The witness and reporter are not in
8 the same room. The witness will be sworn in
9 remotely, pursuant to agreement of all
10 parties. The parties stipulate that the
11 testimony is being given as if the witness
12 was sworn in person.
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1 D R. Z H I D I N G,
2 called as a witness, having been first duly
3 sworn according to law, testifies as follows:
4
5 EXAMINATION BY MR. JAFFESS:
6 Q Good morning, Dr. Ding.
7 A Good morning, Mr. Jaffess.
8 Q As I introduced off the record
9 before, Ari Jaffess from Liston Abramson.
10 With me is Natalie Lieber from Schulte Roth
11 Zabel. We represent the patent holder in
12 these three matters.
13 Today we're going to do a combined
14 deposition in the three IPRs. They're
15 captioned IPR 20241362, 1363 and 1364.
16 Do you understand that?
17 A Yes.
18 Q Okay. I just want to do some brief
19 background.
20 You've submitted declarations in a
21 number of IPRs, correct?
22 A Yes, I did.
23 Q How many declarations in various
24 IPRs do you think you've submitted over the
25 years?

1 A I can only estimate. So I forgot
2 the exact number, but approximately, give and
3 take, 50 or so.
4 Q And how many times have you been
5 deposed in the context of IPRs?
6 A I think it's around 25ish.
7 Q And have you testified in any
8 litigations apart from IPRs?
9 A Yes, I have.
10 Q Approximately, how many?
11 A In the U.S. District Court, twice.
12 In the International Foreign
13 Jurisdiction, approximately six, seven times.
14 And there's also some arbitration
15 court where I testified as a witness as well
16 and sometimes in those circumstances.
17 Q So I don't think we need to go
18 over, you know, all the rules of a
19 deposition, the ground rules.
20 I will ask that we make sure to
21 leave time for your counsel to object after I
22 ask a question.
23 And I will also ask that, you know,
24 all responses should be verbal, please, so
25 that the court reporter can take them down.

1 A Yes, yes.
2 Q If you are ever -- if you need
3 clarity on a question, you don't understand a
4 question, please just ask. I'll be happy to
5 restate and reform the question so that it
6 makes more sense, okay?
7 A (Nodding.)
8 Q Is there any reason why you can't
9 give your best testimony today?
10 A No.
11 Q No medications or anything that
12 could affect your memory or judgment?
13 A No, no medications. Nothing like
14 that.
15 Q Okay. We're doing this deposition
16 remotely.
17 I understand from discussion off
18 the record, there's some irrelevant materials
19 in the room with you.
20 Do you have any case materials in
21 the room with you or accessible to you?
22 A Yes. I have here a stack of paper.
23 They are all clean and unmarked copies of my
24 three declarations. In case I need to go to
25 the hard copy, it will be a little bit

1 easier. So that's the first stack. There's
2 three of them.
3 And there are also the three
4 patents in question, also clean and unmarked
5 copies. They may look a little bit used, but
6 I made sure that there's no marks on them.
7 And I also have in my -- as a hard
8 copy, I have several exhibits. I'll just
9 refer to the exhibit by the patent's
10 inventor.
11 They are the Willgert, that's 1 --
12 I'm sorry, 1004, Exhibit 1004 for all three
13 IPRs. And Mooney, that's 1005. That's also
14 the same exhibit for all three cases.
15 And then there's the PTC
16 application by Holloway, 1006. And then
17 Pitroda, that's 1007.
18 So these are the prior art that I
19 relied on mainly in my declaration to
20 challenge the claims of the three patents.
21 And these are the three -- only three case
22 materials. So these are the only case
23 materials that I have for the three cases
24 where that's in question today and no other
25 materials.

1 Q All of these are unmarked, correct?
2 A All of those are unmarked.
3 I'll be happy to ship it to you, if
4 necessary.
5 Q I don't think that will be
6 necessary.
7 A Also, I do have my computer open.
8 So right now, we're on a computer. So I have
9 a separate screen here, so you see my eyes
10 may be wandering a little bit.
11 The desktop is blank, not opening
12 any other files. And I made sure all the
13 apps are killed.
14 I do have -- kept open my Acrobat
15 in case that when you send a message or when
16 the court reporter sends exhibits through
17 Zoom, I can open it with relative ease.
18 That's all regarding the case
19 materials that I have access in front of me.
20 Thank you.
21 Q You have Zoom open and Acrobat
22 open, correct?
23 A I have Zoom open and Acrobat open.
24 Q You don't have any messaging
25 applications or e-mail applications opened,

1 correct?
2 A I have -- of course, the computer
3 does have an e-mail function, but I killed
4 the -- basically it's closed. I closed it.
5 I think I can look at all the apps
6 here and the only one that's right now open
7 is the Zoom. And I should also just
8 doublecheck the printer and the calendar.
9 Q The calendar, is there a way for
10 you to close that?
11 I don't know if there's any notes
12 associated with that.
13 A I can kill that.
14 That was my calendar so that I can
15 open the Zoom.
16 Q Well, I'm glad you have that.
17 Are you on an Apple computer at the
18 moment or are you on a PC?
19 A Yes, yes, Counsel. I'm using an
20 Apple. And there's also a small bit of notes
21 here that I've written down reminding me that
22 I have to -- I need to tell you, before we
23 start the questioning, that there's some
24 corrections to the -- of typos through my
25 declaration.

1 Q Okay. We'll go through that
2 shortly.
3 A Okay.
4 Q I just want to finish up this line.
5 I will ask that during the
6 deposition, do not open any chat or e-mail
7 applications.
8 At breaks you can, but not to
9 discuss the content of the case, please. The
10 PTAB is more particular about that than some
11 courts. Also, during breaks, you're not to
12 discuss with counsel otherwise the content of
13 the case.
14 We're here to talk about the three
15 cases, obviously.
16 A Of course.
17 In full disclosure, I also have my
18 cell phone in a different room so that maybe
19 won't interrupt us nor will it send any
20 message to me.
21 And my Bluetooth is turned off. No
22 pun intended. And so my watch is not
23 connected to that phone.
24 Q Great.
25 Where are you located today, Dr.

1 Ding?
2 A I'm in Davis, California.
3 Q You're at your home office?
4 A That's correct.
5 Before we started, I'm in a
6 temporary office space because we're doing
7 some remodeling. So it's a little bit
8 cramped, but this is my temporary work office
9 area.
10 Q In the IPRs for which you've
11 submitted declarations, generally, you said
12 approximately 50, how many have been on
13 behalf of patent owners?
14 A I think 90 some percent are on
15 behalf of patent owners. There might be one
16 or two situations, I don't recall, that I was
17 contacted by -- sorry, by the petitioners.
18 So maybe one or two cases that was
19 by the patent owner, I was contacted by the
20 patent owner, but yeah, the vast majority of
21 these IPR declarations were on behalf of the
22 petitioners.
23 Q The litigations that you mentioned
24 outside of IPRs, you represented the
25 defendants accused of infringement.

1 Is that correct?
2 A Yes. In the District Court, there
3 are two testimonies that I had in District
4 Court.
5 One was on behalf of a defendant,
6 and the other case wasn't necessarily an
7 infringement case, but it was a Frand,
8 F-R-A-N-D, case. And I was, you know -- so I
9 would not characterize that as -- you know,
10 as a defense versus accuser. But yes.
11 So in general -- in general I get
12 retained more by the defendant than the
13 plaintiff.
14 Q Okay. And not just a little bit
15 more. I mean, almost entirely --
16 A No, not necessarily more. That's
17 fair.
18 Q Okay. You said that you had some
19 notes on corrections, typos in the reports?
20 A Yes.
21 Q Why don't we go through those
22 first.
23 A Yeah, I would be glad to.
24 So to start with, going back to my
25 hard copy of the declaration, I'll start with

1 the first case. That's 1002, I think.
2 So regarding Patent 8,381,974 --
3 and I'll just refer to that as the '974
4 patent. So in my declaration, which is Apple
5 Exhibit 1003, there's two corrections that I
6 would like to draw your attention to. One is
7 around paragraph 85. I think it's 85.
8 Let me get there quickly.
9 Okay. Just above paragraph 85,
10 there's an annotated figure. It's on the top
11 page margins of page 49. So the correction
12 on this figure is that the -- in the lower
13 right corner, inside the parenthesis, it says
14 right now Apple-1017, and that should have
15 been 1 -- it should not have been 1017. It
16 should have been Holloway.
17 So Holloway is actually now
18 referred to as 1017. Holloway here is, in
19 fact, 1006. So that's a bigger correction.
20 And in the same issue goes through
21 for other declarations as well. I can read
22 similarly in the other declaration -- in the
23 other declarations.
24 Regarding Patent '947, it's in a
25 slightly different area, but also near

1 paragraph 85, 86, same problem.
2 Pardon me, sorry. It's paragraph
3 72. Just below the heading of paragraph 72
4 in that declaration, there's also the same
5 problem.
6 And for the third declaration
7 regarding Patent 8,127,984, that's in the
8 same -- basically in the same area as the
9 first declaration just above paragraph 85.
10 Are you okay with that?
11 Q Yes, sir.
12 A And then there's another smaller --
13 an even smaller typo, which is -- it's just
14 an extra word.
15 I'll go to -- so returning to the
16 first declaration regarding 8,381,974,
17 paragraph 128 -- yes, paragraph 128 on page
18 81 of my declaration for this patent, moving
19 from bottom and counting rows from the
20 bottom, third row from the bottom, at the
21 very end, currently it says, "Where the set
22 information is a security if the such."
23 Strike "the." Just keep "such a read
24 signal."
25 Q Okay.

1 A Similar issues can be found in the
2 other two declarations. If necessary, I'll
3 point you to them. If not, we can stop here.
4 Q I think I understand.
5 It's the same wording in the other
6 two. It may not be in the exact same place,
7 right?
8 A They are -- they are in different
9 claims, but they're related claims. So I'll
10 be happy to just go through the specific
11 paragraph and point them out to you, yeah,
12 point them out for you there.
13 Q No, I think that's okay.
14 Are those the only two?
15 I know there's three declarations.
16 A Yes, these are the only two
17 corrections that I'm aware of to review with
18 you today.
19 Q Okay. In your declaration in the
20 first case, regarding the '974 patent, I'm
21 noticing -- if you go to page 124 internal,
22 there's two pages.
23 A That's right.
24 Q I don't know which would be easier
25 for you to use.

1 You're using internal, so I'm going
2 to stick with that.
3 A Okay. Internal 124?
4 Q Correct.
5 A Okay.
6 Q In Footnote 15, there's some
7 wording highlighted.
8 Do you have that in your version?
9 A I have the hard copy. I don't
10 have -- I don't see highlights.
11 Q Okay. Like the fourth and the
12 third line from the bottom, is there shading
13 over the number 4, and then past that, "But
14 this disclosure, last detail," do you see
15 that wording?
16 A I see the wording, "But this
17 disclosure, last detail," as to -- relative
18 to the transition from one type of
19 transmission to the other.
20 Q Is that shaded or highlighted in
21 your hard copy or no?
22 And I know that maybe it's not to
23 scale.
24 A I honestly, I don't see any
25 shading. My printout is black and white.

1 It should be gray scale, but I
2 don't see any gray scale, either.
3 Q Okay. It wasn't your intention to
4 highlight any text in these three
5 declarations, correct?
6 A Not insofar as those are concerned.
7 In my declaration, they were
8 highlighted texts in bold and different
9 color, but I do not recall highlighting this
10 part, and nor do I see it here in my -- in my
11 copy.
12 Q Okay. If you can go to paragraph
13 17 of this declaration in the '974 patent.
14 A Okay.
15 Q It says, "My curriculum vitae
16 attached to Exhibit A," correct?
17 A Exhibit A, yes. That's what it
18 says, yes.
19 Q There's no Exhibit A attached to
20 the document, correct?
21 A I believe I was referring to an
22 exhibit that I attached to the declaration
23 when it was first drafted.
24 And obviously, in the -- in the
25 final filing, the exhibit number would be --

1 would have been in something else.
2 Q How did you prepare for the
3 deposition today?
4 And I just want to caution you.
5 You may have had conversations with counsel.
6 It's okay to say that you did, but obviously
7 I don't want to hear any content of that
8 communication or those communications.
9 A Sorry, your question is?
10 Q My question is, how did you
11 prepare?
12 A How did I prepare?
13 Q Yes.
14 A Upon receiving the notification
15 that there would be a deposition today, I
16 prepared by first receiving a series of
17 documents that were filed.
18 I believe I got some of them from
19 my original file list, and I believe I also
20 went to the Internet, the United States
21 Patent, the website, and downloaded certain
22 materials, the PTAB decision. There may be a
23 few documents that were submitted. I don't
24 recall exactly.
25 It's possible some of those files

1 were received from counsel, but these were
2 the -- what I reviewed were my own
3 declaration, PTAB decision for the Institute
4 and the original patent, the three patents
5 and the prior arts that I have on the list,
6 them being Willgert, Mooney, Holloway and
7 Pitroda. So I went through the review and I
8 had conversation with counsel for Apple in
9 preparation.
10 What else? I think that's it
11 reviewed. Had discussion with counsel. The
12 usual thing.
13 Q And without getting into the
14 content of communications, when did you have
15 discussions with counsel?
16 A Mostly my discussion occurred this
17 week. I think our first conversation of any
18 substance regarding the conversation was
19 Monday, Monday on the 19th.
20 Q And how long were these
21 conversations?
22 Again, I don't want hear anything
23 that was said.
24 A Understood.
25 I think over the course of -- since

1 Monday until, you know, we were -- we were
2 ready today, I had multiple conversations
3 with counsel. How long, about -- about
4 eleven, twelve hours or so. Yes.
5 Q Okay. And when you drafted the
6 original declarations, how much time did you
7 spend?
8 A Those took a long time, but I
9 actually and honestly don't remember how long
10 it took.
11 It's in the neighborhood of -- it's
12 definitely more than ten hours or -- I think
13 it was more than even 20 hours for the first
14 one, and because of the similarity of the
15 claims across different patents, the later
16 ones might have taken less time.
17 And so there were a lot of working
18 there, including the discussion with counsel,
19 what this means and information that counsel
20 mentioned regarding the positions.
21 Q Okay. Yeah, I don't want to hear
22 actually anything that was said.
23 A Okay.
24 Q Even characterizations.
25 A Okay, yes.

1 Q And I appreciate it.
2 A Okay. So I'm guessing -- and I
3 don't want to speculate, but it's definitely
4 more than 17 hours each.
5 Q Okay. Did you locate any of the
6 four references in these IPRs, were they
7 found by you?
8 A Good question.
9 I'm not sure. I don't recall. I
10 know some of them were provided by a -- by
11 counsel, I think, through some search firm.
12 I can't be sure that all of them were.
13 Q Is it possible that you included --
14 that you were -- the idea for including some
15 of these?
16 A It is possible. In my customary
17 work process, we will be -- I mean, I will be
18 discussing certain aspect of a particular
19 claim, and then I often would suggest that
20 certain positions will be clear and obvious
21 if we include additional prior art.
22 I'm not sure if that was the case
23 in -- in this example, but it was a while
24 ago, so I -- I could go back to my notes and
25 see if there's such record.

1 Q That's okay.
2 Why don't we look at Willgert,
3 which is Exhibit 1004 in all three cases.
4 I'm going to copy that into the
5 chat. You can feel free to look at your hard
6 copy.
7 MR. JAFFESS: For Charlene, we're
8 not marking this because it's marked in the
9 underlying IPRs.
10 A Yeah, I think I have it.
11 Q Okay.
12 A And I also have the hard copy as I
13 mentioned before.
14 Q What sort of RFID tag is embedded
15 in Willgert?
16 A So Willgert, if I can go back to my
17 declaration, basically Willgert describes an
18 integrated communication device that has the
19 functionality of a Bluetooth communication
20 as -- and a RFID functionality.
21 Q The RFID functionality was a
22 passive RFID functionality or active RFID
23 functionality?
24 A Willgert has described both --
25 provided both. The RFID transponder in

1 Willgert can be active, as it said.
2 And I'll go to paragraph 0026 of
3 Willgert. "When this transponder is a
4 read-only transponder, i.e., information can
5 only be read from the transponder, it is
6 beneficial in respect of both embodiments
7 that a transponder 2 is provided with its own
8 battery 10 for supplying power to the control
9 logic 3 of the transponder."
10 So in this particular -- embodied
11 in this particular disclosure, Willgert
12 discusses an active transponder. And later
13 on, there was a -- Willgert further discuss
14 another situation.
15 Let me find it.
16 Including -- let's go to paragraph
17 0031.
18 "This design is particularly
19 advantageous when the present communications
20 unit is constructed so that the transponder
21 will also function when the mobile telephone
22 is switched off in general. This means that
23 the user can be identified without carrying a
24 separate transponder."
25 So in the second situation, it's --

1 Willgert discusses the case when the mobile
2 phone is switched off and while the
3 transponder can still function. So it would
4 have been obvious, to a person of skill in
5 the art, that when you switch out a mobile
6 phone, you will likely not have a battery on.
7 And in one of the embodiments that
8 Willgert provided that the transponder does
9 not have its own battery, then it's -- this
10 particular transponder that can also operate
11 in the passive mode.
12 Q Is there a description of anything
13 in Willgert that can change the output of the
14 RFID transponder?
15 MR. CHOWDHURY: Objection, vague.
16 A I believe, yes.
17 If we turn to paragraph 0018.
18 Willgert states, "However, the transponder
19 may also be designed to enable information to
20 be written into the transponder memory so
21 that said information can be read out from
22 the memory later on, in the aforesaid
23 manner."
24 So in this particular case,
25 Willgert is describing the functionality of

1 the transponder being able to change the
2 response because the response would have been
3 affected by the -- by the -- the
4 functionality here, that information can be
5 written into this transponder memory so that
6 information can be read out from the memory
7 later on.
8 So as you change the information
9 written into the transponder memory, the
10 response to a query signal from a RFID reader
11 would also change.
12 Q You're saying the read-out that's
13 discussed in paragraph 18 is a read-out via
14 an RFID interrogation and response?
15 A I'm saying, yes, that the
16 information that the transponder was given in
17 the right -- as its memory is being affected
18 by the right process, later on it would have
19 been obvious, to a person of skill, that
20 during the read-out stage, that the response
21 to the RFID reader, would also have been
22 changed.
23 Q There's no other way that Willgert
24 can read-out data that's written in this
25 manner? It has to be via a RFID

1 interrogation response?
2 A There will be other ways that
3 what -- in the context of Willgert here, a
4 person of ordinary skill in the art would
5 have understood that the RFID reader is the
6 one that does a read-out.
7 Q Do you know what part of the phone
8 would be reading out that memory in Willgert?
9 A That was not my position.
10 To me, it's possible other parts of
11 the phone may also have access to that
12 information, but that's not -- that's not a
13 discussion here in Willgert. At least the
14 technical aspect of discussion here wasn't
15 about whether that read-out would be -- it's
16 obvious, to a person of ordinary skill in the
17 art, that that particular read-out is not
18 about letting other parts of the phone read
19 other content.
20 Q I mean, paragraph 18 of Willgert
21 says that it can write to memory and then it
22 can be read-out.
23 Is there anything that makes it
24 clear that that read-out, as you say, would
25 be read by a person of ordinary skill in the

1 art as an RFID read-out interrogation and
2 response?
3 MR. CHOWDHURY: Objection, vague.
4 MR. JAFFESS: I ask that you object
5 to the form without other comment, please.
6 BY MR. JAFFESS:
7 Q I also ask, Dr. Ding, and I'm happy
8 regardless of the objection or not, if
9 there's ever a question, just let me know.
10 A Sure.
11 I'm going to just refer to
12 Willgert, because Willgert, even in the
13 description of related art, has set up what a
14 person of ordinary skill would have
15 understood.
16 In 0015, Willgert stated, "The ID
17 tag is affixed to the object or to the person
18 that is to be identified. The identity can
19 be read by a communicator at a given short
20 distance so the communicator will be reading
21 that entity, for example, of five meters.
22 Depending on the design, it is also possible,
23 in addition to reading an identity, to read
24 and write other information from and into the
25 ID tag respectively with the aid of

1 communicator."
2 Q Is there any other disclosure in
3 Willgert that you read that could alter the
4 RFID response of the Willgert system?
5 A I'm not -- sorry, Counsel. I'm not
6 sure I understand the question.
7 Are there any other?
8 Q Sure.
9 You know, I asked originally if
10 there was anything that could change the
11 outcome of the Willgert RFID transponder.
12 A Okay.
13 Q You pointed to this write
14 capability. You say the read-out is an
15 alteration.
16 Is there anything else in Willgert
17 that suggests alteration in the RFID
18 transponder response of the Willgert system?
19 A So paragraph 17 explains that, "The
20 transponder 2 is of a kind known per se. So
21 this is prior art. It includes control logic
22 3 and associated memory and modulator 4. The
23 transponder is thus adopted to receive a
24 query signal sent from a suitable known
25 communicator," that's a reader, "and

1 therewith reflect a received signal while
2 modulating the signal with a pulse train, and
3 the information relating to the pulse train
4 is stored in the memory."
5 So here, together with what we have
6 discussed, you have a pulse train that will
7 modulate the response of the RFID, the
8 transponder, and that's how it changes, the
9 response.
10 The pulse train allows the
11 modulation by -- the pulse train allows the
12 signal to be different. And together, this
13 also mentioned that the information relating
14 to the pulse train is stored in the memory,
15 and as we have established earlier, that the
16 write signal write into the memory.
17 And it would have been obvious, to
18 a person of ordinary skill in the art, that
19 writing that information into the memory
20 would allow the pulse train to be -- to be
21 different. The information relating to the
22 pulse train is stored in the memory.
23 So it would also have changed the
24 nature of the pulse train and how the
25 response from the transponder 2 would be

1 different.
2 Q Is Bluetooth the primary
3 communication function of the Willgert
4 device?
5 A So Willgert is broader than that.
6 Willgert does talk about a Bluetooth
7 communication device, but it also provides
8 the design in which the -- at least render
9 the obvious, that this communication device
10 can be -- can be integrated into a mobile
11 phone.
12 So you have a mobile phone, which
13 is not primarily a Bluetooth communication.
14 We could use other means to communicate.
15 Q Those would be -- those would be
16 over-the-air communications means to base
17 stations of network service providers or the
18 like.
19 Is that correct?
20 A That's possible.
21 Q When you're talking about a mobile
22 phone, that's generally referred to as the
23 primary communications means of the mobile
24 phone, correct?
25 A No, I don't know -- I'm not sure I

1 follow you, Counsel.
2 Could you rephrase a little bit?
3 Q Well, when one talks about a mobile
4 phone, primary communications means of that
5 mobile phone is generally through base
6 stations, correct, through mobile service
7 providers?
8 A I wouldn't characterize it as a
9 primary, but it is one of the functions for a
10 mobile phone to use the wireless connection
11 provided by a base station.
12 It may also use WIFI and may also
13 use Bluetooth or other means wirelessly.
14 Q You would at least say that the
15 base station or the WIFI communications means
16 would be primary means versus Bluetooth,
17 which would be something else, correct?
18 A I think whether one uses WIFI or --
19 WIFI more or Bluetooth more is a -- it's a
20 user decision.
21 I wouldn't -- I mean, I already
22 agreed that these are all possible ways a
23 mobile phone would communicate. I'm not
24 taking a position, nor do I think I wrote in
25 my declaration that which one is primary and

1 which one is secondary.
2 Q For communicating to another
3 person, would you agree that the primary
4 means of a mobile phone would be through base
5 stations or WIFI?
6 A To another person, not on the --
7 not in the Bluetooth network.
8 Q Yes.
9 A Okay. If a particular mobile phone
10 is not in the range of another mobile phone's
11 Bluetooth covers the area, then there will
12 be -- there's likely going to be one leg, one
13 segment of the communication that is through
14 either WIFI or cellular or satellite or any
15 other means.
16 And if it is -- the other user will
17 also likely be using Bluetooth to receive a
18 call or perform the other functions, just
19 like the initiator on this side. They could
20 be -- could be using a Bluetooth to -- to
21 affect the voice call communication between
22 this particular user who initiates and
23 another user that this person is attempting
24 to speak to in a voice call.
25 Q Okay. Primary means of

1 communication between one user and another
2 was not in Bluetooth range. It's through one
3 of these other means, correct, base station,
4 WIFI, satellite, correct?
5 A I disagree. I'm not saying one is
6 primary or not. I mean, let's put an
7 example.
8 For a regular person who has a
9 cellular phone, the person has to use his or
10 her hands for other reasons. For example, in
11 a work environment, you have to be -- you're
12 working with your hands and you have your
13 Bluetooth headset on.
14 And so the primary would rely on
15 your Bluetooth, as well as the primary goal
16 of this person's communication would be
17 accomplished by an aggregate of all these
18 technologies, including Bluetooth and
19 including the use of some other wireless
20 means.
21 Q Okay.
22 A But Willgert does not -- does not
23 limit itself to only Bluetooth. That's all
24 I'm saying.
25 Q Sir, you can place a call without

1 using a Bluetooth headset, like you're
2 saying. If you have use of your hands or
3 some other voice command to your phone, you
4 can place a call, correct, from one party to
5 another?
6 A You could place a call without
7 Bluetooth.
8 Q You mentioned that you can use a
9 Bluetooth device to affect a voice call
10 communication, but the Bluetooth device
11 itself cannot perform a full voice call
12 communication, correct?
13 MR. CHOWDHURY: Objection, form.
14 A I think the -- I'm not totally
15 certain of your question.
16 Are you asking whether -- I think
17 you just asked earlier whether a phone can
18 be -- you can use a phone to establish a
19 conversation or a communication without
20 Bluetooth. And I think I answered, yes, it
21 can. And I believe what you're asking is the
22 same thing, unless I'm wrong.
23 Q I'm asking the opposite.
24 A Okay.
25 Q You said you can make a call on

1 your phone without your Bluetooth, and now
2 I'm asking, can you make a call on your
3 Bluetooth without your phone?
4 A Well, without my -- I don't
5 understand.
6 I mean, my phone has Bluetooth. So
7 are you saying if I just have a wireless
8 headset in the -- I mean, if we were talking
9 about in a vacuum, all I have is a Bluetooth
10 mouse here I have. Can I use the mouse to
11 make a phone call? No, I cannot. It's just
12 a mouse.
13 Q And the same is true of a headset,
14 correct? A Bluetooth headset in a vacuum or
15 perhaps even more clearly, it's a -- a
16 Bluetooth headset cannot connect to anything,
17 correct?
18 A A Bluetooth headset has to be
19 connected using Bluetooth to other devices,
20 otherwise, it wouldn't be a Bluetooth.
21 There's no connection. It's just a piece of
22 hardware. There has to be connectivity.
23 Q And to connect to the outside world
24 or to another user, it has to be through one
25 of these other technologies that we've been

1 discussing, base station, cellular provider,
2 WIFI or satellite, correct?
3 A When you say the outside world, it
4 could have a local Bluetooth network between
5 two Bluetooth users.
6 Q Is that discussed in Willgert at
7 all?
8 A In Willgert?
9 Q Yes. Connecting two users via
10 Bluetooth?
11 A Willgert certainly made it obvious
12 that it says in paragraph 30, "In one highly
13 user-friendly application, a transponder can
14 also be included in a mobile telephone
15 designed for Bluetooth communication."
16 So looking at that one of skilled
17 in the art would have an understanding that
18 this transponder is part of a mobile
19 telephone designed for Bluetooth
20 communication.
21 Q You agree that mobile telephone is
22 capable of performing other sorts of
23 communication as well, correct?
24 A That there are various embodiment,
25 but it would at least be obvious to a person

1 skilled in the art that a mobile telephone
2 can also be a -- can also perform -- should
3 be also -- should be also capable of
4 performing other communications.
5 Q Voice calls, correct?
6 A Voice calls? Yes, possible.
7 Q Over one of these technologies
8 we've been discussing, a base station or WIFI
9 or satellite, correct?
10 A Whether the communication -- sorry,
11 Counsel. I'll ask you to rephrase the
12 question or at least give me a complete
13 question.
14 Q Sure.
15 You read mobile phone in Willgert,
16 you expect it to be capable of performing
17 voice calls. You expect those to go over one
18 of these other technologies that we've been
19 discussing, including base stations of
20 service providers or WIFI or satellites,
21 correct?
22 A Those are possibilities. As we
23 mentioned earlier, it -- you may or may not
24 have them available in, for example, a highly
25 enclosed environment, underground and so

1 forth, in which case you will still have the
2 Bluetooth communication to communicate.
3 When you do have other connections
4 in a -- in a friendlier environment, in a
5 highly friendlier environment, the mobile
6 phone would have been obvious, to a person of
7 ordinary skill, that the mobile phone could
8 also have other connectivities, such as
9 satellite or WIFI.
10 Q 4G, 5G, 3G and the like, correct?
11 A In the context of whatever
12 generation, I did not opine on that. It may
13 be 3GPP. It may be proprietary.
14 Q But you would expect it to have
15 connectivity to a mobile service provider and
16 mobile phone, correct?
17 A I would expect that it -- to the
18 extent that the service is available and the
19 user subscribed to it, then his or her mobile
20 phone would be capable of communicating over
21 networks, such as satellite or WIFI or 3GPP.
22 Q It would be capable of
23 communicating via voice communication,
24 correct?
25 A It should be.

1 It's possible to -- to communicate
2 via voice communication to the extent that,
3 you know, there's no other constrain.
4 If you -- if one is -- if we're
5 looking at a disabled person who needs -- who
6 cannot use their hand and would have to use a
7 Bluetooth to activate the call to the
8 outside, as you said, to another user via a
9 satellite or other connections, then a
10 Bluetooth will -- will always be part of that
11 connection.
12 MR. JAFFESS: We've been going for
13 about an hour.
14 If it's okay with you, I would like
15 to take a short break.
16 THE WITNESS: Sure, yes.
17 Thank you, Counsel.
18 (Brief recess taken.)
19 MR. JAFFESS: I'm going to refer to
20 the '974 patent itself. I'll put it in the
21 chat.
22 This is Exhibit 1001 in the 1362
23 case.
24 BY MR. JAFFESS:
25 Q Dr. Ding, can you go to claim 1?

1 Dr. Ding, do you see claim 1 of the
2 '974 patent?
3 A Yes.
4 Q In particular, line 34 to 35,
5 recites, "Output voice call signals."
6 Do you see that?
7 A The transceiver configured to
8 output voice call signals in the first state,
9 yes.
10 Q What are voice call signals?
11 And this is recited in the claims
12 of the '974 patent.
13 A Thank you.
14 All right. I don't recall the
15 patent specifically explaining voice call
16 signals other than, you know, plain and
17 ordinary meaning.
18 So to a person of skill in the art,
19 a voice call signal is just a signal that's
20 related to -- that has some voice information
21 in there.
22 Q So you read the signal to a
23 Bluetooth headset as falling within the term
24 "voice call signal"?
25 A I did.

1 Q Because it has some voice
2 information in it?
3 A Well, it has the voice information
4 in there that that particular signal
5 connecting the Bluetooth headset and the
6 mobile phone has the voice call signals in
7 there, has signals that conveys the voice
8 information.
9 Q Does it have to be from a currently
10 ongoing voice call, this information? Could
11 it be pre-recorded?
12 MR. CHOWDHURY: Objection, form.
13 MR. JAFFESS: Strike that.
14 BY MR. JAFFESS:
15 Q Let me ask, if I have a Bluetooth
16 headset connected to my phone and there is a
17 voicemail message that I'm listening to on
18 that Bluetooth headset, is that a voice call
19 signal?
20 A I don't think I have -- I don't
21 think in my declaration I took that position.
22 A voice call signal, even if in the context
23 of having a live voice call communication
24 between two mobile devices, since the signal
25 would have simultaneously been sent via the

1 Bluetooth connection between the mobile phone
2 device and the Bluetooth headset, that is a
3 live, not necessarily. It could have been
4 recorded, but that's not something I have
5 opined on.
6 In the situation when you have a
7 live voice call with another device user,
8 that voice call signal would be
9 simultaneously sent via the Bluetooth link to
10 the headset.
11 Both for the -- also the voice
12 call, the headset, the Bluetooth headset at
13 the time of the alleged invention was a very
14 well-known thing in 1999. Ericcson already
15 started to make headset for cell phones, and
16 that allows a user to communicate hands free
17 without having to hold the phone to their
18 head.
19 So that headset can be used to both
20 receive voice, voice so it can hear it and
21 also allows the speaker, the communicate --
22 the person who's communicating that's
23 speaking to the headset so that the other end
24 user gets the signal.
25 Q Thank you.

1 I'm not sure I understand the
2 answer as far as, you know, does your
3 understanding of the term voice call signals
4 as recited in claim 1 of the '974 patent
5 include pre-recorded voicemail messages?
6 A I did not apply that understanding,
7 even though I wouldn't argue with someone if
8 they insist that a voice call recording is a
9 voice call signal.
10 But in my opinion, it strictly has
11 to do with a live signal, a live
12 communication in which the Bluetooth headset
13 is being used to receive that voice call
14 signal. And then that's what that is, the
15 petition and analysis I've done in my
16 declaration.
17 Q So your analysis is based solely on
18 a live telephone call conveyed to a Bluetooth
19 headset, correct?
20 A My analysis is based on a reading
21 that at least covers that scenario.
22 Q But you wouldn't argue with someone
23 if they said a pre-recorded voicemail message
24 is a voice call signal?
25 MR. CHOWDHURY: Objection to the

1 form.
2 A I never -- I did not analyze that
3 position. I did not take that position nor
4 did I spend time trying to look into the file
5 history during the prosecution of this patent
6 to see whether or not the applicant
7 understood that their voice call includes
8 such a signal or not.
9 So that's not in my declaration. I
10 did not do that, perform that analysis. So
11 sitting here today, I cannot tell you, you
12 know, whether or not that would be the right
13 position or not.
14 But regardless, my analysis was
15 covering a situation that at least a live
16 call, a live voice call communication is
17 ongoing, that voice call signal is
18 communicated through this Bluetooth link from
19 the mobile -- from the communication unit of
20 Willgert to -- in the combination of Willgert
21 and Mooney, the wireless headset of Mooney.
22 Q Wired connection to a headset?
23 A I apologize.
24 Q I'm saying, hypothetically, if
25 there was a connection to a wired headset --

1 and I'm currently wearing a wired headset.
2 If that's connected to my phone, is
3 that voice call data -- excuse me, strike
4 that.
5 If the headset or wired headset,
6 would the data there be considered a voice
7 call signal here on a wired headset?
8 MR. CHOWDHURY: Objection, scope.
9 A I was just thinking whether I took
10 that position at all in my declaration. I
11 don't think I did that analysis.
12 Q Sitting here today, you can't say,
13 one way or the other?
14 A I can say it, but it would be
15 better for me to look at the file history and
16 understand what exactly were the positions
17 took by the applicant.
18 You know, I gave them the credit
19 that they know what they meant by voice call,
20 but if it's just talking about right here in
21 this particular -- in a number of
22 discussions, it's always talking about
23 wireless.
24 So I did not even think about
25 looking into, as you said, a wireless

1 connection. It just wasn't what I was asked
2 to do. Although the nature of the signal,
3 right, it's a voice call signal and whether
4 it's wirelessly or wirelessly connected,
5 that's a separate matter.
6 Q Let's look at Exhibit 1005, which
7 involves all the cases.
8 MR. JAFFESS: I'll put it into the
9 chat for anybody.
10 BY MR. JAFFESS:
11 Q I know, Dr. Ding, that you have a
12 hard copy there.
13 A Yes. Let me get that.
14 Okay. I have it.
15 Q What was the title of Mooney?
16 A "Smart Bluetooth interface gateway
17 to mate a non-Bluetooth wireless device with
18 a Bluetooth headset."
19 Q So Mooney is meant for a
20 non-Bluetooth wireless device, correct?
21 A No. Mooney simply says if in, you
22 know, your previous design, old design, that
23 they didn't have a Bluetooth -- and think
24 about the cell phone of 1980s. You know, you
25 can now connect by putting a gateway there

1 with a headset.
2 Q I think we said the same thing.
3 I mean, that's what Mooney is
4 geared towards, a dumb or an old phone
5 without Bluetooth, right?
6 A I don't see that. I mean, in
7 Mooney it was clear that they were talking
8 about a design.
9 You can look at figure 1 of Mooney.
10 There's a wireless Bluetooth phone that has a
11 smart interface gateway with communication
12 over a wireless phone. That's in one box.
13 So to a person that was skilled in
14 the art, it is suggesting a new design
15 whereby you have a -- you no longer need to
16 design an old, dumb, conventional phone. You
17 have a phone that has Bluetooth and that can
18 communicate with the Bluetooth headset, and
19 you can do other wireless connections through
20 the conventional part of the -- I mean
21 through the conventional protocol.
22 Q Figure 1 shows a conventional
23 Bluetooth phone.
24 That's what you're saying?
25 A No, that's not what I'm saying.

1 I'm saying that a person of
2 ordinary skill in the art would have
3 understood that the -- the design provided by
4 Mooney is an integrated phone that has both
5 functionalities, including conventional
6 functionalities and Bluetooth.
7 Q If you can look to claim 1 of
8 Mooney, please.
9 A Okay.
10 Q It discusses the connection in an
11 audio path from a non-Bluetooth-enabled
12 device to a Bluetooth front end, correct?
13 A I'm reading the claim to enable
14 Bluetooth communications between a wireless
15 Bluetooth headset and a Bluetooth-enabled
16 device.
17 Q Okay, exactly.
18 A non-Bluetooth-enabled device. Do
19 you see the "non" in line 2?
20 A I see it.
21 Q Yeah. I mean, that's what I'm
22 saying. It's meant for a
23 non-Bluetooth-enabled device.
24 That's the purpose of Mooney,
25 correct?

1 A No, no, it's not.
2 A person of ordinary skill in the
3 art would have known and understood that this
4 invention was telling -- it was showing a
5 newer design that would have included a
6 Bluetooth front end or gateway, plus the
7 traditionally non-Bluetooth, you know,
8 component.
9 So you would have -- classically
10 your design wasn't -- did not have Bluetooth.
11 And this particular -- Mooney teaches that
12 one could make a newer phone, which we
13 call -- I think we call it a -- sorry, a
14 wireless Bluetooth phone that can have the
15 traditional functionality and the new -- and
16 basically a new Bluetooth connection.
17 And further on, if you look at
18 figure 1, it indicates that it's not just
19 connecting a Bluetooth with a conventional
20 phone separately.
21 I mean, a person of skill in the
22 art wouldn't have understood this to be a
23 slapping together of two pieces anyway. It
24 would be an integrated design, and also
25 differentials, a common power source. The

1 same power source.
2 So taking this together along with
3 other disclosures in Mooney, a person of
4 skill in the art would have understood that
5 Mooney's teaching a new phone, which is
6 exactly what happened when Bluetooth became
7 part of the cell phone at the time of --
8 basically around the turn of the century,
9 2000.
10 So I disagree.
11 Q I think we're saying the same
12 thing, but we're sort of talking past each
13 other a little.
14 But Mooney is about adding
15 Bluetooth functionality to older phones,
16 right? That's -- you're sort of saying it
17 and not saying it.
18 I'm not sure if you agree or
19 disagree with me or not.
20 A I disagree with you taking an old
21 phone. I'm past that.
22 I'm saying that the design is
23 broader than that. It teaches that the -- it
24 teaches a person of ordinary skill in the art
25 that one can make a design, a newer phone

1 that has a Bluetooth functionality all
2 integrated together.
3 And I'm showing you that that is --
4 is evident from -- even from them having a
5 common power source. And the line with the
6 box with both of them together shows a box of
7 a wireless phone in figure 1.
8 Q So you disagree that Mooney is
9 about mating a non-Bluetooth wireless device
10 with a Bluetooth headset, correct?
11 A I'm not disagreeing with that part.
12 I'm disagreeing with the characterization.
13 To a person of ordinary skill in the art,
14 Mooney is just only teaching putting two
15 pieces of devices together.
16 Q Okay. The Willgert device, is that
17 a non-Bluetooth wireless device?
18 A No. The Willgert is a
19 communication unit that has a Bluetooth
20 functionality.
21 Q So it is not a non-Bluetooth
22 wireless device, correct?
23 A Well, I -- okay.
24 So Willgert -- Willgert is teaching
25 that the functionality of a communication

1 unit that has Bluetooth in there. That by
2 itself, the Bluetooth itself there is not a
3 non-Bluetooth device. It is a -- it teaches
4 a Bluetooth communication unit.
5 Q Okay.
6 A And the transponder, sorry.
7 Q I apologize. I didn't mean to cut
8 you off.
9 Can you look to figure 3 of Mooney?
10 A Yeah.
11 Q It's a flow chart. This shows how
12 an incoming call can be answered on a
13 Bluetooth headset, correct?
14 A I'm sorry, can you repeat that
15 again?
16 Q This shows how an incoming call is
17 answered on a Bluetooth headset, correct?
18 And you can look at the associated
19 text as well. It starts in paragraph 46 or
20 actually 45.
21 A Paragraph 46, figure 3, shows a
22 process by which an incoming call is answered
23 using a Bluetooth headset and the wireless
24 Bluetooth phone using a -- including a smart
25 Bluetooth interface gateway, as shown in

1 figure 1 and 2.
2 Q This requires the phone itself,
3 correct, not just a Bluetooth headset?
4 A This requires a -- what we call a
5 wireless Bluetooth phone, yes.
6 Q Okay. And the call itself --
7 strike that.
8 The call itself is received first
9 on the phone and then initiates to the
10 wireless Bluetooth headset, correct?
11 A Is that figure 3?
12 Q Umm-hmm.
13 A Okay. So in step 302, phone
14 initiates connection to Bluetooth headset.
15 Q Yes.
16 A And then phone sends ring to
17 Bluetooth headset.
18 Q The phone receives the call first,
19 correct?
20 A Pardon?
21 Q The phone receives the call first,
22 correct?
23 A Does the phone receive the call?
24 Q Before the Bluetooth headset
25 receives any indication, the phone receives

1 the call, correct?
2 A It says the phone sends ring, so
3 the phone is receiving the ring, okay.
4 Q Does it say how this call is being
5 transmitted?
6 A Does this figure show how the call
7 is transmitted?
8 Q Yes. That's the question.
9 A Well, figure 3 is an embodiment.
10 It says, "For example, you can have the phone
11 initiate a connection to the headset."
12 So it's connected. And then
13 immediately or later on at some point, the
14 phone sends a ring to the Bluetooth headset.
15 If, I imagine, in this process, it's -- it
16 has to be later due to the flow, and then
17 initiate an audio transfer from headset to
18 phone using Bluetooth, after which you
19 terminate.
20 Q You would expect the call to go
21 over the conventional wireless phone system
22 of Mooney, correct, as shown on figure 1?
23 A You mean whether I -- whether I
24 should expect that in this particular
25 example, as example, whether the call might

1 go through other network?
2 Q Umm-hmm.
3 A It is possible. All these are in
4 different embodiment, different exemplary
5 examples, exemplary cases.
6 So a person with ordinary skill in
7 the art, would have understood that the
8 entire design -- the invention by Mooney was
9 that you can have a phone and you can have
10 the Bluetooth as part of this functionality.
11 And you can then connect the voice call to
12 the wireless headset.
13 Just like in set 312 says, "Receive
14 button press command for Bluetooth headset to
15 answer incoming call, and that call could be
16 a voice call." So that voice call signal is
17 communicated from the mobile device to the
18 headset.
19 Q Let's look at Holloway, which is
20 Exhibit 1006 in the chat.
21 A Okay all right.
22 Q Holloway is basically about
23 authentication, correct, user authentication?
24 MR. CHOWDHURY: Objection, form.
25 A Holloway says, this invention to

1 present invention starting from page 1 on
2 line 3, "The present invention relates to a
3 mobile communication unit, and more
4 particularly, to a unit with which a large
5 variety of transactions can be undertaken."
6 And that's what it says here.
7 Q Okay. And, you know, going further
8 down, it talks about fraud and the problems
9 of identity, paragraph starting line 25.
10 A Yes.
11 Q And the whole next page talks
12 about -- mostly the whole next page talks
13 about the identity check, confirming the
14 identity of the user.
15 A Yes. I think on page 2, about line
16 12, discusses that the check of the --
17 identity check can be incorporated into a
18 telephone communication. So that's the first
19 aspect that we mentioned.
20 If I could read it, starting from
21 line 2, "According to a first aspect of the
22 present invention, there is provided a mobile
23 communications unit comprising means for
24 telephone communication connected to means
25 for checking the identity of a user of the

1 unit so that the result of such a check can
2 be incorporated into a telephone
3 communication."
4 Q If you look at your declaration --
5 if you look at your declaration of the 1362
6 case, as an example.
7 A Yes.
8 Q Paragraph 92.
9 A Okay.
10 Q The bottom, actually, of 92, the
11 last five lines. You're, I think, reading
12 Holloway to include selection functionality.
13 Is that correct?
14 If Holloway were interpreted to
15 exclude, you say, it wouldn't work or
16 something?
17 MR. CHOWDHURY: Objection, form.
18 A In my declaration regarding the
19 '974 patent, I said that, "Specifically when
20 interacting with an electronic device, as
21 described in Pitroda," so I specifically call
22 it Pitroda, "a user would have been able to
23 use a phone's input for the selection of a
24 credit card account, and on the client's
25 electronic transaction device 12 for the

1 intended transaction, and subsequently will
2 transmit the account information to an
3 external RFID reader."
4 And so I cited the transmitter to
5 an external RFID reader. So I cite in
6 Exhibit 1006 -- there's a bit of a typo here
7 that's -- I said 29, column 7, 911 through
8 929. Not 29, 29, 29. I see an issue there.
9 Q Okay.
10 A Maybe that's where the confusion
11 is, but...
12 Q Let me --
13 A It's Pitroda and later on Holloway.
14 Q Later on Holloway?
15 A Yes.
16 Q Okay. But you say, "The selection
17 is expressed in Holloway," right?
18 Going on, you make various
19 citations to Holloway. That's what I'm
20 trying to understand.
21 A Yeah, I think -- I think that's a
22 typo 107, not 106, at the bottom of page --
23 of page 54 and the first part of paragraph
24 92.
25 Q Okay. I think it corresponds to

1 sections of Holloway, right?
2 Page 7 there's a paragraph that
3 starts at line 11. It starts at line 28.
4 Responding to line 28, there's a paragraph
5 that runs from page 7, line 28. I used the
6 pagination at the bottom of Holloway, not at
7 the top to match them up.
8 I guess -- actually, yeah, it's off
9 by one, so the page at the bottom. I believe
10 these are Holloway citations.
11 And I understand there's the
12 repeated 29, but beyond that, the rest of
13 these appear to be --
14 A Yes, you're right. It's -- yes,
15 it's Holloway. Sorry.
16 Q So I'd like to look at Holloway,
17 because you're saying that, you know,
18 starting from the first line on page --
19 internal page 55 of your declaration at
20 paragraph 92, you say, "This selection
21 authorization of such transactions is
22 expressed in Holloway."
23 So I'd like us to look at, you
24 know, the cited material on page 6, 9, and
25 then further down below, page 3 of Holloway,

1 because I would like to understand how
2 Holloway expresses this selection.
3 Go to page 6 of Holloway, starting
4 at line 22.
5 A Page 6 of Holloway, yes, okay.
6 I'm there, sorry.
7 Q Sure.
8 This talks about the ability -- 6,
9 line 22 through 29, it talks about the
10 ability to store data in the phone, right,
11 photo of the owner?
12 A Once the -- okay.
13 Sorry, page 6, line 22?
14 Q Correct.
15 A "Once the telephone has been loaded
16 with memory, the user is able to operate it
17 for any payment application, just like with
18 an RFID smart card. For example, in a mass
19 transit application, the user simply
20 presented their phone to the reader while
21 passing through the gate or barrier. In
22 doing so, the correct amount for the journey
23 is automatically debited from the account
24 held in the owner's telephone."
25 Right.

1 Q Okay. I see some of the confusion.
2 This is -- this is page 6 of
3 Holloway at the top and 7 at the bottom.
4 Okay. I think this is what's cited. I think
5 this was the material intended to be cited in
6 paragraph 92.
7 You're saying that this involves
8 user selection of something on the phone.
9 Is that correct?
10 A Yes. So the user selection in
11 this, I don't know if it's page 6 or 7 now,
12 but in line 11, "In the event that a owner
13 wishes to perform a transaction that involves
14 a payment," so there's a transaction that
15 involved a payment now, I need to pay
16 someone, "it's first necessary to load the
17 telephone with sum of money. To do this the
18 owner must connect his telephone to his bank
19 account via the Internet."
20 So the owner is selecting a bank
21 account. The user can make that selection.
22 There may be multiple bank accounts or
23 multiple credit cards for that transaction.
24 Q Okay. This talks about loading
25 money onto the chip on Holloway, correct?

1 A It talks about the owner goes to
2 one of his bank account, his select bank
3 account, and loads money to -- yeah, to load
4 the money.
5 Q It's connected via the Internet and
6 putting money onto the phone.
7 You believe that this is selecting
8 one of his bank accounts somehow, his or her,
9 excuse me, the user?
10 A Here in Holloway, he says that he
11 goes to his bank account and selects which
12 account he would load the money -- to load
13 the money from.
14 Q Okay. Now, focusing on the payment
15 point, right, not loading point, right?
16 You cited the next paragraph,
17 right, about payment. Does the user make any
18 selection at the time of payment, in
19 Holloway? Because you cited the next
20 paragraph and I read the paragraph that's
21 saying the exact opposite. The user
22 presents -- simply presents the telephone to
23 the reader. That's all.
24 So do you think this disclosure
25 cited to lines 22 to 26 -- you labeled it as

1 page 6, I believe it's page 7, shows the
2 users selection at the time of payment in
3 Holloway?
4 A Well, in Holloway, if we start a
5 little bit earlier -- you know, now I'm
6 confused about these margins, but if we go at
7 the bottom page number of Holloway, that's
8 here, page 3, the bottom at line 24 to 26, it
9 talks about the user.
10 "The unit may further include a
11 relatively short range of communication means
12 capable of undertaking transactions, and the
13 identity checking means may also be used to
14 authorize the transactions."
15 So that tells you that the user
16 could apply the use of the short-range
17 communication along with adding a check to
18 authorize that.
19 When you're going through -- as
20 later on we were talking about column --
21 sorry, page 7 in the bottom, "Once a
22 telephone is loading money, the user is able
23 to operate it for any payment applications
24 just like a RFID smart card."
25 So the user has a phone. The money

1 is in there, but then it doesn't mean that
2 you're just going to authorize any payment.
3 So the previous cited party
4 mentioned in page 3, line 24 to 26, talks
5 about the authorization by the user. And so
6 that's a user selection, whether you
7 authorize or not, whether you are going
8 through mass transit or you're paying, as
9 later on in page 7 here says, "Making other
10 purchase, the user will be able to authorize
11 it."
12 So that's a selection step that the
13 user provides a -- that the user provided a
14 means to authorize a transaction. The
15 transaction could be legitimate. Some of
16 them may not be, and the user is free to
17 choose, authorize to choose which one to
18 authorize, which one not to authorize.
19 Q Okay. But in those scenarios, the
20 user, at the time of payment, is not
21 selecting between different cards or accounts
22 or modes of payment, correct? They are
23 simply presenting the phone to the reader.
24 A They're not simply presenting the
25 phone to a reader.

1 Your phone could be in your pocket
2 and you just walk through it, but if you
3 happen to pass through a retailer's reader
4 but you didn't make a purchase, you do not
5 want that purchase to go through. So the
6 user would have to authorize it.
7 Q Again, that doesn't get to
8 selecting between different payment methods,
9 correct? It's authorized or not.
10 A I disagree.
11 It does get into which
12 one you're -- which one you're authorizing
13 and which one you're not authorizing. So
14 there is a selection by the user. The user
15 chooses to authorize some and not authorize
16 others.
17 Q When I go to this reader in a mass
18 transit application, you're telling me, in
19 Holloway, the user can select from different
20 ways of paying at the time of payment with
21 the phone. Yes?
22 A Did you say mass transit?
23 Q Yes.
24 You had pointed to -- we're saying
25 it's the bottom number of page 7, lines 22 to

1 26.
2 A Okay.
3 Q You had pointed to this disclosure
4 as evincing selection of the credit card
5 account in Holloway.
6 A Yes.
7 Q And I'm having trouble seeing it.
8 I'm trying to understand this point
9 that you're trying to make with Holloway.
10 A Okay. If we just focus on this
11 paragraph alone, the last sentence says, "In
12 doing so, the correct amount for the journey
13 is automatically debited from the amount held
14 in the owner's telephone."
15 So first of all, we mentioned
16 earlier that the selection could be
17 authorized whether you are making that
18 purchase or not for this particular mass
19 transit, let's just say the mass transit --
20 what do you call it -- mass transit
21 application.
22 And we are also very familiar with
23 many mass transit operators, including in the
24 Bay area part, in Washington D.C., that for
25 your journey, it's not just a matter of, you

1 know, presenting. You actually have to --
2 you would need to show -- you would need to
3 make sure that the correct amount is being
4 ducted or debited.
5 So the user is making a selection
6 regarding whether that's -- whether this is
7 the vendor you want to -- you want them to
8 deduct your money and also the correct amount
9 has to be selected, too.
10 Q And where does it say the user at
11 that point chooses what account gets debited?
12 That's what I'm trying to get at in
13 Holloway. I don't see it. I'm trying to
14 understand where you do see it.
15 A If we go to the next paragraph of
16 the same -- on the same page, "The mobile
17 telephone also provides a means to carry out
18 normal day-to-day credit/debit purchases."
19 So the debit or credit, that could
20 be a selection, too. You may have multiple
21 credit cards or one credit card, one debit
22 card, and the user is free to select which
23 one to charge it to.
24 "While making a purchase, the owner
25 of the mobile telephone present it to the

1 reader." So you're now selecting a card,
2 present it to the reader, and that's
3 interfaced with the retailer's EPOS,
4 electronic point of sale system.
5 So the user is making that
6 selection whether it's debit or credit or
7 which credit card.
8 Q Okay. You're reading that in this
9 passage?
10 A I am reading that in the passage.
11 It's obvious, to a person of skill in the
12 art. If you have even more than one card,
13 it's more likely. I don't know how many
14 cards the average person carries, but from my
15 personal observations, it's more than one.
16 And what if one card gets rejected,
17 you just have to switch the card. It's very
18 common for one card to fail. I've had many
19 failed card transactions where I had to
20 present a different card. I don't know
21 whether you have. And at that point, the
22 user would have to make a selection to go to
23 a different card.
24 Q Yeah, I get what you're saying when
25 you're dealing with physical cards, that

1 might have to happen.
2 I don't see in this disclosure --
3 it says, "You can carry out a normal
4 day-to-day credit/debit purchase."
5 You're saying that implies alone
6 the ability to select different card
7 information that is stored on the device of
8 Holloway?
9 MR. CHOWDHURY: Objection, asked
10 and answered.
11 BY MR. JAFFESS:
12 Q I mean, that's -- I'm actually just
13 trying to get down to it and understand what
14 the argument is, because I think there's a
15 lot being read in between the line here and
16 very transparent. But I don't see it and I'm
17 trying to understand it.
18 Simply saying, being able to do a
19 debit or credit transaction implies the
20 ability to choose at the time of purchase by
21 multiple cards.
22 Is that what you're saying?
23 MR. CHOWDHURY: Same objection.
24 A What I'm saying is that the
25 paragraph here says day-to-day credit

1 card/debit card purchases. And in my
2 personal experience, and to a person of
3 ordinary skill in the art, is that it would
4 make sense to have the ability, if you can
5 have your device being charged on one card,
6 you should be able to do it on multiple
7 cards.
8 It makes perfect sense to do more
9 than one in case you didn't carry these cards
10 and one of the cards gets rejected or your
11 debit amount is exceeded.
12 So -- so when you make a purchase,
13 as this one described -- just imagine a
14 scenario. You're making a purchase and the
15 owner of the mobile phone, as you said,
16 presented it to the reader and it failed.
17 And so what do you do? You still need that
18 medicine. You still need to make that
19 transaction. You switch to a different card,
20 and that's a user selection.
21 Q This says, at the very bottom of
22 page 7, "In having verified that the user is
23 the legal owner, the reader extracts the
24 credit card details from the telephone."
25 These are -- the user had the

1 opportunity, at this point, to select between
2 multiple cards is what you're saying, and
3 then this extracts one of them?
4 A Well, all we understand -- all
5 we're saying is this is a very broad
6 invention where you can imagine that you're
7 carrying a phone which functions as one or
8 more credit cards. It never said just one
9 card.
10 And if you have -- if you're a
11 user, you have the ability to -- to charge
12 onto multiple cards using the cell phone.
13 And it is a user choice as to which one to
14 charge it to. It's a very simple -- that's a
15 similar -- that's a simple thing, simple
16 day-to-day credit/debit purchases.
17 I'm just giving you examples of why
18 you even want to do that because you could
19 have some of them getting rejected.
20 Q Let's go to page 6 of Holloway,
21 line 28.
22 This talks about the features of,
23 quote, a credit card, end quote.
24 Do you see that?
25 A Yeah, I see it.

1 Q You read Holloway as allowing more
2 than one credit card.
3 Can I understand where you see that
4 in Holloway?
5 MR. CHOWDHURY: Objection, asked
6 and answered.
7 A As that word explains it, but
8 you're trained in legal. You understand when
9 you read this paragraph, it says,
10 "Additionally in order for the mobile
11 telephone to provide the features of a credit
12 card," it doesn't mean you can only do it for
13 one.
14 You know, I'm not going to be
15 arguing semantics here, but even for a
16 non-legal person reading that, one would have
17 understood easily, to a person of skill in
18 the art, that, you know, this is the one --
19 one example. I mean, if you can do it for
20 one card, you can do it for multiple cards.
21 Holloway has never said that this
22 particular phone can only perform the
23 functionality of one card. In fact, it says
24 credit card/debit card in our -- in the
25 next -- on the next page.

1 MR. JAFFESS: Why don't we take a
2 break, if that works for everybody.
3 MR. CHOWDHURY: Sure.
4 THE WITNESS: Ten minutes or five?
5 MR. JAFFESS: Can we take 15?
6 I'm not actually sure -- I'm sorry,
7 let's go off the record.
8 (Brief recess taken.)
9 BY MR. JAFFESS:
10 Q Dr. Ding, if you can go in Holloway
11 Exhibit 1006, page 5, the number at the
12 bottom, the paragraph starting on line 21.
13 A Yes.
14 Q It talks about the chips that are
15 used in Holloway, right? The chip found on a
16 smart card or combi card.
17 Do you see that?
18 A Yes, I see it.
19 Q So this includes the chip in the
20 phone, correct?
21 A It says it's an RFID chip 16. 15
22 is a scanner.
23 I apologize, sorry. What is your
24 question?
25 Q Holloway uses this kind of chip in

1 its mobile phone, correct?
2 A Holloway's mobile phone has at
3 least this chip, 16.
4 Q Is this a different kind of system
5 than Willgert?
6 Willgert doesn't have a RFID chip
7 16. If you can refer back to Willgert,
8 Exhibit 1004.
9 A And you're asking whether the
10 Willgert chip is the same as Holloway chip?
11 Q Does Willgert talk about a chip at
12 all for RFID, for its RFID transponder?
13 A Okay. I don't recall whether
14 Willgert talks about a chip there. Within
15 Willgert, there are a number of components,
16 and some of them can be integrated into a
17 chip.
18 Let me confirm that. Does it say
19 anything about a chip?
20 I don't recall them saying anything
21 about a chip in Willgert.
22 If you look at Willgert in figure 1
23 or maybe in figure 3 -- well, let's focus on
24 figure 1. There can be integrations of
25 element 4 and 3 into a chip or maybe other

1 integrated -- other ways of integrating it.
2 The concept of a chip is rather loose. It's
3 just an integrated circuit that can perform
4 certain functionalities.
5 And I think here Holloway is
6 discussing a RFID chip that allows you to do
7 the scanning, to scan the fingerprints and
8 send that information into the processor.
9 Q So items 3 and 4 in Willgert could
10 function on a chip or with chips?
11 I don't -- those can be combined
12 onto a chip, is that what you're saying?
13 A I'm trying to find Willgert.
14 There's nothing stopping a person,
15 of ordinary skill in the art, to incorporate
16 a design to incorporate this element 3 and 4
17 into a chip from -- on Willgert.
18 Q The control logic 3 and the
19 modulator 4 could be implemented on a chip in
20 Willgert?
21 A It's a design for a person of
22 ordinary skill in the art. They may not,
23 they may. I don't think I opine on what the
24 chip is and how big, what is a skill of a
25 chip. But the important thing about Willgert

1 is that it performs the functionalities that
2 is required by, you know, 974, 947 and 984.
3 Q Willgert -- I'm sorry.
4 A That's okay.
5 Q Willgert performs RFID function,
6 correct?
7 A Again, Willgert has at least the
8 ability to function as a RFID transponder,
9 passive or active.
10 I think we went over that.
11 Q Does the combination use -- the
12 combination in ground 2, does that use
13 Holloway's chip in Willgert?
14 A No, not necessarily. This was
15 obvious.
16 So the functionalities that
17 Holloway has described regarding being able
18 to perform the multi-card transaction,
19 allowing a user to select one card while
20 making a transaction, to authorize a
21 transaction, to authenticate the identity of
22 the user. That's what I relied on in my
23 declaration because these renders mainly of
24 the independent claims of these three patents
25 obvious.

1 You don't necessarily have to grab
2 one chip and then say you have to fit
3 everything in that chip. It's a defined
4 choice for a person of ordinary skill in the
5 art and a good engineer would be able to make
6 that decision.
7 Q So if Holloway allows for a
8 selection between multiple cards by a user --
9 A I think we went over that.
10 Q Yes.
11 What does Pitroda do in combination
12 of ground 2?
13 A Would you like me to read the
14 declaration back?
15 Go to my declaration.
16 Q If you can, yes, or you just can
17 paraphrase.
18 I just don't know why you're adding
19 Pitroda to the other three.
20 A Well, there are a number of reasons
21 why Pitroda was referenced, but I think of
22 the main reasons -- one of the reasons I, in
23 my declaration, cite Pitroda, has to do
24 with -- for example, with the declaration on
25 974 regarding claim 5 -- claim 5. And so in

1 claim 5, specifically I would go to paragraph
2 204.
3 But further, the Willgert, Mooney,
4 Holloway, Pitroda -- in Willgert, Mooney,
5 Holloway and Pitroda, the mobile telephone
6 stores then brought different kinds within
7 one local telephone as described Holloway.
8 We went over that earlier, for example, mass
9 transit, vending machines and other
10 electronic purchases.
11 Now I start reading 102 in
12 paragraph 204. "This store information would
13 have been obtained at least during an initial
14 configuration operation through one of
15 several exemplary processes described in
16 Pitroda as being used by a transaction
17 service providers to provide RFID smart card
18 information to a mobile telephone."
19 So in particular, Pitroda
20 paragraph -- I'm sorry, column 3 on line 59
21 to column 4, line 40, I stated that Pitroda's
22 figure 10 references a transaction service
23 provide service flow, and I cross it going
24 from step 154 to 156 to 158, where the client
25 completes a credit card application, and so

1 that's the users doing the application. And
2 the client's application is approved by the
3 bank. The transaction is approved by the
4 bank in step 156, and then the data is now
5 loaded onto the client's electronic
6 transaction service by the service provider.
7 So this shows, during which a user
8 registers as a new client and a new
9 electronic transaction device requested by
10 the client, citing Apple 1007, column 17,
11 line 44 through line 62.
12 "And during this process, a
13 Citibank MasterCard is loaded onto a device
14 by the transaction service provider and a
15 client profile is updated. And further, the
16 transaction service provider may provide --
17 issue account services, which would include
18 activating specific accounts, such as credit
19 cards or online electronic transaction device
20 12, after which the specific cards may be
21 downloaded from the transaction service
22 provider 10 to the electronic transaction
23 device 12."
24 So I conclude by stating that "A
25 POSITA would have understood and found

1 obvious that the loading or downloading of
2 the RFID smart card information onto the
3 Willgert, Mooney, Holloway, Pitroda telephone
4 involved provisioning or provision of
5 activation information," because you have to
6 get approved and authenticated and all that,
7 "to the user in a RFID smart card
8 transaction."
9 So that covers the provision of the
10 first RFID transponder data to the mobile
11 communication device.
12 Q And you also reference Pitroda in
13 column 7, lines 18 to 29. This is the
14 sentence that has on selection.
15 A On 7. And this is referenced in
16 the paragraph I just read or is it in a
17 different one?
18 Q No, this is referenced -- if you go
19 to paragraph 91.
20 A Paragraph 91, okay.
21 This started with "A POSITA would
22 have found relevant solutions within Pitroda
23 filed four years ago before the date and
24 would have expected success in cooperating
25 Pitroda solution into Willgert, Mooney,

1 Holloway."
2 Q Correct.
3 Do you see that?
4 A Yes.
5 Q And it says, "Pitroda teaches
6 electronic payment methods by enabling a user
7 to select a credit card account."
8 Do you see that?
9 A Right, yes.
10 I see it, yeah.
11 Q When you use the word "enabling,"
12 you're not using it in a patent law sense,
13 were you, Pitroda's disclosures enabling?
14 MR. CHOWDHURY: Objection to the
15 form.
16 BY MR. JAFFESS:
17 Q Section 102 says -- excuse me, 112.
18 A No, I'm not an attorney. So you
19 would have to -- you could explain to me the
20 difference.
21 Q Well, there's a concept in patent
22 law about enablement, you know, sufficient
23 disclosure that would enable one of ordinary
24 skill in the art to make an invention.
25 And I just want to make sure that

1 your wording was not meant to encompass that
2 because you used the word "enable."
3 MR. CHOWDHURY: Objection.
4 THE WITNESS: Pardon?
5 MR. CHOWDHURY: Objection to the
6 extent that it calls for a legal conclusion.
7 A As I mentioned, I wasn't trained in
8 the law here, but what I'm -- what it
9 discussed here was that Pitroda teaches that
10 the user can use Pitroda's electronic payment
11 method to select a credit card account on
12 their transaction device and transmit account
13 information.
14 So it's a capability, at least
15 here, that the user, by using it here, is
16 capable of making the selection -- making the
17 selection of the credit card account, that
18 is.
19 MR. JAFFESS: Can we break for just
20 a minute or two?
21 THE WITNESS: I'm sorry. I didn't
22 hear you.
23 MR. JAFFESS: Let's go off the
24 record, please, for just two minutes.
25 THE WITNESS: Okay.

1 (Brief recess taken.)
2 MR. JAFFESS: We have no further
3 questions at this time.
4 MR. CHOWDHURY: No questions for me
5 as well.
6 MR. JAFFESS: We can jump off the
7 record.
8 MR. CHOWDHURY: Off the record.
9 (Whereupon, the deposition was
10 concluded at 2:50 p.m.)
11 (Witness was excused.)
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1 C E R T I F I C A T E
2 I, CHARLENE FRIEDMAN, a Certified Court
3 Reporter and Notary Public, qualified in and for
4 the State of New Jersey do hereby certify that
5 prior to the commencement of the examination DR.
6 ZHI DING was duly sworn by me to testify to the
7 truth the whole truth and nothing but the truth.
8 I DO FURTHER CERTIFY that the foregoing
9 is a true and accurate transcript of the testimony
10 as taken stenographically by and before me at the
11 time, place and on the date hereinbefore set forth.
12 I DO FURTHER certify that I am neither a
13 relative of nor employee nor attorney nor counsel
14 for any of the parties to this action, and that I
15 am neither a relative nor employee of such attorney
16 or counsel, and that I am not financially
17 interested in the action.
18
19
20
21 CHARLENE FRIEDMAN, RPR, CRR, CCR of the
22 State of New Jersey
23 License No: 30XI00204900
24 Date: May 22, 2025
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1 LAWYER'S NOTES

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1 DEPOSITION ERRATA SHEET
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4 Case Caption: Apple v. Varia
5
6
7 DECLARATION UNDER PENALTY OF PERJURY
8 I declare under penalty of perjury
9 that I have read the entire transcript of
10 my Deposition taken in the captioned matter
11 or the same has been read to me, and
12 the same is true and accurate, save and
13 except for changes and/or corrections, if
14 any, as indicated by me on the DEPOSITION
15 ERRATA SHEET hereof, with the understanding
16 that I offer these changes as if still under
17 oath.
18
19
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21 Signed on the _____ day of
22 _____, 20____
23
24 _____
25 DR. ZHI DING

1 DEPOSITION ERRATA SHEET
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25 DR. ZHI DING

1 DEPOSITION ERRATA SHEET

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24 SIGNATURE:_____DATE:_____

25 DR. ZHI DING